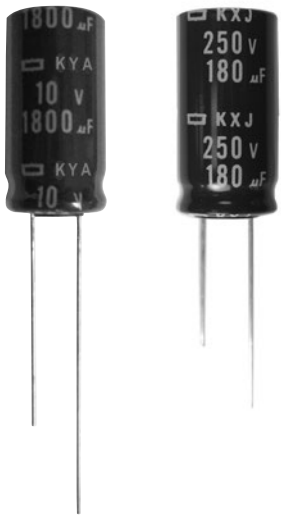
Miniature Aluminum Electrolytic Capacitors



Product code guide (Radial lead type)

(Example : KMQ series, 450V-100μF, φ18×40L, Long lead with bulk)

Please refer to the following table

Contents	Code
Polar	E
Bi-polar	B

Series	Code
KMQ	KMQ
FL	FL-

Type	Code
Radial lead	E

Tol.(%)	Code
±20	M
±10	K
-10～+30	Q
-10～+50	T

Sleeve materia	Terminal plating material	Code
PET	Sn-Bi	D
	Sn	S
Sleeveless (Coating case)	Sn-Bi	G
	Sn	H

1	2 3 4	5 6 7	8	9 10	11 12 13	14	15 16 17	18
E	KMQ	451	E	LL	101	M	M40	S
Category	Series code	Voltage code	Terminal code	Lead forming/ Taping code	Capacitance code	Capacitance tolerance	Size code	Supplement code

Voltage(V)	Code
4	4R0
6.3	6R3
10	100
25	250
100	101
250	251
⋮	⋮

Type	Contents	Code
Lead forming (Bulk)	Long Lead	LL
	Cut(3.5mm)	C3
	Cut(5.0mm)	C5
	Forming Cut	FC
	Snap-in φD=5～8	FM
	Snap-in φD=10～18	MC
	Snap-in φD=20～22	RC
	Horizontal	BC
Taping	Straight	TD
	Gradual forming	
	Straight (Skip a hole)	TE
	Forming (F=2.5mm)	TA
	Forming (F=5.0mm)	TC

Cap.(μF)	Code
1.0	1R0
4.7	4R7
10	100
47	470
100	101
470	471
1,000	102
⋮	⋮

φD(mm)	Code
4	D
5	E
6.3	F
8	H
10	J
12.5	K
14.5	U
16	L
18	M
20	N
22	P

L(mm)	Code
5	05
7	07
9	09
11	11
11.5	B5
12.5	C5
13	13
15	15
16	16
20	20
25	25
30	30
31.5	N3
35	35
35.5	P1
40	40
45	45
50	50
55	55
60	60

Refer to product guide for lead forming and taping specifications.

*Refer to the appendix (Part number) for codes not listed here.

SRM Series

- Downsized from current standard SRE series
- 5mm height
- Endurance : 1,000 hours at 85℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

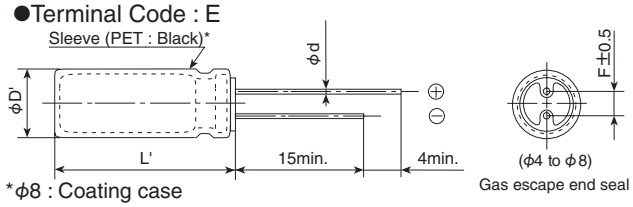
SRM → Downsized → SRE P110

◆SPECIFICATIONS

Items	Characteristics								
Category Temperature Range	−40 to +85℃								
Rated Voltage Range	4 to 50Vdc								
Capacitance Tolerance	±20% (M)								(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)								(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.40	0.38	0.30	0.23	0.17	0.15	0.13	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	
	Z(−25℃)/Z(+20℃)	7	4	3	2	2	2	2	
	Z(−40℃)/Z(+20℃)	15	8	8	6	4	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 85℃.								
	Capacitance change	≦±20% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.								
	Capacitance change	≦±20% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							

◆DIMENSIONS [mm]

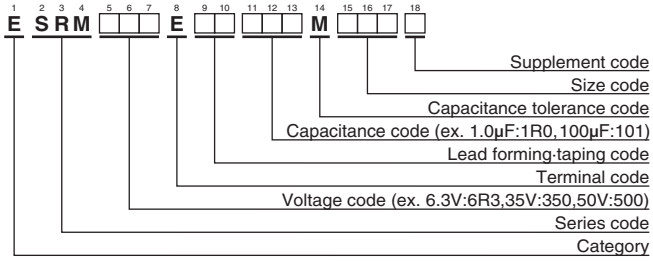
●Terminal Code : E



*φ8 : Coating case

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	2.5
φD'	φD+0.5max.			
L'	L+1.0max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
4	100	5×5	0.40	55	ESRM4R0E□□101ME05D
	220	6.3×5	0.40	88	ESRM4R0E□□221MF05D
6.3	22	4×5	0.38	22	ESRM6R3E□□220MD05D
	47	4×5	0.38	40	ESRM6R3E□□470MD05D
	330	8×5	0.38	141	ESRM6R3E□□331MH05G
10	33	4×5	0.30	36	ESRM100E□□330MD05D
	100	6.3×5	0.30	78	ESRM100E□□101MF05D
	220	8×5	0.30	148	ESRM100E□□221MH05G
16	10	4×5	0.23	18	ESRM160E□□100MD05D
	22	4×5	0.23	33	ESRM160E□□220MD05D
	33	5×5	0.23	47	ESRM160E□□330ME05D
	47	5×5	0.23	55	ESRM160E□□470ME05D
25	4.7	4×5	0.17	13	ESRM250E□□4R7MD05D
	10	4×5	0.17	25	ESRM250E□□100MD05D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
25	22	5×5	0.17	41	ESRM250E□□220ME05D
	47	6.3×5	0.17	63	ESRM250E□□470MF05D
	100	8×5	0.17	116	ESRM250E□□101MH05G
35	3.3	4×5	0.15	12	ESRM350E□□3R3MD05D
	33	6.3×5	0.15	56	ESRM350E□□330MF05D
	47	8×5	0.15	85	ESRM350E□□470MH05G
50	1.0	4×5	0.13	7.2	ESRM500E□□1R0MD05D
	2.2	4×5	0.13	10	ESRM500E□□2R2MD05D
	3.3	4×5	0.13	14	ESRM500E□□3R3MD05D
	4.7	4×5	0.13	19	ESRM500E□□4R7MD05D
	10	5×5	0.13	31	ESRM500E□□100ME05D
	22	6.3×5	0.13	49	ESRM500E□□220MF05D
	33	8×5	0.13	76	ESRM500E□□330MH05G

□□ : Enter the appropriate lead forming or taping code.

SRE Series

- 5mm height
- Endurance : 1,000 hours at 85℃
- Non solvent resistant type
- **RoHS Compliant**

SRM P109

Downsized

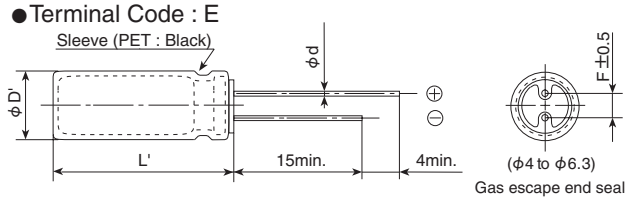
SRE

◆SPECIFICATIONS

Items	Characteristics								
Category Temperature Range	−40 to +85℃								
Rated Voltage Range	4 to 50Vdc								
Capacitance Tolerance	±20% (M)								(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)								(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.35	0.24	0.20	0.16	0.14	0.12	0.10	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	
	Z(−25℃)/Z(+20℃)	7	4	3	2	2	2	2	
	Z(−40℃)/Z(+20℃)	15	10	8	6	4	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 85℃.								
	Capacitance change	≦±20% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.								
	Capacitance change	≦±20% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							

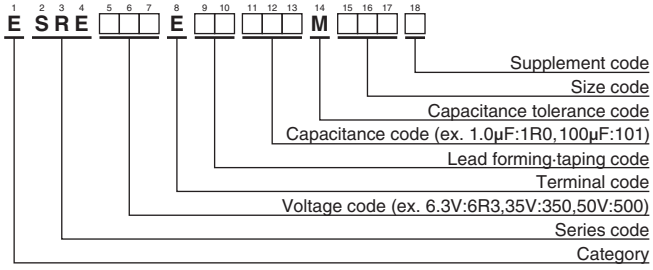
◆DIMENSIONS [mm]

●Terminal Code : E



φD	4	5	6.3
φd	0.45	0.45	0.45
F	1.5	2.0	2.5
φD'	φD+0.5max.		
L'	L+1.0max.		

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
4	33	4×5	0.35	23	ESRE4R0E□□330MD05D
6.3	10	4×5	0.24	12	ESRE6R3E□□100MD05D
	22	4×5	0.24	23	ESRE6R3E□□220MD05D
	47	5×5	0.24	38	ESRE6R3E□□470ME05D
	100	6.3×5	0.24	60	ESRE6R3E□□101MF05D
10	33	5×5	0.20	35	ESRE100E□□330ME05D
16	4.7	4×5	0.16	10	ESRE160E□□4R7MD05D
	10	4×5	0.16	17	ESRE160E□□100MD05D
	22	5×5	0.16	32	ESRE160E□□220ME05D
	47	6.3×5	0.16	50	ESRE160E□□470MF05D
25	3.3	4×5	0.14	9.3	ESRE250E□□3R3MD05D
	4.7	4×5	0.14	12	ESRE250E□□4R7MD05D
	33	6.3×5	0.14	45	ESRE250E□□330MF05D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
35	2.2	4×5	0.12	8.3	ESRE350E□□2R2MD05D
	3.3	4×5	0.12	11	ESRE350E□□3R3MD05D
	4.7	4×5	0.12	15	ESRE350E□□4R7MD05D
	10	5×5	0.12	25	ESRE350E□□100ME05D
	22	6.3×5	0.12	40	ESRE350E□□220MF05D
50	1.0	4×5	0.10	6.2	ESRE500E□□1R0MD05D
	2.2	4×5	0.10	10	ESRE500E□□2R2MD05D
	3.3	4×5	0.10	14	ESRE500E□□3R3MD05D
	4.7	5×5	0.10	19	ESRE500E□□4R7ME05D
	10	6.3×5	0.10	29	ESRE500E□□100MF05D

□□ : Enter the appropriate lead forming or taping code.

KRE Series

- 5mm height
- Endurance : 1,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

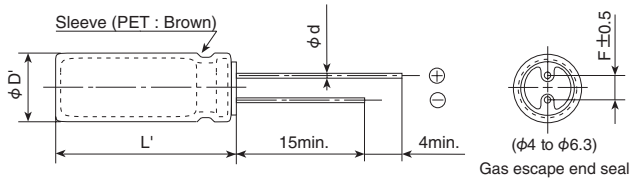
KRE
105℃
SRE P110

◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−55 to +105℃							
Rated Voltage Range	6.3 to 50Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.27	0.23	0.19	0.15	0.13	0.11	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	
	Z(−25℃)/Z(+20℃)	3	3	2	2	2	2	
	Z(−40℃)/Z(+20℃)	9	7	5	3	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 105℃.							
	Capacitance change	≦±20% of the initial value						
	D.F. (tanδ)	≦200% of the initial specified value						
	Leakage current	≦The initial specified value						
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±20% of the initial value						
	D.F. (tanδ)	≦200% of the initial specified value						
	Leakage current	≦The initial specified value						

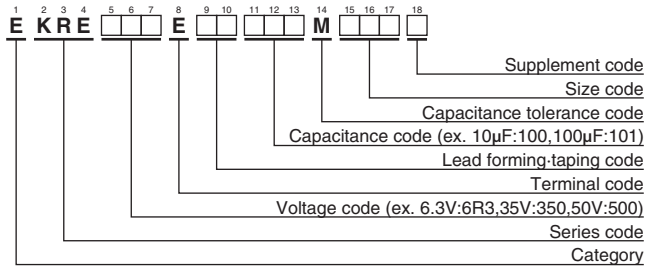
◆DIMENSIONS [mm]

●Terminal Code : E



φD	4	5	6.3
φd	0.45	0.45	0.45
F	1.5	2.0	2.5
φD'	φD+0.5max.		
L'	L+1.0max.		

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
6.3	10	4×5	0.27	12	EKRE6R3E□□100MD05D
	22	4×5	0.27	21	EKRE6R3E□□220MD05D
	47	5×5	0.27	36	EKRE6R3E□□470ME05D
	100	6.3×5	0.27	56	EKRE6R3E□□101MF05D
10	33	5×5	0.23	34	EKRE100E□□330ME05D
16	4.7	4×5	0.19	9.4	EKRE160E□□4R7MD05D
	10	4×5	0.19	16	EKRE160E□□100MD05D
	22	5×5	0.19	30	EKRE160E□□220ME05D
	47	6.3×5	0.19	48	EKRE160E□□470MF05D
25	3.3	4×5	0.15	8.8	EKRE250E□□3R3MD05D
	4.7	4×5	0.15	12	EKRE250E□□4R7MD05D
	33	6.3×5	0.15	45	EKRE250E□□330MF05D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
35	2.2	4×5	0.13	7.7	EKRE350E□□2R2MD05D
	3.3	4×5	0.13	11	EKRE350E□□3R3MD05D
	4.7	4×5	0.13	15	EKRE350E□□4R7MD05D
	10	5×5	0.13	25	EKRE350E□□100ME05D
	22	6.3×5	0.13	40	EKRE350E□□220MF05D
50	1.0	4×5	0.11	5.6	EKRE500E□□1R0MD05D
	2.2	4×5	0.11	10	EKRE500E□□2R2MD05D
	3.3	4×5	0.11	14	EKRE500E□□3R3MD05D
	4.7	5×5	0.11	19	EKRE500E□□4R7ME05D
	10	6.3×5	0.11	29	EKRE500E□□100MF05D

□□ : Enter the appropriate lead forming or taping code.

SRA Series

- 7mm height
- Endurance : 1,000 hours at 85℃
- Non solvent resistant type
- **RoHS Compliant**

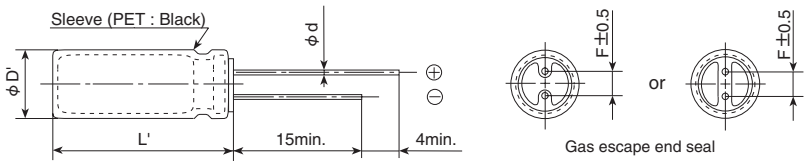
SRG P115 → Downsized → **SRA**

◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−40 to +85℃									
Rated Voltage Range	4 to 63Vdc									
Capacitance Tolerance	±20% (M)									(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)									(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	63V	
	tanδ (Max.)	0.35	0.24	0.20	0.16	0.14	0.12	0.10	0.08	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	63V	
	Z(−25℃)/Z(+20℃)	4	4	3	2	2	2	2	2	
	Z(−40℃)/Z(+20℃)	10	10	8	6	4	3	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 85℃.									
	Capacitance change	≦±20% of the initial value								
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS **C 5101-4**.									
	Capacitance change	≦±20% of the initial value								
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								

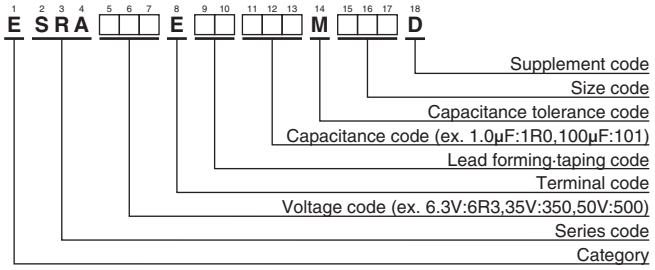
◆DIMENSIONS [mm]

●Terminal Code : E



φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	3.5
φD'	φD+0.5max.			
L'	L+1.0max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
4	33	4×7	0.35	26	ESRA4R0E□□330MD07D
	47	4×7	0.35	34	ESRA4R0E□□470MD07D
	100	5×7	0.35	61	ESRA4R0E□□101ME07D
	220	6.3×7	0.35	95	ESRA4R0E□□221MF07D
	470	8×7	0.35	154	ESRA4R0E□□471MH07D
6.3	22	4×7	0.24	31	ESRA6R3E□□220MD07D
	47	5×7	0.24	47	ESRA6R3E□□470ME07D
	330	8×7	0.24	156	ESRA6R3E□□331MH07D
10	33	5×7	0.20	43	ESRA100E□□330ME07D
	100	6.3×7	0.20	80	ESRA100E□□101MF07D
	220	8×7	0.20	140	ESRA100E□□221MH07D
16	10	4×7	0.16	25	ESRA160E□□100MD07D
	22	5×7	0.16	39	ESRA160E□□220ME07D
	47	6.3×7	0.16	59	ESRA160E□□470MF07D
	100	6.3×7	0.16	97	ESRA160E□□101MF07D
25	33	6.3×7	0.14	53	ESRA250E□□330MF07D
	47	6.3×7	0.14	71	ESRA250E□□470MF07D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
35	4.7	4×7	0.12	20	ESRA350E□□4R7MD07D
	10	5×7	0.12	30	ESRA350E□□100ME07D
	22	6.3×7	0.12	47	ESRA350E□□220MF07D
	33	6.3×7	0.12	64	ESRA350E□□330MF07D
	47	8×7	0.12	83	ESRA350E□□470MH07D
50	1.0	4×7	0.10	10	ESRA500E□□1R0MD07D
	2.2	4×7	0.10	15	ESRA500E□□2R2MD07D
	3.3	4×7	0.10	18	ESRA500E□□3R3MD07D
	4.7	5×7	0.10	23	ESRA500E□□4R7ME07D
	10	6.3×7	0.10	34	ESRA500E□□100MF07D
	22	6.3×7	0.10	57	ESRA500E□□220MF07D
	33	8×7	0.10	76	ESRA500E□□330MH07D
63	1.0	4×7	0.08	11	ESRA630E□□1R0MD07D
	2.2	4×7	0.08	17	ESRA630E□□2R2MD07D
	3.3	5×7	0.08	21	ESRA630E□□3R3ME07D
	4.7	6.3×7	0.08	26	ESRA630E□□4R7MF07D
	10	6.3×7	0.08	47	ESRA630E□□100MF07D

□□ : Enter the appropriate lead forming or taping code.

KMA Series

- 7mm height
- Endurance : 1,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

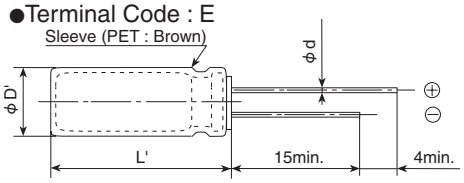
KMA
105℃
SRA P112

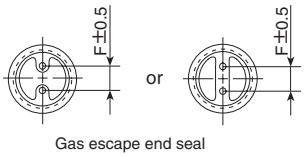
◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−55 to +105℃									
Rated Voltage Range	4 to 63Vdc									
Capacitance Tolerance	±20% (M)									(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)									(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	63V	
	tanδ (Max.)	0.35	0.22	0.19	0.16	0.14	0.12	0.10	0.08	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V	63V	
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	
	Z(−40℃)/Z(+20℃)	10	6	5	3	3	3	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 105℃.									
	Rated voltage	4 to 16Vdc					25 to 63Vdc			
	Capacitance change	≦±25% of the initial value					≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.									
	Rated voltage	4 to 16Vdc					25 to 63Vdc			
	Capacitance change	≦±25% of the initial value					≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								

◆DIMENSIONS [mm]

●Terminal Code : E





φD	4	5	6.3
φd	0.45	0.45	0.45
F	1.5	2.0	2.5
φD'	φD+0.5max.		
L'	L+1.0max.		

◆PART NUMBERING SYSTEM

1	2 3 4	5 6 7	8	9 10	11 12 13	14	15 16 17	18
E	KMA		E			M		D

- Supplement code
- Size code
- Capacitance tolerance code
- Capacitance code (ex. 10μF:100,100μF:101)
- Lead forming·taping code
- Terminal code
- Voltage code (ex. 6.3V:6R3,35V:350,50V:500)
- Series code
- Category

Please refer to "Product code guide (radial lead type)"

KMA Series

◆STANDARD RATINGS

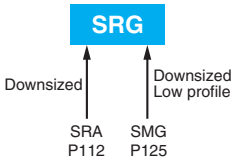
WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
4	33	4×7	0.35	26	EKMA4R0E□□330MD07D
	47	4×7	0.35	34	EKMA4R0E□□470MD07D
	100	5×7	0.35	61	EKMA4R0E□□101ME07D
	220	6.3×7	0.35	95	EKMA4R0E□□221MF07D
6.3	22	4×7	0.22	31	EKMA6R3E□□220MD07D
	47	5×7	0.22	47	EKMA6R3E□□470ME07D
10	33	5×7	0.19	43	EKMA100E□□330ME07D
	100	6.3×7	0.19	80	EKMA100E□□101MF07D
16	10	4×7	0.16	25	EKMA160E□□100MD07D
	22	5×7	0.16	39	EKMA160E□□220ME07D
	47	6.3×7	0.16	59	EKMA160E□□470MF07D
	100	6.3×7	0.16	97	EKMA160E□□101MF07D
25	33	6.3×7	0.14	53	EKMA250E□□330MF07D
	47	6.3×7	0.14	71	EKMA250E□□470MF07D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
35	4.7	4×7	0.12	20	EKMA350E□□4R7MD07D
	10	5×7	0.12	30	EKMA350E□□100ME07D
	22	6.3×7	0.12	47	EKMA350E□□220MF07D
	33	6.3×7	0.12	64	EKMA350E□□330MF07D
50	1.0	4×7	0.10	10	EKMA500E□□1R0MD07D
	2.2	4×7	0.10	15	EKMA500E□□2R2MD07D
	3.3	4×7	0.10	18	EKMA500E□□3R3MD07D
	4.7	5×7	0.10	23	EKMA500E□□4R7ME07D
	10	6.3×7	0.10	34	EKMA500E□□100MF07D
	22	6.3×7	0.10	57	EKMA500E□□220MF07D
63	1.0	4×7	0.08	11	EKMA630E□□1R0MD07D
	2.2	4×7	0.08	17	EKMA630E□□2R2MD07D
	3.3	5×7	0.08	21	EKMA630E□□3R3ME07D
	4.7	6.3×7	0.08	26	EKMA630E□□4R7MF07D
	10	6.3×7	0.08	43	EKMA630E□□100MF07D

□□ : Enter the appropriate lead forming or taping code.

SRG Series

- Low profile : φ4×7mm to φ18×25mm
- Endurance : 1,000 to 2,000 hours at 85℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

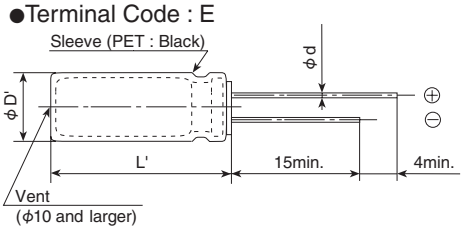


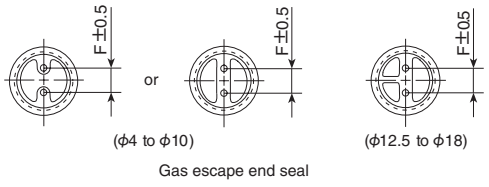
◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−40 to +85℃							
Rated Voltage Range	4 to 50Vdc							
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)							
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)							
Dissipation Factor (tanδ)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V
	tanδ (Max.)	0.38	0.28	0.24	0.20	0.16	0.14	0.12
	When nominal capacitance exceeds 1,000μF, add 0.03 to the value above for each 1,000μF increase. (at 20℃, 120Hz)							
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	4V	6.3V	10V	16V	25V	35V	50V
	Z(−25℃)/Z(+20℃)	6	5	4	3	2	2	2
	Z(−40℃)/Z(+20℃)	12	12	10	8	5	4	3
	(at 120Hz)							
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours (1,000 hours for φ8 and smaller) at 85℃. Capacitance change: ≦±20% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. Capacitance change: ≦±20% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value							

◆DIMENSIONS [mm]

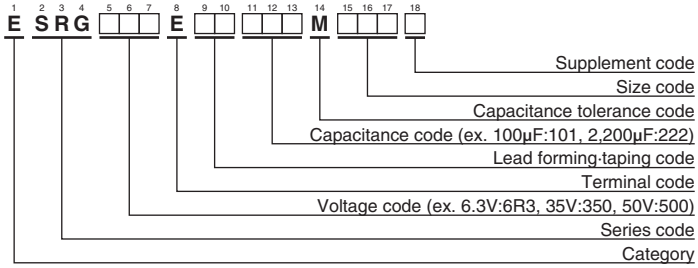
●Terminal Code : E





φD		4	5	6.3	8	10 & 12.5	16 & 18
φd	7L	0.45	0.45	0.45	0.45	—	—
	≧9L	–	0.5	0.5	0.6	0.6	0.8
F		1.5	2.0	2.5	3.5	5.0	7.5
φD'		φD+0.5max.					
L'		L+1.5max. (7L : L+1.0max.)					

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

SRG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case code φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
4	470	8×7	0.38	154	ESRG4R0E□□471MH07D
6.3	47	4×7	0.28	50	ESRG6R3E□□470MD07D
	100	5×7	0.28	87	ESRG6R3E□□101ME07D
	220	6.3×7	0.28	133	ESRG6R3E□□221MF07D
	330	6.3×9	0.28	247	ESRG6R3E□□331MF09D
	330	8×7	0.28	191	ESRG6R3E□□331MH07D
	1,000	10×9	0.28	505	ESRG6R3E□□102MJ09S
	4,700	16×15	0.37	1,410	ESRG6R3E□□472ML15S
	6,800	18×15	0.43	1,660	ESRG6R3E□□682MM15S
	10,000	18×20	0.55	2,020	ESRG6R3E□□103MM20S
10	33	4×7	0.24	46	ESRG100E□□330MD07D
	100	5×9	0.24	132	ESRG100E□□101ME09D
	220	6.3×9	0.24	218	ESRG100E□□221MF09D
	220	8×7	0.24	171	ESRG100E□□221MH07D
	470	8×9	0.24	385	ESRG100E□□471MH09D
	1,000	10×12.5	0.24	625	ESRG100E□□102MJC5S
	2,200	12.5×15	0.27	970	ESRG100E□□222MK15S
	3,300	16×15	0.30	1,310	ESRG100E□□332ML15S
	4,700	18×15	0.33	1,560	ESRG100E□□472MM15S
	6,800	18×20	0.39	1,870	ESRG100E□□682MM20S
	10,000	18×25	0.51	2,370	ESRG100E□□103MM25S
16	22	4×7	0.20	42	ESRG160E□□220MD07D
	47	5×7	0.20	73	ESRG160E□□470ME07D
	100	6.3×7	0.20	110	ESRG160E□□101MF07D
	220	8×9	0.20	290	ESRG160E□□221MH09D
	330	8×9	0.20	355	ESRG160E□□331MH09D
	470	10×9	0.20	410	ESRG160E□□471MJ09S
	1,000	12.5×13	0.20	715	ESRG160E□□102MK13S
	2,200	16×15	0.23	1,160	ESRG160E□□222ML15S
	3,300	18×15	0.26	1,460	ESRG160E□□332MM15S
	4,700	18×20	0.29	1,770	ESRG160E□□472MM20S
	6,800	18×25	0.35	2,170	ESRG160E□□682MM25S
25	33	5×7	0.16	66	ESRG250E□□330ME07D
	47	5×9	0.16	105	ESRG250E□□470ME09D
	47	6.3×7	0.16	80	ESRG250E□□470MF07D
	100	6.3×9	0.16	172	ESRG250E□□101MF09D
	330	10×9	0.16	380	ESRG250E□□331MJ09S
25	470	10×12.5	0.16	525	ESRG250E□□471MJC5S
	1,000	12.5×15	0.16	830	ESRG250E□□102MK15S
	2,200	18×15	0.19	1,360	ESRG250E□□222MM15S
	3,300	18×20	0.22	1,720	ESRG250E□□332MM20S
	4,700	18×25	0.25	2,070	ESRG250E□□472MM25S
35	10	4×7	0.14	32	ESRG350E□□100MD07D
	22	5×7	0.14	57	ESRG350E□□220ME07D
	33	5×9	0.14	94	ESRG350E□□330ME09D
	33	6.3×7	0.14	73	ESRG350E□□330MF07D
	47	8×7	0.14	101	ESRG350E□□470MH07D
	100	8×9	0.14	220	ESRG350E□□101MH09D
	220	10×9	0.14	335	ESRG350E□□221MJ09S
	330	10×12.5	0.14	475	ESRG350E□□331MJC5S
	470	12.5×13	0.14	585	ESRG350E□□471MK13S
	1,000	16×15	0.14	1,010	ESRG350E□□102ML15S
	2,200	18×20	0.17	1,560	ESRG350E□□222MM20S
50	1.0	4×7	0.12	10	ESRG500E□□1R0MD07D
	1.0	5×9	0.12	13	ESRG500E□□1R0ME09D
	2.2	4×7	0.12	15	ESRG500E□□2R2MD07D
	2.2	5×9	0.12	26	ESRG500E□□2R2ME09D
	3.3	4×7	0.12	19	ESRG500E□□3R3MD07D
	3.3	5×9	0.12	32	ESRG500E□□3R3ME09D
	4.7	4×7	0.12	24	ESRG500E□□4R7MD07D
	4.7	5×9	0.12	38	ESRG500E□□4R7ME09D
	10	5×7	0.12	42	ESRG500E□□100ME07D
	10	5×9	0.12	64	ESRG500E□□100ME09D
	22	5×9	0.12	86	ESRG500E□□220ME09D
	22	6.3×7	0.12	64	ESRG500E□□220MF07D
	33	6.3×9	0.12	113	ESRG500E□□330MF09D
	33	8×7	0.12	93	ESRG500E□□330MH07D
	47	6.3×9	0.12	135	ESRG500E□□470MF09D
	100	10×9	0.12	240	ESRG500E□□101MJ09S
	220	10×12.5	0.12	415	ESRG500E□□221MJC5S
	330	12.5×13	0.12	525	ESRG500E□□331MK13S
	470	16×15	0.12	745	ESRG500E□□471ML15S
	1,000	18×20	0.12	1,160	ESRG500E□□102MM20S

□□ : Enter the appropriate lead forming or taping code.

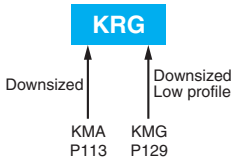
◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

KRG Series

- Low profile : φ4×7mm to φ18×25mm
- Endurance : 1,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

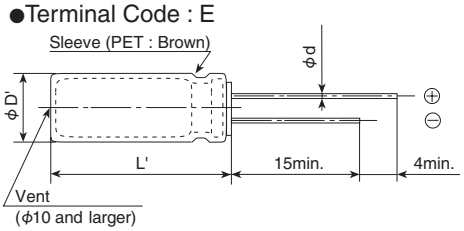


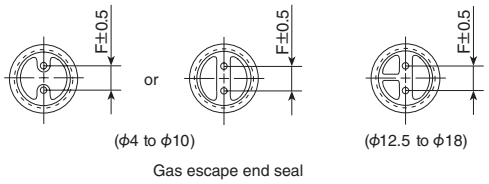
◆SPECIFICATIONS

Items	Characteristics						
Category Temperature Range	−55 to +105℃						
Rated Voltage Range	6.3 to 50Vdc						
Capacitance Tolerance	±20% (M)						(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)						(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V
	tanδ (Max.)	0.28	0.24	0.20	0.16	0.14	0.12
	When nominal capacitance exceeds 1,000μF, add 0.03 to the value above for each 1,000μF increase.						(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V
	Z(−25℃)/Z(+20℃)	5	4	3	2	2	2
	Z(−40℃)/Z(+20℃)	10	8	6	4	3	3 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 105℃.						
	Rated voltage	6.3 to 16Vdc			25 to 50Vdc		
	Capacitance change	≦±25% of the initial value			≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value			≦200% of the initial specified value		
	Leakage current	≦The initial specified value			≦The initial specified value		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Rated voltage	6.3 to 16Vdc			25 to 50Vdc		
	Capacitance change	≦±25% of the initial value			≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value			≦200% of the initial specified value		
	Leakage current	≦The initial specified value			≦The initial specified value		

◆DIMENSIONS [mm]

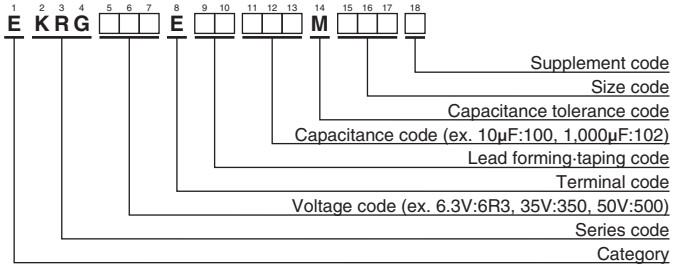
●Terminal Code : E





φD		4	5	6.3	8	10 & 12.5	16 & 18
φd	7L	0.45	0.45	0.45	–	—	—
	≧9L	–	0.5	0.5	0.6	0.6	0.8
F		1.5	2.0	2.5	3.5	5.0	7.5
φD'		φD+0.5max.					
L'		L+1.5max. (7L : L+1.0max.)					

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KRG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
6.3	47	5×7	0.28	50	EKRG6R3E□□470ME07D
	330	6.3×9	0.28	175	EKRG6R3E□□331MF09D
	1,000	10×9	0.28	365	EKRG6R3E□□102MJ09S
	4,700	16×15	0.37	1,010	EKRG6R3E□□472ML15S
	6,800	18×15	0.43	1,190	EKRG6R3E□□682MM15S
	10,000	18×20	0.55	1,440	EKRG6R3E□□103MM20S
10	22	4×7	0.24	35	EKRG100E□□220MD07D
	100	5×9	0.24	93	EKRG100E□□101ME09D
	100	6.3×7	0.24	80	EKRG100E□□101MF07D
	220	6.3×9	0.24	154	EKRG100E□□221MF09D
	470	8×9	0.24	272	EKRG100E□□471MH09D
	1,000	10×12.5	0.24	445	EKRG100E□□102MJC5S
	2,200	12.5×15	0.27	690	EKRG100E□□222MK15S
	3,300	16×15	0.30	940	EKRG100E□□332ML15S
	4,700	18×15	0.33	1,120	EKRG100E□□472MM15S
	6,800	18×20	0.39	1,330	EKRG100E□□682MM20S
	10,000	18×25	0.51	1,700	EKRG100E□□103MM25S
16	33	5×7	0.20	53	EKRG160E□□330ME07D
	47	6.3×7	0.20	68	EKRG160E□□470MF07D
	100	6.3×7	0.20	97	EKRG160E□□101MF07D
	220	8×9	0.20	205	EKRG160E□□221MH09D
	330	8×9	0.20	251	EKRG160E□□331MH09D
	470	10×9	0.20	290	EKRG160E□□471MJ09S
	1,000	12.5×13	0.20	515	EKRG160E□□102MK13S
	2,200	16×15	0.23	830	EKRG160E□□222ML15S
	3,300	18×15	0.26	1,050	EKRG160E□□332MM15S
	4,700	18×20	0.29	1,260	EKRG160E□□472MM20S
	6,800	18×25	0.35	1,560	EKRG160E□□682MM25S
25	10	4×7	0.16	30	EKRG250E□□100MD07D
	22	5×7	0.16	46	EKRG250E□□220ME07D
	33	6.3×7	0.16	63	EKRG250E□□330MF07D
	47	5×9	0.16	75	EKRG250E□□470ME09D
	47	6.3×7	0.16	71	EKRG250E□□470MF07D
	100	6.3×9	0.16	121	EKRG250E□□101MF09D
	330	10×9	0.16	270	EKRG250E□□331MJ09S
25	470	10×12.5	0.16	370	EKRG250E□□471MJC5S
	1,000	12.5×15	0.16	590	EKRG250E□□102MK15S
	2,200	18×15	0.19	970	EKRG250E□□222MM15S
	3,300	18×20	0.22	1,220	EKRG250E□□332MM20S
	4,700	18×25	0.25	1,470	EKRG250E□□472MM25S
35	10	5×7	0.14	36	EKRG350E□□100ME07D
	22	6.3×7	0.14	57	EKRG350E□□220MF07D
	33	5×9	0.14	67	EKRG350E□□330ME09D
	33	6.3×7	0.14	64	EKRG350E□□330MF07D
	100	8×9	0.14	155	EKRG350E□□101MH09D
	220	10×9	0.14	235	EKRG350E□□221MJ09S
	330	10×12.5	0.14	340	EKRG350E□□331MJC5S
	470	12.5×13	0.14	415	EKRG350E□□471MK13S
	1,000	16×15	0.14	720	EKRG350E□□102ML15S
	2,200	18×20	0.17	1,110	EKRG350E□□222MM20S
50	1.0	4×7	0.12	10	EKRG500E□□1R0MD07D
	1.0	5×9	0.12	12	EKRG500E□□1R0ME09D
	2.2	4×7	0.12	15	EKRG500E□□2R2MD07D
	2.2	5×9	0.12	18	EKRG500E□□2R2ME09D
	3.3	4×7	0.12	18	EKRG500E□□3R3MD07D
	3.3	5×9	0.12	22	EKRG500E□□3R3ME09D
	4.7	4×7	0.12	25	EKRG500E□□4R7MD07D
	4.7	5×9	0.12	27	EKRG500E□□4R7ME09D
	10	5×9	0.12	46	EKRG500E□□100ME09D
	10	6.3×7	0.12	44	EKRG500E□□100MF07D
	22	5×9	0.12	61	EKRG500E□□220ME09D
	22	6.3×7	0.12	57	EKRG500E□□220MF07D
	33	6.3×9	0.12	80	EKRG500E□□330MF09D
	47	6.3×9	0.12	95	EKRG500E□□470MF09D
	100	10×9	0.12	170	EKRG500E□□101MJ09S
	220	10×12.5	0.12	290	EKRG500E□□221MJC5S
	330	12.5×13	0.12	370	EKRG500E□□331MK13S
	470	16×15	0.12	535	EKRG500E□□471ML15S
	1,000	18×20	0.12	830	EKRG500E□□102MM20S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

SMQ Series

- Downsized from current standard SMG series
- Endurance : 2,000 hours at 85℃
- Non solvent resistant type
- **RoHS Compliant**

SMQ
↑ Downsized
SMG P125

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−40 to +85℃(6.3 to 400Vdc) −25 to +85℃(450Vdc)
Rated Voltage Range	6.3 to 450Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	6.3 to 100Vdc: ≦φ18: I=0.03CV or 4μA, whichever is greater. (at 20℃ after 1 minute); ≧φ20: I=0.03CV (at 20℃ after 3 minutes). 160 to 450Vdc: CV≦1,000: I=0.1CV+40 max.; CV>1,000: I=0.04CV+100 max. After 1minute (at 20℃). Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)

Dissipation Factor (tanδ)

Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	315 to 400V	450V
tanδ (Max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.09	0.08	0.20	0.24	0.24

When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)

Low Temperature Characteristics (Max. Impedance Ratio)

Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 200V	250V	350V	400V	450V
Z(−25℃)/Z(+20℃)	≦φ8	5	4	3	2	2	2	2	2	3	3	4	4	6
	≧φ10	5	4	3	2	2	2	2	2	3	3	4	4	6
Z(−40℃)/Z(+20℃)	≦φ8	12	10	8	5	4	3	3	3	8	10	8	8	—
	≧φ10	12	10	8	5	4	3	3	3	4	4	6	6	—

(at 120Hz)

Endurance

The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 85℃.

Capacitance change	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value
Leakage current	≦The initial specified value

Shelf Life

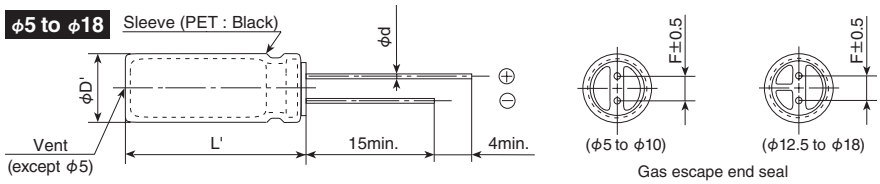
The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.

Rated voltage	6.3 to 100Vdc	160 to 450Vdc
Capacitance change	≦±20% of the initial value	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value	≦200% of the initial specified value
Leakage current	≦The initial specified value	≦500% of the initial specified value

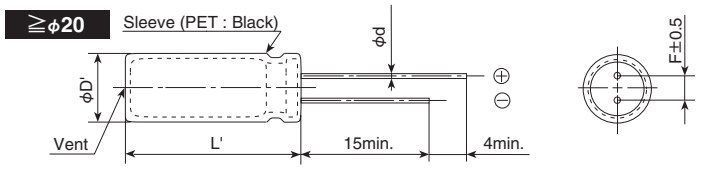
◆DIMENSIONS [mm]

● Terminal Code : E

φ5 to φ18 Sleeve (PET : Black)



≧φ20 Sleeve (PET : Black)



φD	5	6.3	8	10	12.5	16	18	20	22
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
φD'	φD+0.5max.							φD+0.5max.	
L'	L+1.5max.							L+2.0max.	

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
E	S	M	Q				E						M				

- Supplement code
- Size code
- Capacitance tolerance code
- Capacitance code (ex. 1.0μF:1R0,10μF:100,100μF:101)
- Lead forming·taping code
- Terminal code
- Voltage code (ex. 6.3V:6R3,50V:500,100V:101)
- Series code
- Category

Please refer to "Product code guide (radial lead type)"

SMQ Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
6.3	1,000	8×11.5	0.28	540	ESMQ6R3E□□102MHB5D
	2,200	10×16	0.30	890	ESMQ6R3E□□222MJ16S
	3,300	10×20	0.32	1,190	ESMQ6R3E□□332MJ20S
	4,700	12.5×20	0.34	1,550	ESMQ6R3E□□472MK20S
	6,800	12.5×25	0.38	1,920	ESMQ6R3E□□682MK25S
	10,000	16×25	0.46	2,350	ESMQ6R3E□□103ML25S
	15,000	16×31.5	0.56	2,550	ESMQ6R3E□□153MLN3S
	22,000	18×35.5	0.70	3,200	ESMQ6R3E□□223MMP1S
	33,000	20×40	0.92	3,500	ESMQ6R3E□□333MN40S
	47,000	20×50	1.20	3,900	ESMQ6R3E□□473MP50S
10	220	5×11	0.24	240	ESMQ100E□□221ME11D
	330	6.3×11	0.24	290	ESMQ100E□□331MF11D
	470	6.3×11	0.24	350	ESMQ100E□□471MF11D
	1,000	10×12.5	0.24	650	ESMQ100E□□102MJC5S
	2,200	10×16	0.26	990	ESMQ100E□□222MJ16S
	3,300	12.5×20	0.28	1,450	ESMQ100E□□332MK20S
	4,700	12.5×25	0.30	1,800	ESMQ100E□□472MK25S
	6,800	16×25	0.34	2,250	ESMQ100E□□682ML25S
	10,000	16×31.5	0.42	2,550	ESMQ100E□□103MLN3S
	15,000	16×35.5	0.52	2,880	ESMQ100E□□153MLP1S
	22,000	18×40	0.66	3,400	ESMQ100E□□223MM40S
	33,000	22×50	0.88	4,500	ESMQ100E□□333MP50S
16	220	6.3×11	0.20	260	ESMQ160E□□221MF11D
	330	6.3×11	0.20	320	ESMQ160E□□331MF11D
	470	8×11.5	0.20	440	ESMQ160E□□471MHB5D
	1,000	10×12.5	0.20	700	ESMQ160E□□102MJC5S
	2,200	10×20	0.22	1,000	ESMQ160E□□222MJ20S
	3,300	12.5×25	0.24	1,700	ESMQ160E□□332MK25S
	4,700	16×25	0.26	2,100	ESMQ160E□□472ML25S
	6,800	16×25	0.30	2,250	ESMQ160E□□682ML25S
	10,000	16×35.5	0.38	2,710	ESMQ160E□□103MLP1S
	15,000	18×40	0.48	3,100	ESMQ160E□□153MM40S
	22,000	22×40	0.62	3,800	ESMQ160E□□223MP40S
25	100	5×11	0.16	180	ESMQ250E□□101ME11D
	220	6.3×11	0.16	280	ESMQ250E□□221MF11D
	330	8×11.5	0.16	440	ESMQ250E□□331MHB5D
	470	10×12.5	0.16	550	ESMQ250E□□471MJC5S
	1,000	10×16	0.16	860	ESMQ250E□□102MJ16S
	2,200	12.5×25	0.18	1,550	ESMQ250E□□222MK25S
	3,300	16×25	0.20	1,980	ESMQ250E□□332ML25S
	4,700	16×25	0.22	2,200	ESMQ250E□□472ML25S
	6,800	16×35.5	0.26	2,600	ESMQ250E□□682MLP1S
	10,000	18×40	0.34	2,800	ESMQ250E□□103MM40S
	15,000	22×50	0.44	3,800	ESMQ250E□□153MP50S
35	47	5×11	0.14	130	ESMQ350E□□470ME11D
	68	6.3×11	0.14	160	ESMQ350E□□680MF11D
	100	6.3×11	0.14	210	ESMQ350E□□101MF11D
	220	8×11.5	0.14	385	ESMQ350E□□221MHB5D
	330	10×12.5	0.14	490	ESMQ350E□□331MJC5S
	470	10×16	0.14	650	ESMQ350E□□471MJ16S
	1,000	12.5×20	0.14	1,150	ESMQ350E□□102MK20S
	2,200	16×25	0.16	1,800	ESMQ350E□□222ML25S
	3,300	16×31.5	0.18	2,100	ESMQ350E□□332MLN3S
	4,700	16×35.5	0.20	2,500	ESMQ350E□□472MLP1S
	6,800	18×40	0.24	2,800	ESMQ350E□□682MM40S
	10,000	22×50	0.32	3,700	ESMQ350E□□103MP50S
50	1.0	5×11	0.12	17	ESMQ500E□□1R0ME11D
	2.2	5×11	0.12	28	ESMQ500E□□2R2ME11D
	3.3	5×11	0.12	35	ESMQ500E□□3R3ME11D
	4.7	5×11	0.12	41	ESMQ500E□□4R7ME11D
	10	5×11	0.12	60	ESMQ500E□□100ME11D
	22	5×11	0.12	95	ESMQ500E□□220ME11D
	33	5×11	0.12	125	ESMQ500E□□330ME11D
	47	6.3×11	0.12	155	ESMQ500E□□470MF11D
	68	6.3×11	0.12	210	ESMQ500E□□680MF11D
	100	8×11.5	0.12	260	ESMQ500E□□101MHB5D
	220	10×12.5	0.12	430	ESMQ500E□□221MJC5S
50	330	10×16	0.12	590	ESMQ500E□□331MJ16S
	470	10×20	0.12	760	ESMQ500E□□471MJ20S
	1,000	12.5×25	0.12	1,350	ESMQ500E□□102MK25S
	2,200	16×31.5	0.14	1,980	ESMQ500E□□222MLN3S
	3,300	18×35.5	0.16	2,500	ESMQ500E□□332MMP1S
	4,700	20×40	0.18	2,900	ESMQ500E□□472MN40S
	6,800	22×50	0.22	3,500	ESMQ500E□□682MP50S
63	22	5×11	0.09	100	ESMQ630E□□220ME11D
	33	6.3×11	0.09	140	ESMQ630E□□330MF11D
	47	6.3×11	0.09	170	ESMQ630E□□470MF11D
	68	8×11.5	0.09	220	ESMQ630E□□680MHB5D
	100	8×11.5	0.09	280	ESMQ630E□□101MHB5D
	220	10×16	0.09	490	ESMQ630E□□221MJ16S
	330	10×20	0.09	710	ESMQ630E□□331MJ20S
	470	12.5×20	0.09	900	ESMQ630E□□471MK20S
	1,000	16×25	0.09	1,300	ESMQ630E□□102ML25S
	2,200	18×35.5	0.11	2,300	ESMQ630E□□222MMP1S
	3,300	20×40	0.13	2,700	ESMQ630E□□332MN40S
	4,700	22×50	0.15	3,400	ESMQ630E□□472MP50S
100	1.0	5×11	0.08	21	ESMQ101E□□1R0ME11D
	2.2	5×11	0.08	30	ESMQ101E□□2R2ME11D
	3.3	5×11	0.08	40	ESMQ101E□□3R3ME11D
	4.7	5×11	0.08	45	ESMQ101E□□4R7ME11D
	10	5×11	0.08	70	ESMQ101E□□100ME11D
	22	6.3×11	0.08	130	ESMQ101E□□220MF11D
	33	8×11.5	0.08	180	ESMQ101E□□330MHB5D
	47	8×11.5	0.08	200	ESMQ101E□□470MHB5D
	68	10×12.5	0.08	270	ESMQ101E□□680MJC5S
	100	10×16	0.08	340	ESMQ101E□□101MJ16S
	220	12.5×20	0.08	550	ESMQ101E□□221MK20S
	330	12.5×25	0.08	760	ESMQ101E□□331MK25S
	470	16×25	0.08	1,000	ESMQ101E□□471ML25S
	1,000	18×35.5	0.08	1,350	ESMQ101E□□102MMP1S
	2,200	22×50	0.10	2,400	ESMQ101E□□222MP50S
160	10	8×11.5	0.20	80	ESMQ161E□□100MHB5D
	22	10×12.5	0.20	130	ESMQ161E□□220MJC5S
	33	10×16	0.20	180	ESMQ161E□□330MJ16S
	47	10×20	0.20	210	ESMQ161E□□470MJ20S
	68	12.5×20	0.20	350	ESMQ161E□□680MK20S
	100	12.5×25	0.20	430	ESMQ161E□□101MK25S
	220	16×31.5	0.20	760	ESMQ161E□□221MLN3S
	330	18×35.5	0.20	995	ESMQ161E□□331MMP1S
	470	18×40	0.20	1,200	ESMQ161E□□471MM40S
200	1.0	6.3×11	0.20	22	ESMQ201E□□1R0MF11D
	2.2	6.3×11	0.20	33	ESMQ201E□□2R2MF11D
	3.3	6.3×11	0.20	40	ESMQ201E□□3R3MF11D
	4.7	6.3×11	0.20	50	ESMQ201E□□4R7MF11D
	10	8×11.5	0.20	80	ESMQ201E□□100MHB5D
	22	10×16	0.20	150	ESMQ201E□□220MJ16S
	33	10×20	0.20	205	ESMQ201E□□330MJ20S
	47	12.5×20	0.20	270	ESMQ201E□□470MK20S
	68	12.5×25	0.20	350	ESMQ201E□□680MK25S
	100	16×25	0.20	475	ESMQ201E□□101ML25S
	220	16×35.5	0.20	700	ESMQ201E□□221MLP1S
	330	18×40	0.20	950	ESMQ201E□□331MM40S
250	3.3	6.3×11	0.20	40	ESMQ251E□□3R3MF11D
	4.7	6.3×11	0.20	50	ESMQ251E□□4R7MF11D
	10	10×12.5	0.20	100	ESMQ251E□□100MJC5S
	22	10×20	0.20	170	ESMQ251E□□220MJ20S
	33	10×20	0.20	200	ESMQ251E□□330MJ20S
	47	12.5×20	0.20	270	ESMQ251E□□470MK20S
	68	16×25	0.20	380	ESMQ251E□□680ML25S
	100	16×25	0.20	440	ESMQ251E□□101ML25S
	220	18×35.5	0.20	680	ESMQ251E□□221MMP1S
350	2.2	6.3×11	0.24	30	ESMQ351E□□2R2MF11D
	3.3	8×11.5	0.24	46	ESMQ351E□□3R3MHB5D
	4.7	8×11.5	0.24	55	ESMQ351E□□4R7MHB5D

□□ : Enter the appropriate lead forming or taping code.

SMQ Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
350	10	10×12.5	0.24	90	ESMQ351E□□100MJC5S
	22	12.5×20	0.24	185	ESMQ351E□□220MK20S
	33	12.5×25	0.24	240	ESMQ351E□□330MK25S
	47	16×25	0.24	325	ESMQ351E□□470ML25S
	68	16×25	0.24	400	ESMQ351E□□680ML25S
	100	18×31.5	0.24	530	ESMQ351E□□101MMN3S
400	1.0	6.3×11	0.24	22	ESMQ401E□□1R0MF11D
	2.2	8×11.5	0.24	38	ESMQ401E□□2R2MHB5D
	3.3	8×11.5	0.24	48	ESMQ401E□□3R3MHB5D
	4.7	10×12.5	0.24	60	ESMQ401E□□4R7MJC5S
	10	10×16	0.24	90	ESMQ401E□□100MJ16S
	22	12.5×25	0.24	205	ESMQ401E□□220MK25S
	33	16×25	0.24	275	ESMQ401E□□330ML25S
	47	16×25	0.24	280	ESMQ401E□□470ML25S
	68	16×31.5	0.24	340	ESMQ401E□□680MLN3S
	100	18×35.5	0.24	440	ESMQ401E□□101MMP1S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
450	2.2	8×11.5	0.24	28	ESMQ451E□□2R2MHB5D
	3.3	10×12.5	0.24	40	ESMQ451E□□3R3MJC5S
	4.7	10×12.5	0.24	46	ESMQ451E□□4R7MJC5S
	10	10×20	0.24	80	ESMQ451E□□100MJ20S
	22	12.5×25	0.24	140	ESMQ451E□□220MK25S
	33	16×25	0.24	180	ESMQ451E□□330ML25S
	47	16×31.5	0.24	220	ESMQ451E□□470MLN3S
	68	18×35.5	0.24	260	ESMQ451E□□680MMP1S
	100	18×40	0.24	280	ESMQ451E□□101MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 68	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

(φ20 to φ22)

Rated Voltage (Vdc) \ Frequency (Hz)	50	120	300	1k	10k	100k
6.3 to 50	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100	0.92	1.00	1.07	1.13	1.19	1.20

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KMQ Series

- Downsized from current standard KMG series
- Solvent resistant type except 160 to 450Vdc (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

KMQ
↑ Downsized
KMG P129

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−55 to +105℃(6.3 to 100Vdc) −40 to +105℃(160 to 400Vdc) -25 to +105℃(450Vdc)
Rated Voltage Range	6.3 to 450Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	6.3 to 100Vdc: ≦φ18: I=0.03CV or 4μA, whichever is greater. (at 20℃ after 1 minute); ≧φ20: I=0.03CV max. (at 20℃ after 3 minutes) 160 to 450Vdc: CV≦1,000: I=0.1CV+40 max.; CV>1,000: I=0.04CV+100 max. (at 20℃) (CV: After 1minute) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)

Dissipation Factor (tanδ)

Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V
tanδ (Max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.24	0.24

When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)

Low Temperature Characteristics (Max. Impedance Ratio)

Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63 to 100V	160 to 200V	250V	350V	400V	450V
Z(-25℃)/Z(+20℃)	≦φ8	5	4	3	2	2	2	2	3	3	4	4	6
	≧φ10	5	4	3	2	2	2	2	3	3	4	4	6
Z(-40℃)/Z(+20℃)	≦φ8	10	8	6	4	3	3	3	8	10	8	8	—
	≧φ10	10	8	6	4	3	3	3	4	4	6	6	—

(at 120Hz)

Endurance

The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 1,000 hours (2,000 hours for φ10 and more at 105℃).

Capacitance change	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value
Leakage current	≦The initial specified value

Shelf Life

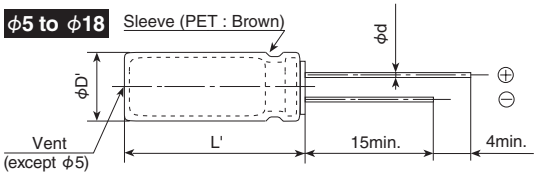
The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.

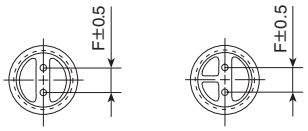
Rated voltage	6.3 to 100Vdc	160 to 450Vdc
Capacitance change	≦±20% of the initial value	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value	≦200% of the initial specified value
Leakage current	≦The initial specified value	≦500% of the initial specified value

◆DIMENSIONS [mm]

● Terminal Code : E

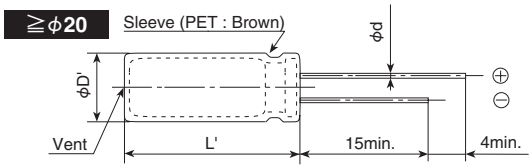
φ5 to φ18 Sleeve (PET : Brown)

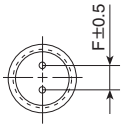




Gas escape end seal

≧φ20 Sleeve (PET : Brown)





φD	5	6.3	8	10	12.5	16	18	20	22
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
φD'	φD+0.5max.							φD+0.5max.	
L'	L+1.5max.							L+2.0max.	

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
E	K	M	Q				E						M				

- Supplement code
- Size code
- Capacitance tolerance code
- Capacitance code (ex. 1.0μF:1R0,10μF:100,100μF:101)
- Lead forming·taping code
- Terminal code
- Voltage code (ex. 6.3V:6R3,35V:350,100V:101)
- Series code
- Category

Please refer to "Product code guide (radial lead type)"

KMQ Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
6.3	1,000	8×11.5	0.28	390	EKMQ6R3E□□102MHB5D
	2,200	10×16	0.30	635	EKMQ6R3E□□222MJ16S
	3,300	10×20	0.32	840	EKMQ6R3E□□332MJ20S
	4,700	12.5×20	0.34	1,090	EKMQ6R3E□□472MK20S
	6,800	12.5×25	0.38	1,350	EKMQ6R3E□□682MK25S
	10,000	16×25	0.46	1,650	EKMQ6R3E□□103ML25S
	15,000	16×31.5	0.56	1,820	EKMQ6R3E□□153MLN3S
	22,000	18×35.5	0.70	2,280	EKMQ6R3E□□223MMP1S
	33,000	20×40	0.92	2,500	EKMQ6R3E□□333MN40S
	47,000	22×50	1.20	2,780	EKMQ6R3E□□473MP50S
10	220	5×11	0.24	155	EKMQ100E□□221ME11D
	330	6.3×11	0.24	210	EKMQ100E□□331MF11D
	470	6.3×11	0.24	250	EKMQ100E□□471MF11D
	1,000	10×12.5	0.24	460	EKMQ100E□□102MJC5S
	2,200	10×16	0.26	705	EKMQ100E□□222MJ16S
	3,300	12.5×20	0.28	1,000	EKMQ100E□□332MK20S
	4,700	12.5×25	0.30	1,260	EKMQ100E□□472MK25S
	6,800	16×25	0.34	1,570	EKMQ100E□□682ML25S
	10,000	16×31.5	0.42	1,820	EKMQ100E□□103MLN3S
	15,000	16×35.5	0.52	2,050	EKMQ100E□□153MLP1S
	22,000	18×40	0.66	2,420	EKMQ100E□□223MM40S
	33,000	22×50	0.88	3,210	EKMQ100E□□333MP50S
16	220	6.3×11	0.20	190	EKMQ160E□□221MF11D
	330	6.3×11	0.20	225	EKMQ160E□□331MF11D
	470	8×11.5	0.20	315	EKMQ160E□□471MHB5D
	1,000	10×12.5	0.20	500	EKMQ160E□□102MJC5S
	2,200	10×20	0.22	710	EKMQ160E□□222MJ20S
	3,300	12.5×25	0.24	1,170	EKMQ160E□□332MK25S
	4,700	16×25	0.26	1,500	EKMQ160E□□472ML25S
	6,800	16×25	0.30	1,600	EKMQ160E□□682ML25S
	10,000	16×35.5	0.38	1,930	EKMQ160E□□103MLP1S
	15,000	18×40	0.48	2,210	EKMQ160E□□153MM40S
	22,000	22×40	0.62	2,710	EKMQ160E□□223MP40S
25	100	5×11	0.16	125	EKMQ250E□□101ME11D
	220	6.3×11	0.16	200	EKMQ250E□□221MF11D
	330	8×11.5	0.16	310	EKMQ250E□□331MHB5D
	470	10×12.5	0.16	380	EKMQ250E□□471MJC5S
	1,000	10×16	0.16	610	EKMQ250E□□102MJ16S
	2,200	12.5×25	0.18	1,090	EKMQ250E□□222MK25S
	3,300	16×25	0.20	1,400	EKMQ250E□□332ML25S
	4,700	16×25	0.22	1,570	EKMQ250E□□472ML25S
	6,800	16×35.5	0.26	1,850	EKMQ250E□□682MLP1S
	10,000	18×40	0.34	2,000	EKMQ250E□□103MM40S
	15,000	22×50	0.44	2,750	EKMQ250E□□153MP50S
35	47	5×11	0.14	93	EKMQ350E□□470ME11D
	68	6.3×11	0.14	110	EKMQ350E□□680MF11D
	100	6.3×11	0.14	150	EKMQ350E□□101MF11D
	220	8×11.5	0.14	270	EKMQ350E□□221MHB5D
	330	10×12.5	0.14	350	EKMQ350E□□331MJC5S
	470	10×16	0.14	460	EKMQ350E□□471MJ16S
	1,000	12.5×20	0.14	810	EKMQ350E□□102MK20S
	2,200	16×25	0.16	1,260	EKMQ350E□□222ML25S
	3,300	16×31.5	0.18	1,500	EKMQ350E□□332MLN3S
	4,700	16×35.5	0.20	1,780	EKMQ350E□□472MLP1S
	6,800	18×40	0.24	2,000	EKMQ350E□□682MM40S
	10,000	22×50	0.32	2,650	EKMQ350E□□103MP50S
50	1.0	5×11	0.12	13	EKMQ500E□□1R0ME11D
	2.2	5×11	0.12	20	EKMQ500E□□2R2ME11D
	3.3	5×11	0.12	25	EKMQ500E□□3R3ME11D
	4.7	5×11	0.12	30	EKMQ500E□□4R7ME11D
	10	5×11	0.12	46	EKMQ500E□□100ME11D
	22	5×11	0.12	68	EKMQ500E□□220ME11D
	33	5×11	0.12	90	EKMQ500E□□330ME11D
	47	6.3×11	0.12	115	EKMQ500E□□470MF11D
	68	6.3×11	0.12	150	EKMQ500E□□680MF11D
	100	8×11.5	0.12	190	EKMQ500E□□101MHB5D
	220	10×12.5	0.12	300	EKMQ500E□□221MJC5S
50	330	10×16	0.12	410	EKMQ500E□□331MJ16S
	470	10×20	0.12	540	EKMQ500E□□471MJ20S
	1,000	12.5×25	0.12	950	EKMQ500E□□102MK25S
	2,200	16×31.5	0.14	1,410	EKMQ500E□□222MLN3S
	3,300	18×35.5	0.16	1,770	EKMQ500E□□332MMP1S
	4,700	20×40	0.18	2,100	EKMQ500E□□472MN40S
	6,800	22×50	0.22	2,500	EKMQ500E□□682MP50S
63	22	5×11	0.10	71	EKMQ630E□□220ME11D
	33	6.3×11	0.10	100	EKMQ630E□□330MF11D
	47	6.3×11	0.10	120	EKMQ630E□□470MF11D
	68	8×11.5	0.10	155	EKMQ630E□□680MHB5D
	100	8×11.5	0.10	200	EKMQ630E□□101MHB5D
	220	10×16	0.10	335	EKMQ630E□□221MJ16S
	330	10×20	0.10	510	EKMQ630E□□331MJ20S
	470	12.5×20	0.10	640	EKMQ630E□□471MK20S
	1,000	16×25	0.10	930	EKMQ630E□□102ML25S
	2,200	18×35.5	0.12	1,650	EKMQ630E□□222MMP1S
	3,300	20×40	0.14	1,950	EKMQ630E□□332MN40S
	4,700	22×50	0.16	2,450	EKMQ630E□□472MP50S
100	1.0	5×11	0.08	15	EKMQ101E□□1R0ME11D
	2.2	5×11	0.08	21	EKMQ101E□□2R2ME11D
	3.3	5×11	0.08	29	EKMQ101E□□3R3ME11D
	4.7	5×11	0.08	32	EKMQ101E□□4R7ME11D
	10	5×11	0.08	50	EKMQ101E□□100ME11D
	22	6.3×11	0.08	93	EKMQ101E□□220MF11D
	33	8×11.5	0.08	130	EKMQ101E□□330MHB5D
	47	8×11.5	0.08	140	EKMQ101E□□470MHB5D
	68	10×12.5	0.08	190	EKMQ101E□□680MJC5S
	100	10×16	0.08	240	EKMQ101E□□101MJ16S
	220	12.5×20	0.08	390	EKMQ101E□□221MK20S
	330	12.5×25	0.08	540	EKMQ101E□□331MK25S
	470	16×25	0.08	715	EKMQ101E□□471ML25S
	1,000	18×35.5	0.08	960	EKMQ101E□□102MMP1S
	2,200	22×50	0.10	1,750	EKMQ101E□□222MP50S
160	10	8×11.5	0.20	41	EKMQ161E□□100MHB5D
	22	10×12.5	0.20	92	EKMQ161E□□220MJC5S
	33	10×16	0.20	125	EKMQ161E□□330MJ16S
	47	10×20	0.20	150	EKMQ161E□□470MJ20S
	68	12.5×20	0.20	250	EKMQ161E□□680MK20S
	100	12.5×25	0.20	310	EKMQ161E□□101MK25S
	220	16×31.5	0.20	540	EKMQ161E□□221MLN3S
	330	18×35.5	0.20	705	EKMQ161E□□331MMP1S
	470	18×40	0.20	855	EKMQ161E□□471MM40S
200	1.0	6.3×11	0.20	16	EKMQ201E□□1R0MF11D
	2.2	6.3×11	0.20	25	EKMQ201E□□2R2MF11D
	3.3	6.3×11	0.20	30	EKMQ201E□□3R3MF11D
	4.7	6.3×11	0.20	35	EKMQ201E□□4R7MF11D
	10	8×11.5	0.20	57	EKMQ201E□□100MHB5D
	22	10×16	0.20	105	EKMQ201E□□220MJ16S
	33	10×20	0.20	140	EKMQ201E□□330MJ20S
	47	12.5×20	0.20	195	EKMQ201E□□470MK20S
	68	12.5×25	0.20	250	EKMQ201E□□680MK25S
	100	16×25	0.20	335	EKMQ201E□□101ML25S
	220	16×35.5	0.20	500	EKMQ201E□□221MLP1S
	330	18×40	0.20	675	EKMQ201E□□331MM40S
250	3.3	6.3×11	0.20	28	EKMQ251E□□3R3MF11D
	4.7	6.3×11	0.20	35	EKMQ251E□□4R7MF11D
	10	10×12.5	0.20	71	EKMQ251E□□100MJC5S
	22	10×20	0.20	105	EKMQ251E□□220MJ20S
	33	10×20	0.20	140	EKMQ251E□□330MJ20S
	47	12.5×20	0.20	190	EKMQ251E□□470MK20S
	68	16×25	0.20	270	EKMQ251E□□680ML25S
	100	16×25	0.20	310	EKMQ251E□□101ML25S
	220	18×35.5	0.20	485	EKMQ251E□□221MMP1S
350	2.2	6.3×11	0.24	21	EKMQ351E□□2R2MF11D
	3.3	8×11.5	0.24	30	EKMQ351E□□3R3MHB5D
	4.7	8×11.5	0.24	39	EKMQ351E□□4R7MHB5D

□□ : Enter the appropriate lead forming or taping code.

KMQ Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mArms/105℃,120Hz)	Part No.
350	10	10×12.5	0.24	64	EKMQ351E□□100MJC5S
	22	12.5×20	0.24	130	EKMQ351E□□220MK20S
	33	12.5×25	0.24	170	EKMQ351E□□330MK25S
	47	16×25	0.24	230	EKMQ351E□□470ML25S
	68	16×25	0.24	285	EKMQ351E□□680ML25S
	100	18×31.5	0.24	375	EKMQ351E□□101MMN3S
400	1.0	6.3×11	0.24	15	EKMQ401E□□1R0MF11D
	2.2	8×11.5	0.24	27	EKMQ401E□□2R2MHB5D
	3.3	8×11.5	0.24	34	EKMQ401E□□3R3MHB5D
	4.7	10×12.5	0.24	42	EKMQ401E□□4R7MJC5S
	10	10×16	0.24	64	EKMQ401E□□100MJ16S
	22	12.5×25	0.24	145	EKMQ401E□□220MK25S
	33	16×25	0.24	195	EKMQ401E□□330ML25S
	47	16×25	0.24	200	EKMQ401E□□470ML25S
	68	16×31.5	0.24	240	EKMQ401E□□680MLN3S
	100	18×35.5	0.24	310	EKMQ401E□□101MMP1S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mArms/105℃,120Hz)	Part No.
450	2.2	8×11.5	0.24	20	EKMQ451E□□2R2MHB5D
	3.3	10×12.5	0.24	28	EKMQ451E□□3R3MJC5S
	4.7	10×12.5	0.24	32	EKMQ451E□□4R7MJC5S
	10	10×20	0.24	56	EKMQ451E□□100MJ20S
	22	12.5×25	0.24	100	EKMQ451E□□220MK25S
	33	16×25	0.24	125	EKMQ451E□□330ML25S
	47	16×31.5	0.24	155	EKMQ451E□□470MLN3S
	68	18×35.5	0.24	185	EKMQ451E□□680MMP1S
	100	18×40	0.24	200	EKMQ451E□□101MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 68	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

(φ20 to φ22)

Rated Voltage (Vdc) \ Frequency (Hz)	50	120	300	1k	10k	100k
6.3 to 50	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100	0.92	1.00	1.07	1.13	1.19	1.20

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

SMG Series

- Endurance : 2,000 hours at 85℃
- Solvent resistant type except 315 to 450Vdc (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

SMQ P119
Downsized
SMG

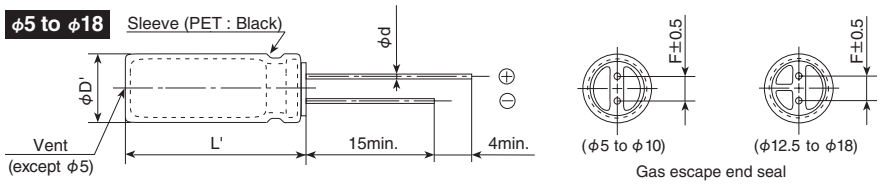
◆SPECIFICATIONS

Items	Characteristics												
Category Temperature Range	−40 to +85℃(6.3 to 400Vdc) −25 to +85℃(450Vdc)												
Rated Voltage Range	6.3 to 450Vdc												
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)												
Leakage Current		6.3 to 100Vdc							160 to 450Vdc				
	≦φ18	I=0.03CV or 4μA, whichever is greater. (at 20℃ after 1 minute)							CV \ Time: CV≦1,000 After 1minute I=0.1CV+40 max. / CV>1,000 I=0.04CV+100 max.		After 5minute I=0.03CV+15 max. / I=0.02CV+25 max. (at 20℃)		
	≧φ20	I=0.03CV (at 20℃ after 3 minutes)											
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)												
Dissipation Factor (tanδ)	Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	315 to 400V	450V
	tanδ (Max.)	≦φ18	0.34	0.24	0.20	0.16	0.14	0.12	0.09	0.08	0.20	0.24	0.24
		≧φ20	0.28	0.24	0.20	0.16	0.14	0.12	0.09	0.08	0.15	0.15	0.20
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)												
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	315 to 400V	450V
	Z(−25℃)/Z(+20℃)	≦φ18	5	4	3	2	2	2	2	2	3	6	6
		≧φ20	5	4	3	2	2	2	2	2	4	6	6
	Z(−40℃)/Z(+20℃)	≦φ18	12	10	8	5	4	3	3	3	4	6	— (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 85℃.												
	Capacitance change	≦±20% of the initial value											
	D.F. (tanδ)	≦200% of the initial specified value											
	Leakage current	≦The initial specified value											
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.												
	Rated voltage	6.3 to 100Vdc	160 to 450Vdc										
	Capacitance change	≦±20% of the initial value	≦±20% of the initial value										
	D.F. (tanδ)	≦200% of the initial specified value	≦200% of the initial specified value										
	Leakage current	≦The initial specified value	≦500% of the initial specified value										

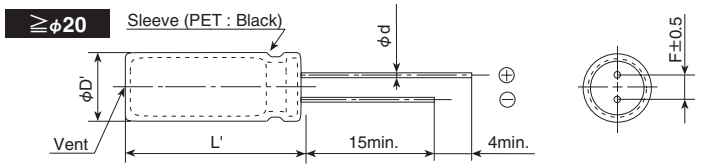
◆DIMENSIONS [mm]

● Terminal Code : E

φ5 to φ18

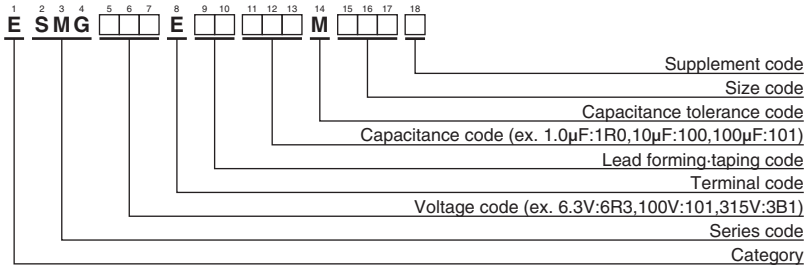


≧φ20



φD	5	6.3	8	10	12.5	16	18	20	22
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
φD'	φD+0.5max.							φD+0.5max.	
L'	L+1.5max.							L+2.0max.	

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

SMG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
6.3	220	5×11	0.34	200	ESMG6R3E□□221ME11D
	330	6.3×11	0.34	270	ESMG6R3E□□331MF11D
	470	6.3×11	0.34	320	ESMG6R3E□□471MF11D
	1,000	8×11.5	0.34	540	ESMG6R3E□□102MHB5D
	2,200	10×20	0.36	1,000	ESMG6R3E□□222MJ20S
	3,300	10×20	0.38	1,185	ESMG6R3E□□332MJ20S
	4,700	12.5×20	0.40	1,545	ESMG6R3E□□472MK20S
	6,800	12.5×25	0.44	1,915	ESMG6R3E□□682MK25S
	10,000	16×25	0.52	2,330	ESMG6R3E□□103ML25S
	10,000	20×25	0.46	2,310	ESMG6R3E□□103MN25S
	15,000	16×35.5	0.62	2,845	ESMG6R3E□□153MLP1S
	15,000	20×30	0.56	2,660	ESMG6R3E□□153MN30S
	18,000	20×35	0.62	2,890	ESMG6R3E□□183MN35S
	18,000	22×30	0.62	2,860	ESMG6R3E□□183MP30S
	22,000	18×40	0.76	3,320	ESMG6R3E□□223MM40S
	22,000	20×40	0.70	3,130	ESMG6R3E□□223MN40S
	22,000	22×35	0.70	3,130	ESMG6R3E□□223MP35S
	27,000	22×40	0.80	3,280	ESMG6R3E□□273MP40S
10	220	5×11	0.24	240	ESMG100E□□221ME11D
	330	6.3×11	0.24	290	ESMG100E□□331MF11D
	470	6.3×11	0.24	350	ESMG100E□□471MF11D
	1,000	10×12.5	0.24	650	ESMG100E□□102MJC5S
	2,200	10×20	0.26	1,070	ESMG100E□□222MJ20S
	3,300	12.5×20	0.28	1,420	ESMG100E□□332MK20S
	4,700	12.5×25	0.30	1,780	ESMG100E□□472MK25S
	6,800	16×25	0.34	2,220	ESMG100E□□682ML25S
	6,800	20×20	0.34	2,080	ESMG100E□□682MN20S
	10,000	16×35.5	0.42	2,670	ESMG100E□□103MLP1S
	10,000	20×25	0.42	2,410	ESMG100E□□103MN25S
	12,000	20×30	0.46	2,620	ESMG100E□□123MN30S
	15,000	18×35.5	0.52	3,080	ESMG100E□□153MMP1S
	15,000	20×35	0.52	2,870	ESMG100E□□153MN35S
	15,000	22×30	0.52	2,660	ESMG100E□□153MP30S
	18,000	22×35	0.58	3,050	ESMG100E□□183MP35S
	22,000	22×40	0.66	3,480	ESMG100E□□223MP40S
16	100	5×11	0.20	160	ESMG160E□□101ME11D
	220	6.3×11	0.20	260	ESMG160E□□221MF11D
	330	8×11.5	0.20	370	ESMG160E□□331MHB5D
	470	8×11.5	0.20	440	ESMG160E□□471MHB5D
	1,000	10×16	0.20	785	ESMG160E□□102MJ16S
	2,200	12.5×20	0.22	1,295	ESMG160E□□222MK20S
	3,300	12.5×25	0.24	1,655	ESMG160E□□332MK25S
	4,700	16×25	0.26	2,090	ESMG160E□□472ML25S
	4,700	20×20	0.26	1,960	ESMG160E□□472MN20S
	6,800	16×31.5	0.30	2,520	ESMG160E□□682MLN3S
	6,800	20×25	0.30	2,330	ESMG160E□□682MN25S
	8,200	20×30	0.34	2,500	ESMG160E□□822MN30S
	10,000	18×35.5	0.38	2,920	ESMG160E□□103MMP1S
	10,000	20×35	0.38	2,720	ESMG160E□□103MN35S
	10,000	22×30	0.38	2,660	ESMG160E□□103MP30S
	12,000	20×40	0.42	2,900	ESMG160E□□123MN40S
	12,000	22×35	0.42	2,900	ESMG160E□□123MP35S
	15,000	22×40	0.48	3,380	ESMG160E□□153MP40S
25	47	5×11	0.16	115	ESMG250E□□470ME11D
	100	6.3×11	0.16	190	ESMG250E□□101MF11D
	220	8×11.5	0.16	330	ESMG250E□□221MHB5D
	330	8×11.5	0.16	440	ESMG250E□□331MHB5D
	470	10×12.5	0.16	545	ESMG250E□□471MJC5S
	1,000	10×20	0.16	955	ESMG250E□□102MJ20S
	2,200	12.5×25	0.18	1,540	ESMG250E□□222MK25S
	3,300	16×25	0.20	1,975	ESMG250E□□332ML25S
	3,300	20×20	0.20	1,850	ESMG250E□□332MN20S
	4,700	16×31.5	0.22	2,420	ESMG250E□□472MLN3S
	4,700	20×25	0.22	2,420	ESMG250E□□472MN25S
	5,600	20×30	0.24	2,430	ESMG250E□□562MN30S
	6,800	18×35.5	0.26	2,880	ESMG250E□□682MMP1S
	6,800	20×35	0.26	2,680	ESMG250E□□682MN35S
25	6,800	22×30	0.26	2,510	ESMG250E□□682MP30S
	8,200	20×40	0.30	2,810	ESMG250E□□822MN40S
	8,200	22×35	0.30	2,810	ESMG250E□□822MP35S
	10,000	22×40	0.34	3,240	ESMG250E□□103MP40S
	12,000	22×40	0.38	3,240	ESMG250E□□123MP40S
35	47	5×11	0.14	130	ESMG350E□□470ME11D
	100	6.3×11	0.14	210	ESMG350E□□101MF11D
	220	8×11.5	0.14	385	ESMG350E□□221MHB5D
	330	10×12.5	0.14	490	ESMG350E□□331MJC5S
	470	10×16	0.14	645	ESMG350E□□471MJ16S
	1,000	12.5×20	0.14	1,145	ESMG350E□□102MK20S
	2,200	16×25	0.16	1,785	ESMG350E□□222ML25S
	2,200	20×20	0.16	1,670	ESMG350E□□222MN20S
	3,300	16×35.5	0.18	2,275	ESMG350E□□332MLP1S
	3,300	20×25	0.18	2,050	ESMG350E□□332MN25S
	3,900	20×30	0.18	2,310	ESMG350E□□392MN30S
	4,700	18×35.5	0.20	2,700	ESMG350E□□472MMP1S
	4,700	20×35	0.20	2,510	ESMG350E□□472MN35S
	4,700	22×30	0.20	2,380	ESMG350E□□472MP30S
	5,600	20×40	0.22	2,690	ESMG350E□□562MN40S
	5,600	22×35	0.22	2,690	ESMG350E□□562MP35S
	6,800	22×40	0.24	3,090	ESMG350E□□682MP40S
50	1.0	5×11	0.12	17	ESMG500E□□1R0ME11D
	2.2	5×11	0.12	28	ESMG500E□□2R2ME11D
	3.3	5×11	0.12	35	ESMG500E□□3R3ME11D
	4.7	5×11	0.12	41	ESMG500E□□4R7ME11D
	10	5×11	0.12	60	ESMG500E□□100ME11D
	22	5×11	0.12	95	ESMG500E□□220ME11D
	33	5×11	0.12	125	ESMG500E□□330ME11D
	47	6.3×11	0.12	155	ESMG500E□□470MF11D
	100	8×11.5	0.12	260	ESMG500E□□101MHB5D
	220	10×12.5	0.12	430	ESMG500E□□221MJC5S
	330	10×16	0.12	585	ESMG500E□□331MJ16S
	470	10×20	0.12	755	ESMG500E□□471MJ20S
	1,000	12.5×25	0.12	1,340	ESMG500E□□102MK25S
	1,500	20×20	0.12	1,570	ESMG500E□□152MN20S
	2,200	16×35.5	0.14	2,075	ESMG500E□□222MLP1S
	2,200	20×25	0.14	1,880	ESMG500E□□222MN25S
	2,700	20×30	0.14	2,150	ESMG500E□□272MN30S
	3,300	18×35.5	0.16	2,500	ESMG500E□□332MMP1S
	3,300	20×35	0.16	2,420	ESMG500E□□332MN35S
	3,300	22×30	0.16	2,420	ESMG500E□□332MP30S
	3,900	20×40	0.16	2,590	ESMG500E□□392MN40S
	3,900	22×35	0.16	2,590	ESMG500E□□392MP35S
	4,700	22×40	0.18	2,960	ESMG500E□□472MP40S
63	10	5×11	0.09	65	ESMG630E□□100ME11D
	22	5×11	0.09	100	ESMG630E□□220ME11D
	33	6.3×11	0.09	140	ESMG630E□□330MF11D
	47	6.3×11	0.09	170	ESMG630E□□470MF11D
	100	10×12.5	0.09	300	ESMG630E□□101MJC5S
	220	10×16	0.09	490	ESMG630E□□221MJ16S
	330	10×20	0.09	710	ESMG630E□□331MJ20S
	470	12.5×20	0.09	900	ESMG630E□□471MK20S
	820	20×20	0.09	1,370	ESMG630E□□821MN20S
	1,000	16×25	0.09	1,300	ESMG630E□□102ML25S
	1,000	20×25	0.09	1,600	ESMG630E□□102MN25S
	1,500	20×30	0.09	1,850	ESMG630E□□152MN30S
	2,200	20×35	0.11	2,330	ESMG630E□□222MN35S
	2,200	22×30	0.11	2,190	ESMG630E□□222MP30S
	2,700	20×40	0.11	2,640	ESMG630E□□272MN40S
	3,300	22×40	0.13	2,810	ESMG630E□□332MP40S
100	1.0	5×11	0.08	21	ESMG101E□□1R0ME11D
	2.2	5×11	0.08	30	ESMG101E□□2R2ME11D
	3.3	5×11	0.08	40	ESMG101E□□3R3ME11D
	4.7	5×11	0.08	45	ESMG101E□□4R7ME11D
	10	6.3×11	0.08	75	ESMG101E□□100MF11D
	22	8×11.5	0.08	130	ESMG101E□□220MHB5D

□□ : Enter the appropriate lead forming or taping code.

SMG Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
100	33	8×11.5	0.08	180	ESMG101E□□330MHB5D
	47	10×12.5	0.08	230	ESMG101E□□470MJC5S
	100	10×20	0.08	370	ESMG101E□□101MJ20S
	220	12.5×25	0.08	620	ESMG101E□□221MK25S
	330	12.5×25	0.08	760	ESMG101E□□331MK25S
	330	20×20	0.08	870	ESMG101E□□331MN20S
	470	16×25	0.08	1,000	ESMG101E□□471ML25S
	680	20×30	0.08	1,360	ESMG101E□□681MN30S
	820	22×30	0.08	1,540	ESMG101E□□821MP30S
	1,000	18×40	0.08	1,380	ESMG101E□□102MM40S
	1,000	20×35	0.08	1,720	ESMG101E□□102MN35S
	1,200	22×40	0.08	1,980	ESMG101E□□122MP40S
160	3.3	6.3×11	0.20	40	ESMG161E□□3R3MF11D
	4.7	6.3×11	0.20	48	ESMG161E□□4R7MF11D
	10	10×12.5	0.20	94	ESMG161E□□100MJC5S
	22	10×20	0.20	170	ESMG161E□□220MJ20S
	33	10×20	0.20	205	ESMG161E□□330MJ20S
	47	12.5×20	0.20	270	ESMG161E□□470MK20S
	100	12.5×25	0.20	430	ESMG161E□□101MK25S
	220	16×31.5	0.20	760	ESMG161E□□221MLN3S
	220	20×25	0.15	730	ESMG161E□□221MN25S
	330	18×35.5	0.20	995	ESMG161E□□331MMP1S
	330	20×30	0.15	920	ESMG161E□□331MN30S
	390	20×35	0.15	1,160	ESMG161E□□391MN35S
	390	22×30	0.15	1,160	ESMG161E□□391MP30S
	470	20×40	0.15	1,340	ESMG161E□□471MN40S
	470	22×35	0.15	1,340	ESMG161E□□471MP35S
	560	22×40	0.15	1,470	ESMG161E□□561MP40S
200	3.3	6.3×11	0.20	40	ESMG201E□□3R3MF11D
	4.7	8×11.5	0.20	55	ESMG201E□□4R7MHB5D
	10	10×12.5	0.20	94	ESMG201E□□100MJC5S
	22	10×20	0.20	170	ESMG201E□□220MJ20S
	33	10×20	0.20	205	ESMG201E□□330MJ20S
	47	12.5×20	0.20	270	ESMG201E□□470MK20S
	100	16×25	0.20	475	ESMG201E□□101ML25S
	100	20×20	0.15	460	ESMG201E□□101MN20S
	180	20×25	0.15	660	ESMG201E□□181MN25S
	220	18×35.5	0.20	810	ESMG201E□□221MMP1S
	220	20×30	0.15	750	ESMG201E□□221MN30S
	270	20×30	0.15	830	ESMG201E□□271MN30S
	330	20×35	0.15	1,070	ESMG201E□□331MN35S
	330	22×30	0.15	1,070	ESMG201E□□331MP30S
	390	20×40	0.15	1,190	ESMG201E□□391MN40S
	390	22×30	0.15	1,160	ESMG201E□□391MP30S
	470	22×40	0.15	1,350	ESMG201E□□471MP40S
	560	22×40	0.15	1,430	ESMG201E□□561MP40S
250	2.2	6.3×11	0.20	32	ESMG251E□□2R2MF11D
	3.3	8×11.5	0.20	46	ESMG251E□□3R3MHB5D
	4.7	8×11.5	0.20	55	ESMG251E□□4R7MHB5D
	10	10×16	0.20	105	ESMG251E□□100MJ16S
	22	10×20	0.20	170	ESMG251E□□220MJ20S
	33	12.5×20	0.20	230	ESMG251E□□330MK20S
	47	12.5×25	0.20	295	ESMG251E□□470MK25S
	82	20×20	0.15	420	ESMG251E□□820MN20S
	100	16×31.5	0.20	515	ESMG251E□□101MLN3S
	100	20×25	0.15	490	ESMG251E□□101MN25S
	120	20×25	0.15	530	ESMG251E□□121MN25S
	180	20×30	0.15	680	ESMG251E□□181MN30S
	220	18×40	0.20	825	ESMG251E□□221MM40S
	220	20×35	0.15	780	ESMG251E□□221MN35S
	220	22×30	0.15	820	ESMG251E□□221MP30S
	270	20×40	0.15	880	ESMG251E□□271MN40S
	270	22×35	0.15	880	ESMG251E□□271MP35S
	330	22×40	0.15	1,060	ESMG251E□□331MP40S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
315	47	20×20	0.15	310	ESMG3B1E□□470MN20S
	68	20×25	0.15	400	ESMG3B1E□□680MN25S
	82	20×25	0.15	440	ESMG3B1E□□820MN25S
	100	20×30	0.15	500	ESMG3B1E□□101MN30S
	120	20×30	0.15	550	ESMG3B1E□□121MN30S
	180	20×40	0.15	720	ESMG3B1E□□181MN40S
	180	22×35	0.15	720	ESMG3B1E□□181MP35S
	220	22×40	0.15	810	ESMG3B1E□□221MP40S
350	1.0	6.3×11	0.24	22	ESMG351E□□1R0MF11D
	2.2	8×11.5	0.24	38	ESMG351E□□2R2MHB5D
	3.3	8×11.5	0.24	46	ESMG351E□□3R3MHB5D
	4.7	10×12.5	0.24	65	ESMG351E□□4R7MJC5S
	10	10×20	0.24	115	ESMG351E□□100MJ20S
	22	12.5×20	0.24	185	ESMG351E□□220MK20S
	33	16×25	0.24	275	ESMG351E□□330ML25S
	47	16×25	0.24	325	ESMG351E□□470ML25S
	47	20×20	0.15	310	ESMG351E□□470MN20S
	68	20×25	0.15	400	ESMG351E□□680MN25S
	100	18×31.5	0.24	530	ESMG351E□□101MMN3S
	100	20×30	0.15	500	ESMG351E□□101MN30S
	120	20×35	0.15	560	ESMG351E□□121MN35S
400	1.0	6.3×11	0.24	22	ESMG401E□□1R0MF11D
	2.2	8×11.5	0.24	38	ESMG401E□□2R2MHB5D
	3.3	10×12.5	0.24	54	ESMG401E□□3R3MJC5S
	4.7	10×16	0.24	71	ESMG401E□□4R7MJ16S
	10	10×20	0.24	115	ESMG401E□□100MJ20S
	22	12.5×25	0.24	205	ESMG401E□□220MK25S
	33	16×25	0.24	275	ESMG401E□□330ML25S
	33	20×20	0.15	260	ESMG401E□□330MN20S
	47	16×31.5	0.24	350	ESMG401E□□470MLN3S
	56	20×25	0.15	350	ESMG401E□□560MN25S
	68	20×30	0.15	420	ESMG401E□□680MN30S
	100	20×35	0.15	520	ESMG401E□□101MN35S
	100	22×30	0.15	520	ESMG401E□□101MP30S
	120	20×40	0.15	580	ESMG401E□□121MN40S
	120	22×35	0.15	580	ESMG401E□□121MP35S
450	2.2	10×12.5	0.24	32	ESMG451E□□2R2MJC5S
	3.3	10×16	0.24	44	ESMG451E□□3R3MJ16S
	4.7	10×20	0.24	56	ESMG451E□□4R7MJ20S
	10	12.5×20	0.24	91	ESMG451E□□100MK20S
	22	16×25	0.24	165	ESMG451E□□220ML25S
	22	20×20	0.20	180	ESMG451E□□220MN20S
	33	16×31.5	0.24	215	ESMG451E□□330MLN3S
	33	20×25	0.20	240	ESMG451E□□330MN25S
	47	16×35.5	0.24	265	ESMG451E□□470MLP1S
	47	20×25	0.20	290	ESMG451E□□470MN25S
	56	20×30	0.20	320	ESMG451E□□560MN30S
	68	20×35	0.20	370	ESMG451E□□680MN35S
	68	22×30	0.20	370	ESMG451E□□680MP30S
	82	20×40	0.20	420	ESMG451E□□820MN40S
	82	22×35	0.20	420	ESMG451E□□820MP35S
	100	22×40	0.20	470	ESMG451E□□101MP40S

□□ : Enter the appropriate lead forming or taping code.

SMG Series

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

(φ5 to φ18)

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

(φ20, φ22)

Rated Voltage (Vdc) \ Frequency (Hz)	50	120	300	1k	10k	100k
6.3 to 50	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100	0.92	1.00	1.07	1.13	1.19	1.20
160 to 250	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450	0.77	1.00	1.16	1.30	1.41	1.43

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KMG Series

- Endurance with ripple current : 1,000 to 2,000 hours at 105℃
- Solvent resistant type except 350 to 450Vdc (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

KMQ P122 ↑ Downsized

KMG

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−55 to +105℃(6.3 to 100Vdc) −40 to +105℃(160 to 400Vdc) -25 to +105℃(450Vdc)
Rated Voltage Range	6.3 to 450Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	6.3 to 100Vdc: I=0.03CV or 4μA, whichever is greater. (at 20℃ after 1 minute) 160 to 450Vdc: CV≦1,000 → I=0.1CV+40 max. (After 1minute); I=0.03CV+15 max. (After 5minutes); CV>1,000 → I=0.04CV+100 max. (After 1minute); I=0.02CV+25 max. (After 5minutes) (at 20℃) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)

Dissipation Factor (tanδ)

Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V
tanδ (Max.)	0.34	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.24	0.24

When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)

Low Temperature Characteristics (Max. Impedance Ratio)

Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V
Z(−25℃)/Z(+20℃)	5	4	3	2	2	2	2	2	3	6	6
Z(−40℃)/Z(+20℃)	12	10	8	5	4	3	3	3	4	6	—

(at 120Hz)

Endurance

The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 1,000 hours (2,000 hours to meet the following two conditions 1): 160Vdc and larger, 2) : φ12.5 and larger) at 105℃.

Capacitance change	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value
Leakage current	≦The initial specified value

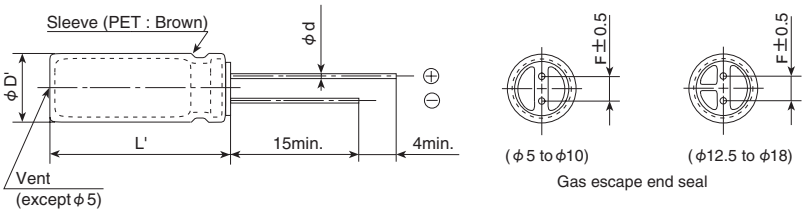
Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.

Rated voltage	6.3 to 100Vcd	160 to 450Vdc
Capacitance change	≦±20% of the initial value	≦±20% of the initial value
D.F. (tanδ)	≦200% of the initial specified value	≦200% of the initial specified value
Leakage current	≦The initial specified value	≦500% of the initial specified value

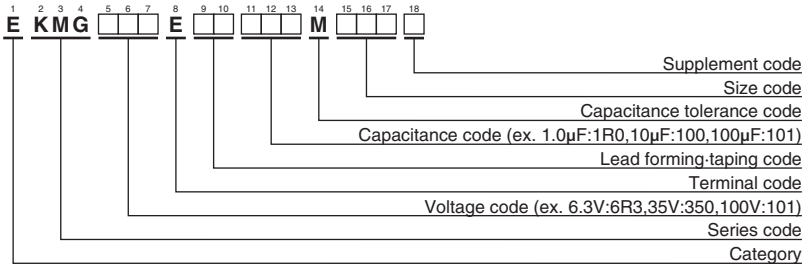
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max						
L'	L+1.5max						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KMG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
6.3	220	5×11	0.34	140	EKMG6R3E□□221ME11D
	330	6.3×11	0.34	190	EKMG6R3E□□331MF11D
	470	6.3×11	0.34	230	EKMG6R3E□□471MF11D
	1,000	8×11.5	0.34	380	EKMG6R3E□□102MHB5D
	2,200	10×20	0.36	710	EKMG6R3E□□222MJ20S
	3,300	10×20	0.38	840	EKMG6R3E□□332MJ20S
	4,700	12.5×20	0.40	1,090	EKMG6R3E□□472MK20S
	6,800	12.5×25	0.44	1,350	EKMG6R3E□□682MK25S
	10,000	16×25	0.52	1,650	EKMG6R3E□□103ML25S
	15,000	16×35.5	0.62	2,010	EKMG6R3E□□153MLP1S
	22,000	18×40	0.76	2,350	EKMG6R3E□□223MM40S
10	220	6.3×11	0.24	170	EKMG100E□□221MF11D
	330	6.3×11	0.24	200	EKMG100E□□331MF11D
	470	8×11.5	0.24	250	EKMG100E□□471MHB5D
	1,000	10×12.5	0.24	460	EKMG100E□□102MJC5S
	2,200	10×20	0.26	760	EKMG100E□□222MJ20S
	3,300	12.5×20	0.28	1,000	EKMG100E□□332MK20S
	4,700	12.5×25	0.30	1,260	EKMG100E□□472MK25S
	6,800	16×25	0.34	1,570	EKMG100E□□682ML25S
	10,000	16×35.5	0.42	1,890	EKMG100E□□103MLP1S
	15,000	18×35.5	0.52	2,180	EKMG100E□□153MMP1S
16	100	5×11	0.20	110	EKMG160E□□101ME11D
	220	6.3×11	0.20	180	EKMG160E□□221MF11D
	330	8×11.5	0.20	260	EKMG160E□□331MHB5D
	470	8×11.5	0.20	310	EKMG160E□□471MHB5D
	1,000	10×16	0.20	560	EKMG160E□□102MJ16S
	2,200	12.5×20	0.22	920	EKMG160E□□222MK20S
	3,300	12.5×25	0.24	1,170	EKMG160E□□332MK25S
	4,700	16×25	0.26	1,480	EKMG160E□□472ML25S
	6,800	16×31.5	0.30	1,780	EKMG160E□□682MLN3S
	10,000	18×35.5	0.38	2,060	EKMG160E□□103MMP1S
25	47	5×11	0.16	80	EKMG250E□□470ME11D
	100	6.3×11	0.16	130	EKMG250E□□101MF11D
	220	8×11.5	0.16	230	EKMG250E□□221MHB5D
	330	8×11.5	0.16	310	EKMG250E□□331MHB5D
	470	10×12.5	0.16	380	EKMG250E□□471MJC5S
	1,000	10×20	0.16	680	EKMG250E□□102MJ20S
	2,200	12.5×25	0.18	1,090	EKMG250E□□222MK25S
	3,300	16×25	0.20	1,400	EKMG250E□□332ML25S
	4,700	16×31.5	0.22	1,710	EKMG250E□□472MLN3S
	6,800	18×35.5	0.26	2,040	EKMG250E□□682MMP1S
35	47	5×11	0.14	90	EKMG350E□□470ME11D
	100	6.3×11	0.14	150	EKMG350E□□101MF11D
	220	8×11.5	0.14	270	EKMG350E□□221MHB5D
	330	10×12.5	0.14	350	EKMG350E□□331MJC5S
	470	10×16	0.14	460	EKMG350E□□471MJ16S
	1,000	12.5×20	0.14	810	EKMG350E□□102MK20S
	2,200	16×25	0.16	1,260	EKMG350E□□222ML25S
	3,300	16×35.5	0.18	1,610	EKMG350E□□332MLP1S
	4,700	18×35.5	0.20	1,910	EKMG350E□□472MMP1S
50	1.0	5×11	0.12	13	EKMG500E□□1R0ME11D
	2.2	5×11	0.12	20	EKMG500E□□2R2ME11D
	3.3	5×11	0.12	25	EKMG500E□□3R3ME11D
	4.7	5×11	0.12	30	EKMG500E□□4R7ME11D
	10	5×11	0.12	40	EKMG500E□□100ME11D
	22	5×11	0.12	65	EKMG500E□□220ME11D
	33	5×11	0.12	90	EKMG500E□□330ME11D
	47	6.3×11	0.12	110	EKMG500E□□470MF11D
	100	8×11.5	0.12	180	EKMG500E□□101MHB5D
	220	10×12.5	0.12	300	EKMG500E□□221MJC5S
	330	10×16	0.12	410	EKMG500E□□331MJ16S
	470	10×20	0.12	530	EKMG500E□□471MJ20S
	1,000	12.5×25	0.12	950	EKMG500E□□102MK25S
	2,200	16×35.5	0.14	1,470	EKMG500E□□222MLP1S
	3,300	18×35.5	0.16	1,770	EKMG500E□□332MMP1S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
63	10	5×11	0.10	46	EKMG630E□□100ME11D
	22	5×11	0.10	71	EKMG630E□□220ME11D
	33	6.3×11	0.10	100	EKMG630E□□330MF11D
	47	6.3×11	0.10	120	EKMG630E□□470MF11D
	100	10×12.5	0.10	215	EKMG630E□□101MJC5S
	220	10×16	0.10	335	EKMG630E□□221MJ16S
	330	10×20	0.10	510	EKMG630E□□331MJ20S
	470	12.5×20	0.10	640	EKMG630E□□471MK20S
	1,000	16×25	0.10	930	EKMG630E□□102ML25S
100	1.0	5×11	0.08	15	EKMG101E□□1R0ME11D
	2.2	5×11	0.08	21	EKMG101E□□2R2ME11D
	3.3	5×11	0.08	29	EKMG101E□□3R3ME11D
	4.7	5×11	0.08	32	EKMG101E□□4R7ME11D
	10	6.3×11	0.08	54	EKMG101E□□100MF11D
	22	8×11.5	0.08	93	EKMG101E□□220MHB5D
	33	8×11.5	0.08	130	EKMG101E□□330MHB5D
	47	10×12.5	0.08	165	EKMG101E□□470MJC5S
	100	10×20	0.08	265	EKMG101E□□101MJ20S
	220	12.5×25	0.08	440	EKMG101E□□221MK25S
	330	16×25	0.08	540	EKMG101E□□331ML25S
	470	16×31.5	0.08	715	EKMG101E□□471MLN3S
	1,000	18×40	0.08	985	EKMG101E□□102MM40S
160	3.3	6.3×11	0.20	28	EKMG161E□□3R3MF11D
	4.7	6.3×11	0.20	34	EKMG161E□□4R7MF11D
	10	10×12.5	0.20	67	EKMG161E□□100MJC5S
	22	10×20	0.20	120	EKMG161E□□220MJ20S
	33	10×20	0.20	145	EKMG161E□□330MJ20S
	47	12.5×20	0.20	195	EKMG161E□□470MK20S
	100	16×25	0.20	335	EKMG161E□□101ML25S
	220	16×31.5	0.20	540	EKMG161E□□221MLN3S
	330	18×35.5	0.20	705	EKMG161E□□331MMP1S
200	3.3	6.3×11	0.20	28	EKMG201E□□3R3MF11D
	4.7	8×11.5	0.20	39	EKMG201E□□4R7MHB5D
	10	10×16	0.20	74	EKMG201E□□100MJ16S
	22	10×20	0.20	120	EKMG201E□□220MJ20S
	33	12.5×20	0.20	160	EKMG201E□□330MK20S
	47	12.5×20	0.20	195	EKMG201E□□470MK20S
	100	16×25	0.20	335	EKMG201E□□101ML25S
	220	18×35.5	0.20	575	EKMG201E□□221MMP1S
250	2.2	6.3×11	0.20	23	EKMG251E□□2R2MF11D
	3.3	8×11.5	0.20	32	EKMG251E□□3R3MHB5D
	4.7	8×11.5	0.20	39	EKMG251E□□4R7MHB5D
	10	10×16	0.20	74	EKMG251E□□100MJ16S
	22	12.5×20	0.20	130	EKMG251E□□220MK20S
	33	12.5×20	0.20	160	EKMG251E□□330MK20S
	47	12.5×25	0.20	210	EKMG251E□□470MK25S
	100	16×31.5	0.20	365	EKMG251E□□101MLN3S
	220	18×40	0.20	585	EKMG251E□□221MM40S
350	1.0	6.3×11	0.24	15	EKMG351E□□1R0MF11D
	2.2	8×11.5	0.24	26	EKMG351E□□2R2MHB5D
	3.3	10×12.5	0.24	38	EKMG351E□□3R3MJC5S
	4.7	10×16	0.24	50	EKMG351E□□4R7MJ16S
	10	10×20	0.24	80	EKMG351E□□100MJ20S
	22	12.5×20	0.24	130	EKMG351E□□220MK20S
	33	16×25	0.24	195	EKMG351E□□330ML25S
	47	16×25	0.24	230	EKMG351E□□470ML25S
	100	18×31.5	0.24	375	EKMG351E□□101MMN3S
400	1.0	6.3×11	0.24	15	EKMG401E□□1R0MF11D
	2.2	8×11.5	0.24	26	EKMG401E□□2R2MHB5D
	3.3	10×12.5	0.24	38	EKMG401E□□3R3MJC5S
	4.7	10×16	0.24	50	EKMG401E□□4R7MJ16S
	10	10×20	0.24	80	EKMG401E□□100MJ20S
	22	12.5×25	0.24	145	EKMG401E□□220MK25S
	33	16×25	0.24	195	EKMG401E□□330ML25S
	47	16×31.5	0.24	250	EKMG401E□□470MLN3S
	100	16×40	0.24	350	EKMG401E□□101ML40S

□□ : Enter the appropriate lead forming or taping code.

KMG Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
450	2.2	10×12.5	0.24	23	EKMG451E□□2R2MJC5S
	3.3	10×16	0.24	31	EKMG451E□□3R3MJ16S
	4.7	10×20	0.24	40	EKMG451E□□4R7MJ20S
	10	12.5×20	0.24	65	EKMG451E□□100MK20S
	22	16×25	0.24	115	EKMG451E□□220ML25S
	33	16×31.5	0.24	155	EKMG451E□□330MLN3S
	47	16×35.5	0.24	185	EKMG451E□□470MLP1S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

SME-BP Series

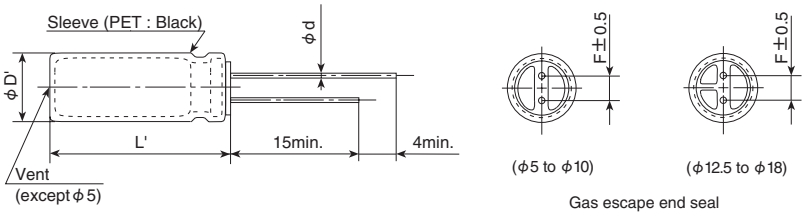
- Standard Bi-polar type
- Endurance : 2,000 hours at 85℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−40 to +85℃									
Rated Voltage Range	6.3 to 100Vdc									
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)									
Leakage Current	I=0.06CV or 10μA, whichever is greater. (at 20℃ after 2 minutes) I=0.03CV or 3μA, whichever is greater. (at 20℃ after 5 minutes) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)									
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	tanδ (Max.)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.12	0.10
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)									
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(−40℃)/Z(+20℃)	10	8	6	4	3	3	3	3	3
	(at 120Hz)									
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 85℃, however the polarization shall be reversed every 250 hours.									
	Rated voltage	6.3 to 16Vdc				25 to 100Vdc				
	Capacitance change	≦±25% of the initial value				≦±20% of the initial value				
	D.F. (tanδ)	≦150% of the initial specified value								
	Leakage current	≦The initial specified value								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.									
	Rated voltage	6.3 to 16Vdc				25 to 100Vdc				
	Capacitance change	≦±25% of the initial value				≦±20% of the initial value				
	D.F. (tanδ)	≦150% of the initial specified value								
	Leakage current	≦The initial specified value								

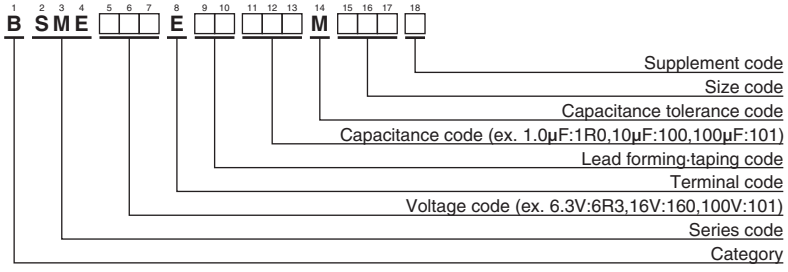
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

SME-BP Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
6.3	33	5×11	0.24	64	BSME6R3E□□330ME11D
	47	5×11	0.24	76	BSME6R3E□□470ME11D
	100	6.3×11	0.24	125	BSME6R3E□□101MF11D
	220	8×11.5	0.24	215	BSME6R3E□□221MHB5D
	330	8×11.5	0.24	265	BSME6R3E□□331MHB5D
	470	10×12.5	0.24	370	BSME6R3E□□471MJC5S
	1,000	10×20	0.24	650	BSME6R3E□□102MJ20S
	2,200	12.5×25	0.26	1,160	BSME6R3E□□222MK25S
	3,300	16×25	0.28	1,570	BSME6R3E□□332ML25S
	4,700	16×31.5	0.30	2,020	BSME6R3E□□472MLN3S
	6,800	18×35.5	0.34	2,600	BSME6R3E□□682MMP1S
10	22	5×11	0.24	57	BSME100E□□220ME11D
	33	5×11	0.24	64	BSME100E□□330ME11D
	47	5×11	0.24	76	BSME100E□□470ME11D
	100	6.3×11	0.24	125	BSME100E□□101MF11D
	220	8×11.5	0.24	215	BSME100E□□221MHB5D
	330	10×16	0.24	345	BSME100E□□331MJ16S
	470	10×16	0.24	410	BSME100E□□471MJ16S
	1,000	12.5×20	0.24	720	BSME100E□□102MK20S
	2,200	16×25	0.26	1,280	BSME100E□□222ML25S
	3,300	16×31.5	0.28	1,690	BSME100E□□332MLN3S
	4,700	18×35.5	0.30	2,160	BSME100E□□472MMP1S
16	10	5×11	0.20	42	BSME160E□□100ME11D
	22	5×11	0.20	57	BSME160E□□220ME11D
	33	5×11	0.20	70	BSME160E□□330ME11D
	47	6.3×11	0.20	95	BSME160E□□470MF11D
	100	8×11.5	0.20	160	BSME160E□□101MHB5D
	220	10×12.5	0.20	275	BSME160E□□221MJC5S
	330	10×16	0.20	375	BSME160E□□331MJ16S
	470	10×20	0.20	485	BSME160E□□471MJ20S
	1,000	12.5×25	0.20	855	BSME160E□□102MK25S
	2,200	16×31.5	0.22	1,510	BSME160E□□222MLN3S
	3,300	18×35.5	0.24	1,980	BSME160E□□332MMP1S
25	10	5×11	0.20	42	BSME250E□□100ME11D
	22	6.3×11	0.20	65	BSME250E□□220MF11D
	33	6.3×11	0.20	80	BSME250E□□330MF11D
	47	6.3×11	0.20	95	BSME250E□□470MF11D
	100	8×11.5	0.20	160	BSME250E□□101MHB5D
	220	10×16	0.20	305	BSME250E□□221MJ16S
	330	12.5×20	0.20	450	BSME250E□□331MK20S
	470	12.5×20	0.20	540	BSME250E□□471MK20S
	1,000	16×25	0.20	950	BSME250E□□102ML25S
	2,200	18×35.5	0.22	1,620	BSME250E□□222MMP1S
35	4.7	5×11	0.16	34	BSME350E□□4R7ME11D
	10	5×11	0.16	43	BSME350E□□100ME11D
	22	6.3×11	0.16	73	BSME350E□□220MF11D
	33	8×11.5	0.16	100	BSME350E□□330MHB5D
	47	8×11.5	0.16	120	BSME350E□□470MHB5D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
35	100	10×16	0.16	230	BSME350E□□101MJ16S
	220	12.5×20	0.16	410	BSME350E□□221MK20S
	330	12.5×20	0.16	505	BSME350E□□331MK20S
	470	12.5×25	0.16	655	BSME350E□□471MK25S
	1,000	16×31.5	0.16	1,140	BSME350E□□102MLN3S
50	1.0	5×11	0.14	17	BSME500E□□1R0ME11D
	2.2	5×11	0.14	25	BSME500E□□2R2ME11D
	3.3	5×11	0.14	27	BSME500E□□3R3ME11D
	4.7	5×11	0.14	34	BSME500E□□4R7ME11D
	10	6.3×11	0.14	52	BSME500E□□100MF11D
	22	8×11.5	0.14	89	BSME500E□□220MHB5D
	33	8×11.5	0.14	105	BSME500E□□330MHB5D
	47	10×12.5	0.14	150	BSME500E□□470MJC5S
	100	10×20	0.14	265	BSME500E□□101MJ20S
	220	12.5×25	0.14	480	BSME500E□□221MK25S
	330	16×25	0.14	650	BSME500E□□331ML25S
	470	16×31.5	0.14	835	BSME500E□□471MLN3S
63	3.3	5×11	0.12	28	BSME630E□□3R3ME11D
	4.7	6.3×11	0.12	34	BSME630E□□4R7MF11D
	10	6.3×11	0.12	57	BSME630E□□100MF11D
	22	8×11.5	0.12	95	BSME630E□□220MHB5D
	33	10×12.5	0.12	135	BSME630E□□330MJC5S
	47	10×16	0.12	180	BSME630E□□470MJ16S
	100	12.5×20	0.12	320	BSME630E□□101MK20S
	220	16×25	0.12	575	BSME630E□□221ML25S
	330	16×31.5	0.12	655	BSME630E□□331MLN3S
	470	18×35.5	0.12	965	BSME630E□□471MMP1S
80	2.2	5×11	0.12	29	BSME800E□□2R2ME11D
	3.3	6.3×11	0.12	39	BSME800E□□3R3MF11D
	4.7	6.3×11	0.12	47	BSME800E□□4R7MF11D
	10	8×11.5	0.12	65	BSME800E□□100MHB5D
	22	10×16	0.12	125	BSME800E□□220MJ16S
	33	10×16	0.12	150	BSME800E□□330MJ16S
	47	10×20	0.12	195	BSME800E□□470MJ20S
	100	12.5×25	0.12	350	BSME800E□□101MK25S
	220	16×31.5	0.12	615	BSME800E□□221MLN3S
	330	18×35.5	0.12	755	BSME800E□□331MMP1S
100	1.0	5×11	0.10	21	BSME101E□□1R0ME11D
	2.2	6.3×11	0.10	34	BSME101E□□2R2MF11D
	3.3	6.3×11	0.10	39	BSME101E□□3R3MF11D
	4.7	6.3×11	0.10	47	BSME101E□□4R7MF11D
	10	8×11.5	0.10	71	BSME101E□□100MHB5D
	22	10×16	0.10	135	BSME101E□□220MJ16S
	33	12.5×20	0.10	220	BSME101E□□330MK20S
	47	12.5×20	0.10	240	BSME101E□□470MK20S
	100	16×25	0.10	425	BSME101E□□101ML25S
	220	18×35.5	0.10	720	BSME101E□□221MMP1S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KME-BP Series

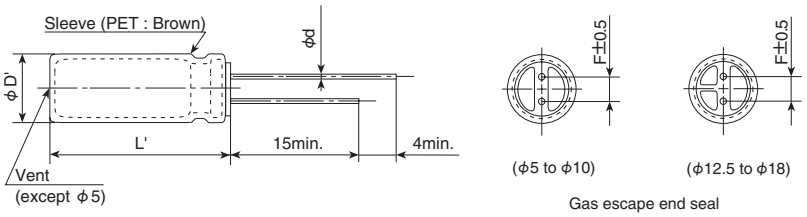
- Standard Bi-polar type
- Endurance : 1,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−55 to +105℃									
Rated Voltage Range	6.3 to 100Vdc									
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)									
Leakage Current	I=0.06CV or 10μA, whichever is greater. (at 20℃ after 2 minutes) I=0.03CV or 3μA, whichever is greater. (at 20℃ after 5 minutes) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)									
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	tanδ (Max.)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.12	0.10
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)									
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(−40℃)/Z(+20℃)	10	8	6	4	3	3	3	3	3
	(at 120Hz)									
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 1,000 hours at 105℃, however the polarization shall be reversed every 250 hours.									
	Rated voltage	6.3 to 16Vdc					25 to 100Vdc			
	Capacitance change	≦±25% of the initial value					≦±20% of the initial value			
	D.F. (tanδ)	≦150% of the initial specified value								
	Leakage current	≦The initial specified value								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.									
	Rated voltage	6.3 to 16Vdc					25 to 100Vdc			
	Capacitance change	≦±25% of the initial value					≦±20% of the initial value			
	D.F. (tanδ)	≦150% of the initial specified value								
	Leakage current	≦The initial specified value								

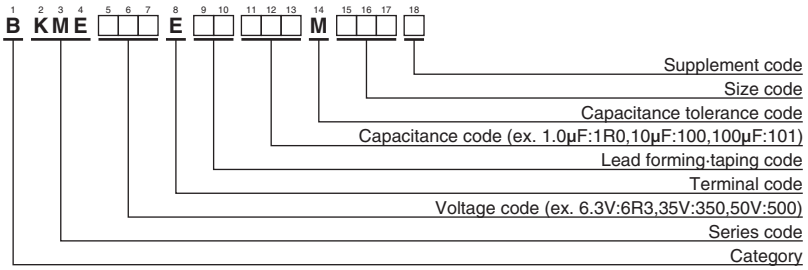
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KME-BP Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
6.3	33	5×11	0.24	45	BKME6R3E□□330ME11D
	47	5×11	0.24	54	BKME6R3E□□470ME11D
	100	6.3×11	0.24	90	BKME6R3E□□101MF11D
	220	8×11.5	0.24	150	BKME6R3E□□221MHB5D
	330	8×11.5	0.24	185	BKME6R3E□□331MHB5D
	470	10×12.5	0.24	260	BKME6R3E□□471MJC5S
	1,000	10×20	0.24	460	BKME6R3E□□102MJ20S
	2,200	12.5×25	0.26	820	BKME6R3E□□222MK25S
	3,300	16×25	0.28	1,110	BKME6R3E□□332ML25S
	4,700	16×31.5	0.30	1,430	BKME6R3E□□472MLN3S
	6,800	18×35.5	0.34	1,830	BKME6R3E□□682MMP1S
10	22	5×11	0.24	37	BKME100E□□220ME11D
	33	5×11	0.24	45	BKME100E□□330ME11D
	47	5×11	0.24	54	BKME100E□□470ME11D
	100	6.3×11	0.24	90	BKME100E□□101MF11D
	220	8×11.5	0.24	150	BKME100E□□221MHB5D
	330	10×16	0.24	240	BKME100E□□331MJ16S
	470	10×16	0.24	290	BKME100E□□471MJ16S
	1,000	12.5×20	0.24	510	BKME100E□□102MK20S
	2,200	16×25	0.26	910	BKME100E□□222ML25S
	3,300	16×31.5	0.28	1,200	BKME100E□□332MLN3S
	4,700	18×35.5	0.30	1,520	BKME100E□□472MMP1S
16	10	5×11	0.20	27	BKME160E□□100ME11D
	22	5×11	0.20	40	BKME160E□□220ME11D
	33	5×11	0.20	49	BKME160E□□330ME11D
	47	6.3×11	0.20	67	BKME160E□□470MF11D
	100	8×11.5	0.20	110	BKME160E□□101MHB5D
	220	10×12.5	0.20	195	BKME160E□□221MJC5S
	330	10×16	0.20	265	BKME160E□□331MJ16S
	470	10×20	0.20	345	BKME160E□□471MJ20S
	1,000	12.5×25	0.20	605	BKME160E□□102MK25S
	2,200	16×31.5	0.22	1,070	BKME160E□□222MLN3S
	3,300	18×35.5	0.24	1,400	BKME160E□□332MMP1S
25	10	5×11	0.20	27	BKME250E□□100ME11D
	22	6.3×11	0.20	46	BKME250E□□220MF11D
	33	6.3×11	0.20	56	BKME250E□□330MF11D
	47	6.3×11	0.20	67	BKME250E□□470MF11D
	100	8×11.5	0.20	110	BKME250E□□101MHB5D
	220	10×16	0.20	215	BKME250E□□221MJ16S
	330	12.5×20	0.20	320	BKME250E□□331MK20S
	470	12.5×20	0.20	380	BKME250E□□471MK20S
	1,000	16×25	0.20	670	BKME250E□□102ML25S
	2,200	18×35.5	0.22	1,140	BKME250E□□222MMP1S
35	4.7	5×11	0.16	21	BKME350E□□4R7ME11D
	10	5×11	0.16	30	BKME350E□□100ME11D
	22	6.3×11	0.16	51	BKME350E□□220MF11D
	33	8×11.5	0.16	72	BKME350E□□330MHB5D
	47	8×11.5	0.16	86	BKME350E□□470MHB5D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/ 105℃,120Hz)	Part No.
35	100	10×16	0.16	160	BKME350E□□101MJ16S
	220	12.5×20	0.16	290	BKME350E□□221MK20S
	330	12.5×20	0.16	350	BKME350E□□331MK20S
	470	12.5×25	0.16	465	BKME350E□□471MK25S
	1,000	16×31.5	0.16	805	BKME350E□□102MLN3S
50	1.0	5×11	0.14	10	BKME500E□□1R0ME11D
	2.2	5×11	0.14	15	BKME500E□□2R2ME11D
	3.3	5×11	0.14	18	BKME500E□□3R3ME11D
	4.7	5×11	0.14	22	BKME500E□□4R7ME11D
	10	6.3×11	0.14	37	BKME500E□□100MF11D
	22	8×11.5	0.14	63	BKME500E□□220MHB5D
	33	8×11.5	0.14	77	BKME500E□□330MHB5D
	47	10×12.5	0.14	105	BKME500E□□470MJC5S
	100	10×20	0.14	190	BKME500E□□101MJ20S
	220	12.5×25	0.14	340	BKME500E□□221MK25S
	330	16×25	0.14	460	BKME500E□□331ML25S
	470	16×31.5	0.14	590	BKME500E□□471MLN3S
63	3.3	5×11	0.12	20	BKME630E□□3R3ME11D
	4.7	6.3×11	0.12	24	BKME630E□□4R7MF11D
	10	6.3×11	0.12	40	BKME630E□□100MF11D
	22	8×11.5	0.12	68	BKME630E□□220MHB5D
	33	10×12.5	0.12	98	BKME630E□□330MJC5S
	47	10×16	0.12	130	BKME630E□□470MJ16S
	100	12.5×20	0.12	225	BKME630E□□101MK20S
	220	16×25	0.12	405	BKME630E□□221ML25S
	330	16×31.5	0.12	535	BKME630E□□331MLN3S
	470	18×35.5	0.12	680	BKME630E□□471MMP1S
80	2.2	5×11	0.12	16	BKME800E□□2R2ME11D
	3.3	6.3×11	0.12	23	BKME800E□□3R3MF11D
	4.7	6.3×11	0.12	27	BKME800E□□4R7MF11D
	10	8×11.5	0.12	46	BKME800E□□100MHB5D
	22	10×16	0.12	89	BKME800E□□220MJ16S
	33	10×16	0.12	105	BKME800E□□330MJ16S
	47	10×20	0.12	140	BKME800E□□470MJ20S
	100	12.5×25	0.12	245	BKME800E□□101MK25S
	220	16×31.5	0.12	435	BKME800E□□221MLN3S
	330	18×35.5	0.12	570	BKME800E□□331MMP1S
100	1.0	5×11	0.10	12	BKME101E□□1R0ME11D
	2.2	6.3×11	0.10	20	BKME101E□□2R2MF11D
	3.3	6.3×11	0.10	25	BKME101E□□3R3MF11D
	4.7	6.3×11	0.10	30	BKME101E□□4R7MF11D
	10	8×11.5	0.10	50	BKME101E□□100MHB5D
	22	10×16	0.10	97	BKME101E□□220MJ16S
	33	12.5×20	0.10	140	BKME101E□□330MK20S
	47	12.5×20	0.10	170	BKME101E□□470MK20S
	100	16×25	0.10	300	BKME101E□□101ML25S
	220	18×35.5	0.10	510	BKME101E□□221MMP1S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
1.0 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KZN New! Series

- Adoption of innovative high stability electrolyte
- High ripple current and long endurance
- Rated voltage range : 6.3 to 100Vdc, Capacitance range : 8.2 to 22,000μF
- Endurance with ripple current : 6,000 to 10,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

KZN
↑ Higher ripple
KZM P139

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−40 to +105℃
Rated Voltage Range	6.3 to 100Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V 63V 80V 100V tanδ (Max.) 0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.09 0.08 When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)
Low Temperature Characteristics	Z(−25℃)/Z(+20℃) 2 max. Z(−40℃)/Z(+20℃) 3 max. (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.

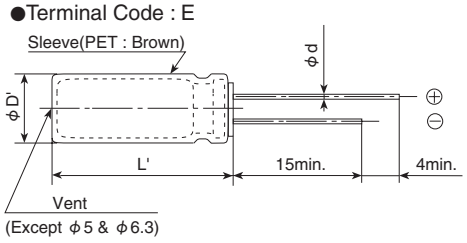
Time	Case size	φ5 & φ6.3	φ8×11.5L	φ10×12.5L	φ8×15L, 20L	φ10×16L, 20L, 25L φ12.5 to φ18
	6.3Vdc	6,000 hours	8,000 hours	9,000 hours	9,000 hours	10,000 hours
	10 to 50Vdc	7,000 hours	9,000 hours	9,000 hours	10,000 hours	10,000 hours
	63 to 100Vdc	6,000 hours	8,000 hours	9,000 hours	9,000 hours	10,000 hours

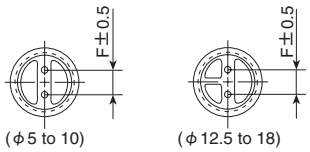
Capacitance change	≦±25% of the initial value (6.3, 10Vdc : ≦±30%)
D.F. (tanδ)	≦200% of the initial specified value
Leakage current	≦The initial specified value

Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.
Capacitance change	≦±25% of the initial value (6.3, 10Vdc : ≦±30%)
D.F. (tanδ)	≦200% of the initial specified value
Leakage current	≦The initial specified value

◆DIMENSIONS [mm]

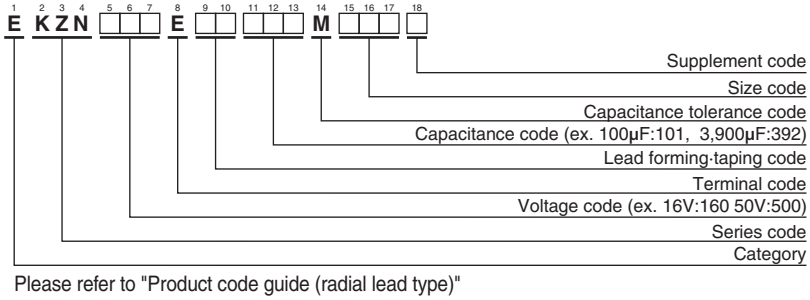
●Terminal Code : E





φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
D'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KZN New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	220	5×11	0.38	1.2	345	EKZN6R3E□□221ME11D
	470	6.3×11	0.17	0.51	540	EKZN6R3E□□471MF11D
	820	8×11.5	0.075	0.23	945	EKZN6R3E□□821MHB5D
	1,200	8×15	0.059	0.18	1,250	EKZN6R3E□□122MH15D
	1,200	10×12.5	0.053	0.16	1,330	EKZN6R3E□□122MJC5S
	1,500	8×20	0.041	0.13	1,500	EKZN6R3E□□152MH20D
	1,800	10×16	0.038	0.12	1,760	EKZN6R3E□□182MJ16S
	2,700	10×20	0.028	0.084	1,960	EKZN6R3E□□272MJ20S
	2,700	12.5×16	0.035	0.11	1,900	EKZN6R3E□□272MK16S
	3,300	10×25	0.026	0.072	2,250	EKZN6R3E□□332MJ25S
	3,900	12.5×20	0.025	0.075	2,480	EKZN6R3E□□392MK20S
	5,600	12.5×25	0.019	0.057	2,900	EKZN6R3E□□562MK25S
	6,800	12.5×30	0.018	0.054	3,450	EKZN6R3E□□682MK30S
	6,800	16×20	0.021	0.063	3,250	EKZN6R3E□□682ML20S
	8,200	12.5×35	0.016	0.048	3,570	EKZN6R3E□□822MK35S
	8,200	18×20	0.020	0.060	3,450	EKZN6R3E□□822MM20S
	10,000	16×25	0.017	0.051	3,630	EKZN6R3E□□103ML25S
	12,000	16×31.5	0.016	0.048	4,100	EKZN6R3E□□123MLN3S
	12,000	18×25	0.016	0.048	3,880	EKZN6R3E□□123MM25S
	15,000	16×35.5	0.014	0.042	4,280	EKZN6R3E□□153MLP1S
	15,000	18×31.5	0.014	0.042	4,190	EKZN6R3E□□153MMN3S
	18,000	16×40	0.013	0.039	4,580	EKZN6R3E□□183ML40S
	18,000	18×35.5	0.012	0.036	4,380	EKZN6R3E□□183MMP1S
	22,000	18×40	0.011	0.033	4,960	EKZN6R3E□□223MM40S
10	150	5×11	0.38	1.2	450	EKZN100E□□151ME11D
	330	6.3×11	0.17	0.51	700	EKZN100E□□331MF11D
	560	8×11.5	0.075	0.23	1,200	EKZN100E□□561MHB5D
	820	8×15	0.059	0.18	1,600	EKZN100E□□821MH15D
	1,000	8×20	0.041	0.13	1,960	EKZN100E□□102MH20D
	1,000	10×12.5	0.053	0.16	1,700	EKZN100E□□102MJC5S
	1,200	10×16	0.038	0.12	2,000	EKZN100E□□122MJ16S
	1,800	10×20	0.028	0.084	2,500	EKZN100E□□182MJ20S
	1,800	12.5×16	0.035	0.11	2,400	EKZN100E□□182MK16S
	2,200	10×25	0.026	0.072	2,900	EKZN100E□□222MJ25S
	2,700	12.5×20	0.025	0.075	2,600	EKZN100E□□272MK20S
	3,900	12.5×25	0.019	0.057	3,200	EKZN100E□□392MK25S
	4,700	12.5×30	0.018	0.054	3,660	EKZN100E□□472MK30S
	4,700	16×20	0.021	0.063	3,330	EKZN100E□□472ML20S
	5,600	12.5×35	0.016	0.048	4,120	EKZN100E□□562MK35S
	5,600	18×20	0.020	0.060	3,450	EKZN100E□□562MM20S
	6,800	16×25	0.017	0.051	3,810	EKZN100E□□682ML25S
	8,200	16×31.5	0.016	0.048	4,100	EKZN100E□□822MLN3S
	8,200	18×25	0.016	0.048	3,880	EKZN100E□□822MM25S
	10,000	16×35.5	0.014	0.042	4,280	EKZN100E□□103MLP1S
	10,000	18×31.5	0.014	0.042	4,190	EKZN100E□□103MMN3S
	12,000	16×40	0.013	0.039	4,580	EKZN100E□□123ML40S
	12,000	18×35.5	0.012	0.036	4,380	EKZN100E□□123MMP1S
	15,000	18×40	0.011	0.033	4,960	EKZN100E□□153MM40S
16	120	5×11	0.38	1.2	450	EKZN160E□□121ME11D
	270	6.3×11	0.17	0.51	700	EKZN160E□□271MF11D
	470	8×11.5	0.075	0.23	1,200	EKZN160E□□471MHB5D
	680	8×15	0.059	0.18	1,600	EKZN160E□□681MH15D
	680	10×12.5	0.053	0.16	1,700	EKZN160E□□681MJC5S
	820	8×20	0.041	0.13	1,960	EKZN160E□□821MH20D
	1,000	10×16	0.038	0.12	2,000	EKZN160E□□102MJ16S
	1,500	10×20	0.028	0.084	2,500	EKZN160E□□152MJ20S
	1,500	12.5×16	0.035	0.11	2,400	EKZN160E□□152MK16S
	1,800	10×25	0.026	0.072	2,900	EKZN160E□□182MJ25S
	2,200	12.5×20	0.025	0.075	2,600	EKZN160E□□222MK20S
	2,700	12.5×25	0.019	0.057	3,200	EKZN160E□□272MK25S
	3,300	12.5×30	0.018	0.054	3,660	EKZN160E□□332MK30S
	3,900	12.5×35	0.016	0.048	4,120	EKZN160E□□392MK35S
	3,900	16×20	0.021	0.063	3,330	EKZN160E□□392ML20S
	4,700	18×20	0.020	0.060	3,450	EKZN160E□□472MM20S
16	5,600	16×25	0.017	0.051	3,810	EKZN160E□□562ML25S
	6,800	16×31.5	0.016	0.048	4,100	EKZN160E□□682MLN3S
	6,800	18×25	0.016	0.048	3,880	EKZN160E□□682MM25S
	8,200	16×35.5	0.014	0.042	4,280	EKZN160E□□822MLP1S
	8,200	18×31.5	0.014	0.042	4,190	EKZN160E□□822MMN3S
	10,000	16×40	0.013	0.039	4,580	EKZN160E□□103ML40S
	10,000	18×35.5	0.012	0.036	4,380	EKZN160E□□103MMP1S
	12,000	18×40	0.011	0.033	4,960	EKZN160E□□123MM40S
25	68	5×11	0.38	1.2	450	EKZN250E□□680ME11D
	150	6.3×11	0.17	0.51	700	EKZN250E□□151MF11D
	270	8×11.5	0.075	0.23	1,200	EKZN250E□□271MHB5D
	470	8×15	0.059	0.18	1,600	EKZN250E□□471MH15D
	470	10×12.5	0.053	0.16	1,700	EKZN250E□□471MJC5S
	560	8×20	0.041	0.13	1,960	EKZN250E□□561MH20D
	680	10×16	0.038	0.12	2,000	EKZN250E□□681MJ16S
	820	10×20	0.028	0.084	2,500	EKZN250E□□821MJ20S
	1,000	12.5×16	0.035	0.11	2,400	EKZN250E□□102MK16S
	1,200	10×25	0.026	0.072	2,900	EKZN250E□□122MJ25S
	1,500	12.5×20	0.025	0.075	2,600	EKZN250E□□152MK20S
	1,800	12.5×25	0.019	0.057	3,200	EKZN250E□□182MK25S
	2,200	12.5×30	0.018	0.054	3,660	EKZN250E□□222MK30S
	2,200	16×20	0.021	0.063	3,330	EKZN250E□□222ML20S
	2,700	12.5×35	0.016	0.048	4,120	EKZN250E□□272MK35S
	3,300	16×25	0.017	0.051	3,810	EKZN250E□□332ML25S
	3,300	18×20	0.020	0.060	3,450	EKZN250E□□332MM20S
	4,700	16×31.5	0.016	0.048	4,100	EKZN250E□□472MLN3S
	4,700	18×25	0.016	0.048	3,880	EKZN250E□□472MM25S
	5,600	16×35.5	0.014	0.042	4,280	EKZN250E□□562MLP1S
	5,600	18×31.5	0.014	0.042	4,190	EKZN250E□□562MMN3S
	6,800	16×40	0.013	0.039	4,580	EKZN250E□□682ML40S
	6,800	18×35.5	0.012	0.036	4,380	EKZN250E□□682MMP1S
	8,200	18×40	0.011	0.033	4,960	EKZN250E□□822MM40S
35	47	5×11	0.38	1.2	450	EKZN350E□□470ME11D
	100	6.3×11	0.17	0.51	700	EKZN350E□□101MF11D
	180	8×11.5	0.075	0.23	1,200	EKZN350E□□181MHB5D
	220	8×15	0.059	0.18	1,600	EKZN350E□□221MH15D
	270	10×12.5	0.053	0.16	1,700	EKZN350E□□271MJC5S
	330	8×20	0.041	0.13	1,960	EKZN350E□□331MH20D
	390	10×16	0.038	0.12	2,000	EKZN350E□□391MJ16S
	470	10×20	0.028	0.084	2,500	EKZN350E□□471MJ20S
	560	12.5×16	0.035	0.11	2,400	EKZN350E□□561MK16S
	680	10×25	0.026	0.072	2,900	EKZN350E□□681MJ25S
	820	12.5×20	0.025	0.075	2,600	EKZN350E□□821MK20S
	1,200	12.5×25	0.019	0.057	3,200	EKZN350E□□122MK25S
	1,500	12.5×30	0.018	0.054	3,660	EKZN350E□□152MK30S
	1,500	16×20	0.021	0.063	3,330	EKZN350E□□152ML20S
	1,800	12.5×35	0.016	0.048	4,120	EKZN350E□□182MK35S
	1,800	16×25	0.017	0.051	3,810	EKZN350E□□182ML25S
	1,800	18×20	0.020	0.060	3,450	EKZN350E□□182MM20S
	2,700	16×31.5	0.016	0.048	4,100	EKZN350E□□272MLN3S
	2,700	18×25	0.016	0.048	3,880	EKZN350E□□272MM25S
	3,300	16×35.5	0.014	0.042	4,280	EKZN350E□□332MLP1S
	3,300	18×31.5	0.014	0.042	4,190	EKZN350E□□332MMN3S
	3,900	16×40	0.013	0.039	4,580	EKZN350E□□392ML40S
	3,900	18×35.5	0.012	0.036	4,380	EKZN350E□□392MMP1S
	4,700	18×40	0.011	0.033	4,960	EKZN350E□□472MM40S
50	27	5×11	0.40	1.3	450	EKZN500E□□270ME11D
	56	6.3×11	0.18	0.54	700	EKZN500E□□560MF11D
	100	8×11.5	0.085	0.26	1,200	EKZN500E□□101MHB5D
	120	8×15	0.065	0.20	1,600	EKZN500E□□121MH15D
	150	10×12.5	0.073	0.22	1,280	EKZN500E□□151MJC5S
	180	8×20	0.049	0.16	1,960	EKZN500E□□181MH20D
	220	10×16	0.053	0.16	1,650	EKZN500E□□221MJ16S
	330	10×20	0.038	0.12	2,060	EKZN500E□□331MJ20S

□□ : Enter the appropriate lead forming or taping code.

KZN New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
50	330	12.5×16	0.045	0.14	2,160	EKZN500E□□331MK16S
	390	10×25	0.032	0.10	2,420	EKZN500E□□391MJ25S
	470	12.5×20	0.032	0.10	2,300	EKZN500E□□471MK20S
	680	12.5×25	0.025	0.080	2,800	EKZN500E□□681MK25S
	820	12.5×30	0.023	0.074	3,370	EKZN500E□□821MK30S
	820	16×20	0.026	0.084	3,070	EKZN500E□□821ML20S
	1,000	12.5×35	0.021	0.067	3,810	EKZN500E□□102MK35S
	1,200	16×25	0.022	0.070	3,510	EKZN500E□□122ML25S
	1,200	18×20	0.025	0.075	3,120	EKZN500E□□122MM20S
	1,500	16×31.5	0.019	0.057	4,030	EKZN500E□□152MLN3S
	1,500	18×25	0.021	0.063	3,530	EKZN500E□□152MM25S
	1,800	16×35.5	0.016	0.048	4,220	EKZN500E□□182MLP1S
	2,200	16×40	0.014	0.042	4,500	EKZN500E□□222ML40S
	2,200	18×31.5	0.016	0.048	4,080	EKZN500E□□222MMN3S
	2,700	18×35.5	0.013	0.039	4,270	EKZN500E□□272MMP1S
	3,300	18×40	0.012	0.036	4,850	EKZN500E□□332MM40S
63	18	5×11	0.52	2.3	240	EKZN630E□□180ME11D
	39	6.3×11	0.24	1.1	420	EKZN630E□□390MF11D
	68	8×11.5	0.15	0.68	720	EKZN630E□□680MHB5D
	100	8×15	0.10	0.45	990	EKZN630E□□101MH15D
	120	8×20	0.077	0.35	1,200	EKZN630E□□121MH20D
	120	10×12.5	0.090	0.36	990	EKZN630E□□121MJC5S
	180	10×16	0.061	0.25	1,200	EKZN630E□□181MJ16S
	270	10×20	0.045	0.18	1,570	EKZN630E□□271MJ20S
	270	12.5×16	0.058	0.18	1,570	EKZN630E□□271MK16S
	330	10×25	0.037	0.12	1,990	EKZN630E□□331MJ25S
	390	12.5×20	0.033	0.10	1,990	EKZN630E□□391MK20S
	560	12.5×25	0.026	0.080	2,460	EKZN630E□□561MK25S
	680	12.5×30	0.024	0.075	2,760	EKZN630E□□681MK30S
	680	16×20	0.027	0.085	2,380	EKZN630E□□681ML20S
	820	12.5×35	0.022	0.068	3,040	EKZN630E□□821MK35S
	820	18×20	0.026	0.078	2,530	EKZN630E□□821MM20S
	1,000	16×25	0.024	0.072	2,890	EKZN630E□□102ML25S
	1,200	16×31.5	0.020	0.060	3,280	EKZN630E□□122MLN3S
	1,200	18×25	0.022	0.066	2,930	EKZN630E□□122MM25S
	1,500	16×35.5	0.018	0.054	3,440	EKZN630E□□152MLP1S
	1,500	18×31.5	0.018	0.054	3,380	EKZN630E□□152MMN3S
	1,800	16×40	0.016	0.048	3,690	EKZN630E□□182ML40S
	1,800	18×35.5	0.017	0.051	3,550	EKZN630E□□182MMP1S
	2,200	18×40	0.015	0.045	3,930	EKZN630E□□222MM40S
80	12	5×11	0.72	3.2	220	EKZN800E□□120ME11D
	27	6.3×11	0.34	1.5	370	EKZN800E□□270MF11D
	47	8×11.5	0.20	0.90	620	EKZN800E□□470MHB5D
	68	8×15	0.14	0.63	780	EKZN800E□□680MH15D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
80	82	8×20	0.12	0.54	1,040	EKZN800E□□820MH20D
	82	10×12.5	0.14	0.56	780	EKZN800E□□820MJC5S
	120	10×16	0.090	0.36	1,040	EKZN800E□□121MJ16S
	180	10×20	0.068	0.28	1,430	EKZN800E□□181MJ20S
	180	12.5×16	0.090	0.27	1,430	EKZN800E□□181MK16S
	220	10×25	0.055	0.22	1,620	EKZN800E□□221MJ25S
	270	12.5×20	0.048	0.15	1,750	EKZN800E□□271MK20S
	390	12.5×25	0.038	0.12	2,210	EKZN800E□□391MK25S
	470	12.5×30	0.033	0.11	2,400	EKZN800E□□471MK30S
	470	16×20	0.036	0.12	1,950	EKZN800E□□471ML20S
	560	12.5×35	0.026	0.078	2,600	EKZN800E□□561MK35S
	680	16×25	0.028	0.084	2,430	EKZN800E□□681ML25S
	680	18×20	0.032	0.096	2,270	EKZN800E□□681MM20S
	820	16×31.5	0.022	0.066	2,640	EKZN800E□□821MLN3S
	820	18×25	0.027	0.081	2,500	EKZN800E□□821MM25S
	1,000	16×35.5	0.020	0.060	2,860	EKZN800E□□102MLP1S
	1,200	16×40	0.018	0.054	3,510	EKZN800E□□122ML40S
	1,200	18×31.5	0.020	0.060	2,860	EKZN800E□□122MMN3S
	1,500	18×35.5	0.018	0.054	3,510	EKZN800E□□152MMP1S
	1,800	18×40	0.017	0.051	3,860	EKZN800E□□182MM40S
100	8.2	5×11	0.72	3.2	220	EKZN101E□□8R2ME11D
	18	6.3×11	0.34	1.5	370	EKZN101E□□180MF11D
	33	8×11.5	0.20	0.90	620	EKZN101E□□330MHB5D
	47	8×15	0.14	0.63	780	EKZN101E□□470MH15D
	56	8×20	0.12	0.54	1,040	EKZN101E□□560MH20D
	56	10×12.5	0.14	0.56	780	EKZN101E□□560MJC5S
	82	10×16	0.090	0.36	1,040	EKZN101E□□820MJ16S
	100	10×20	0.068	0.28	1,430	EKZN101E□□101MJ20S
	120	12.5×16	0.090	0.27	1,430	EKZN101E□□121MK16S
	150	10×25	0.055	0.22	1,620	EKZN101E□□151MJ25S
	180	12.5×20	0.048	0.15	1,750	EKZN101E□□181MK20S
	220	12.5×25	0.038	0.12	2,210	EKZN101E□□221MK25S
	270	12.5×30	0.033	0.11	2,400	EKZN101E□□271MK30S
	270	16×20	0.036	0.12	1,950	EKZN101E□□271ML20S
	390	12.5×35	0.026	0.078	2,600	EKZN101E□□391MK35S
	390	16×25	0.028	0.084	2,430	EKZN101E□□391ML25S
	390	18×20	0.032	0.096	2,270	EKZN101E□□391MM20S
	470	16×31.5	0.022	0.066	2,640	EKZN101E□□471MLN3S
	560	16×35.5	0.020	0.060	2,860	EKZN101E□□561MLP1S
	560	18×25	0.027	0.081	2,500	EKZN101E□□561MM25S
	680	16×40	0.018	0.054	3,510	EKZN101E□□681ML40S
	680	18×31.5	0.020	0.060	2,860	EKZN101E□□681MMN3S
	820	18×35.5	0.018	0.054	3,510	EKZN101E□□821MMP1S
	1,000	18×40	0.017	0.051	3,860	EKZN101E□□102MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
8.2 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 22,000	0.85	0.95	0.98	1.00

Note : The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KZM Series

- Long-Life version of KZH series
- Endurance with ripple current : 6,000 to 10,000 hours at 105℃
- Newly innovative electrolyte is employed to minimize ESR
- Rated voltage range : 6.3 to 50Vdc, Nominal capacitance range : 27 to 10,000μF
- Non solvent resistant type
- **RoHS Compliant**

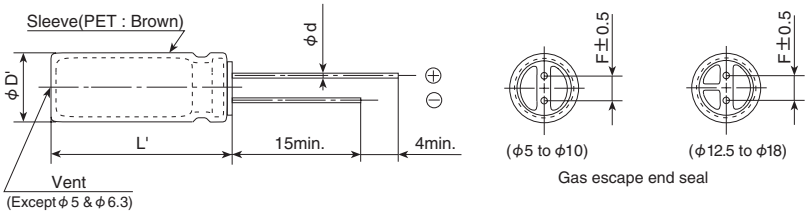
KZN P136
Higher ripple
KZM
Longer life
KZH P142

◆SPECIFICATIONS

Items	Characteristics						
Category Temperature Range	−40 to +105℃						
Rated Voltage Range	6.3 to 50Vdc						
Capacitance Tolerance	±20% (M)						(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)						(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.						(at 20℃, 120Hz)
Low Temperature Characteristics	Z(−25℃)/Z(+20℃)	2 max.					
	Z(−40℃)/Z(+20℃)	3 max.					(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.						
	Time	φ5 &φ6.3 : 6,000hours φ8 : 8,000hours φ10 to φ18 : 10,000hours					
	Capacitance change	≦±25% of the initial value (6.3, 10Vdc : ≦± 30%)					
	D.F. (tanδ)	≦200% of the initial specified value					
	Leakage current	≦The initial specified value					
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Capacitance change	≦±25% of the initial value (6.3, 10Vdc : ≦±30%)					
	D.F. (tanδ)	≦200% of the initial specified value					
	Leakage current	≦The initial specified value					

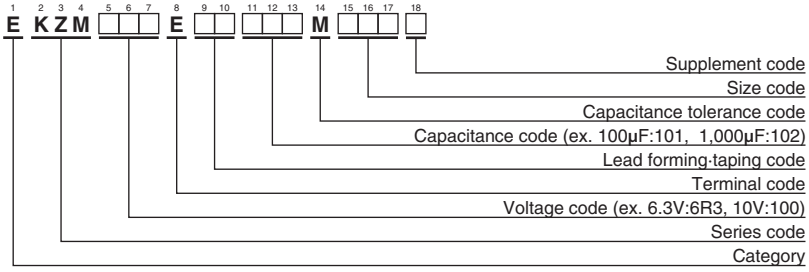
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
27 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 10,000	0.85	0.95	0.98	1.00

Note : The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KZM Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Impedance (Ωmax/100kHz)		Rated ripple current (mArms/105℃,100kHz)	Part No.
				20℃	-10℃		
6.3	220	5 ×11	0.22	0.22	0.80	345	EKZM6R3E□□221ME11D
	470	6.3 ×11	0.22	0.094	0.35	540	EKZM6R3E□□471MF11D
	820	8 ×11.5	0.22	0.056	0.19	945	EKZM6R3E□□821MHB5D
	1,200	8 ×15	0.22	0.045	0.15	1,250	EKZM6R3E□□122MH15D
	1,200	10 ×12.5	0.22	0.039	0.14	1,330	EKZM6R3E□□122MJC5S
	1,500	8 ×20	0.22	0.029	0.11	1,500	EKZM6R3E□□152MH20D
	1,800	10 ×16	0.22	0.028	0.10	1,760	EKZM6R3E□□182MJ16S
	2,200	10 ×20	0.24	0.020	0.060	1,960	EKZM6R3E□□222MJ20S
	2,700	10 ×25	0.24	0.018	0.054	2,250	EKZM6R3E□□272MJ25S
	3,900	12.5 ×20	0.26	0.017	0.043	2,480	EKZM6R3E□□392MK20S
	4,700	12.5 ×25	0.28	0.015	0.038	2,900	EKZM6R3E□□472MK25S
	5,600	12.5 ×30	0.30	0.013	0.033	3,450	EKZM6R3E□□562MK30S
	6,800	12.5 ×35	0.32	0.012	0.031	3,570	EKZM6R3E□□682MK35S
	6,800	16 ×20	0.32	0.015	0.038	3,250	EKZM6R3E□□682ML20S
	8,200	16 ×25	0.36	0.013	0.035	3,630	EKZM6R3E□□822ML25S
	10,000	18 ×25	0.40	0.012	0.031	3,650	EKZM6R3E□□103MM25S
10	150	5 ×11	0.19	0.22	0.80	345	EKZM100E□□151ME11D
	330	6.3 ×11	0.19	0.094	0.35	540	EKZM100E□□331MF11D
	680	8 ×11.5	0.19	0.056	0.19	945	EKZM100E□□681MHB5D
	1,000	8 ×15	0.19	0.045	0.15	1,250	EKZM100E□□102MH15D
	1,000	10 ×12.5	0.19	0.039	0.14	1,330	EKZM100E□□102MJC5S
	1,500	8 ×20	0.19	0.029	0.11	1,500	EKZM100E□□152MH20D
	1,500	10 ×16	0.19	0.028	0.10	1,760	EKZM100E□□152MJ16S
	1,800	10 ×20	0.19	0.020	0.060	1,960	EKZM100E□□182MJ20S
	2,200	10 ×25	0.21	0.018	0.054	2,250	EKZM100E□□222MJ25S
	3,300	12.5 ×20	0.23	0.017	0.043	2,480	EKZM100E□□332MK20S
	3,900	12.5 ×25	0.23	0.015	0.038	2,900	EKZM100E□□392MK25S
	4,700	12.5 ×30	0.25	0.013	0.033	3,450	EKZM100E□□472MK30S
	4,700	16 ×20	0.25	0.015	0.038	3,250	EKZM100E□□472ML20S
	5,600	12.5 ×35	0.27	0.012	0.031	3,570	EKZM100E□□562MK35S
	6,800	16 ×25	0.29	0.013	0.035	3,630	EKZM100E□□682ML25S
	8,200	18 ×25	0.33	0.012	0.031	3,650	EKZM100E□□822MM25S
16	100	5 ×11	0.16	0.22	0.80	345	EKZM160E□□101ME11D
	220	6.3 ×11	0.16	0.094	0.35	540	EKZM160E□□221MF11D
	470	8 ×11.5	0.16	0.056	0.19	945	EKZM160E□□471MHB5D
	680	8 ×15	0.16	0.045	0.15	1,250	EKZM160E□□681MH15D
	680	10 ×12.5	0.16	0.039	0.14	1,330	EKZM160E□□681MJC5S
	1,000	8 ×20	0.16	0.029	0.11	1,500	EKZM160E□□102MH20D
	1,000	10 ×16	0.16	0.028	0.10	1,760	EKZM160E□□102MJ16S
	1,500	10 ×20	0.16	0.020	0.060	1,960	EKZM160E□□152MJ20S
	1,800	10 ×25	0.16	0.018	0.054	2,250	EKZM160E□□182MJ25S
	2,200	12.5 ×20	0.18	0.017	0.043	2,480	EKZM160E□□222MK20S
	2,700	12.5 ×25	0.18	0.015	0.038	2,900	EKZM160E□□272MK25S
	3,300	12.5 ×30	0.20	0.013	0.033	3,450	EKZM160E□□332MK30S
	3,300	16 ×20	0.20	0.015	0.038	3,250	EKZM160E□□332ML20S
	3,900	12.5 ×35	0.20	0.012	0.031	3,570	EKZM160E□□392MK35S
	4,700	16 ×25	0.22	0.013	0.035	3,630	EKZM160E□□472ML25S
	5,600	18 ×25	0.24	0.012	0.031	3,650	EKZM160E□□562MM25S

□□ : Enter the appropriate lead forming or taping code.

KZM Series

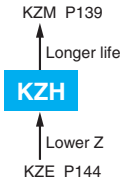
◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Impedance (Ωmax/100kHz)		Rated ripple current (mArms/105℃,100kHz)	Part No.
				20℃	-10℃		
25	68	5 × 11	0.14	0.22	0.80	345	EKZM250E□□680ME11D
	150	6.3 × 11	0.14	0.094	0.35	540	EKZM250E□□151MF11D
	330	8 × 11.5	0.14	0.056	0.19	945	EKZM250E□□331MHB5D
	390	8 × 15	0.14	0.045	0.15	1,250	EKZM250E□□391MH15D
	470	10 × 12.5	0.14	0.039	0.14	1,330	EKZM250E□□471MJC5S
	560	8 × 20	0.14	0.029	0.11	1,500	EKZM250E□□561MH20D
	680	10 × 16	0.14	0.028	0.10	1,760	EKZM250E□□681MJ16S
	820	10 × 20	0.14	0.020	0.060	1,960	EKZM250E□□821MJ20S
	1,000	10 × 25	0.14	0.018	0.054	2,250	EKZM250E□□102MJ25S
	1,500	12.5 × 20	0.14	0.017	0.043	2,480	EKZM250E□□152MK20S
	1,800	12.5 × 25	0.14	0.015	0.038	2,900	EKZM250E□□182MK25S
	2,200	12.5 × 30	0.16	0.013	0.033	3,450	EKZM250E□□222MK30S
	2,200	16 × 20	0.16	0.015	0.038	3,250	EKZM250E□□222ML20S
	2,700	12.5 × 35	0.16	0.012	0.031	3,570	EKZM250E□□272MK35S
	3,300	16 × 25	0.18	0.013	0.035	3,630	EKZM250E□□332ML25S
	3,900	18 × 25	0.18	0.012	0.031	3,650	EKZM250E□□392MM25S
35	47	5 ×11	0.12	0.22	0.80	345	EKZM350E□□470ME11D
	100	6.3 × 11	0.12	0.094	0.35	540	EKZM350E□□101MF11D
	220	8 × 11.5	0.12	0.056	0.19	945	EKZM350E□□221MHB5D
	270	8 ×15	0.12	0.045	0.15	1,250	EKZM350E□□271MH15D
	330	10 × 12.5	0.12	0.039	0.14	1,330	EKZM350E□□331MJC5S
	390	8 × 20	0.12	0.029	0.11	1,500	EKZM350E□□391MH20D
	470	10 × 16	0.12	0.028	0.10	1,760	EKZM350E□□471MJ16S
	560	10 × 20	0.12	0.020	0.060	1,960	EKZM350E□□561MJ20S
	680	10 × 25	0.12	0.018	0.054	2,250	EKZM350E□□681MJ25S
	1,000	12.5 × 20	0.12	0.017	0.043	2,480	EKZM350E□□102MK20S
	1,200	12.5 × 25	0.12	0.015	0.038	2,900	EKZM350E□□122MK25S
	1,500	12.5 × 30	0.12	0.013	0.033	3,450	EKZM350E□□152MK30S
	1,500	16 × 20	0.12	0.015	0.038	3,250	EKZM350E□□152ML20S
	1,800	12.5 × 35	0.12	0.012	0.031	3,570	EKZM350E□□182MK35S
	2,200	16 × 25	0.14	0.013	0.035	3,630	EKZM350E□□222ML25S
	2,700	18 × 25	0.14	0.012	0.031	3,650	EKZM350E□□272MM25S
50	27	5 × 11	0.10	0.34	1.18	238	EKZM500E□□270ME11D
	56	6.3 × 11	0.10	0.14	0.50	385	EKZM500E□□560MF11D
	100	8 × 11.5	0.10	0.074	0.22	724	EKZM500E□□101MHB5D
	120	8 × 15	0.10	0.061	0.18	950	EKZM500E□□121MH15D
	150	10 × 12.5	0.10	0.061	0.18	979	EKZM500E□□151MJC5S
	180	8 × 20	0.10	0.046	0.14	1,190	EKZM500E□□181MH20D
	220	10 × 16	0.10	0.042	0.12	1,370	EKZM500E□□221MJ16S
	270	10 × 20	0.10	0.030	0.090	1,580	EKZM500E□□271MJ20S
	330	10 × 25	0.10	0.028	0.085	1,870	EKZM500E□□331MJ25S
	470	12.5 × 20	0.10	0.027	0.068	2,050	EKZM500E□□471MK20S
	560	12.5 × 25	0.10	0.023	0.059	2,410	EKZM500E□□561MK25S
	680	12.5 × 30	0.10	0.021	0.052	2,860	EKZM500E□□681MK30S
	820	12.5 × 35	0.10	0.019	0.051	2,960	EKZM500E□□821MK35S
	820	16 × 20	0.10	0.023	0.059	2,730	EKZM500E□□821ML20S
	1,000	16 × 25	0.10	0.021	0.056	3,010	EKZM500E□□102ML25S
	1,500	18 × 25	0.10	0.019	0.051	3,290	EKZM500E□□152MM25S

□□ : Enter the appropriate lead forming or taping code.

KZH Series

- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current: 5,000 to 6,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

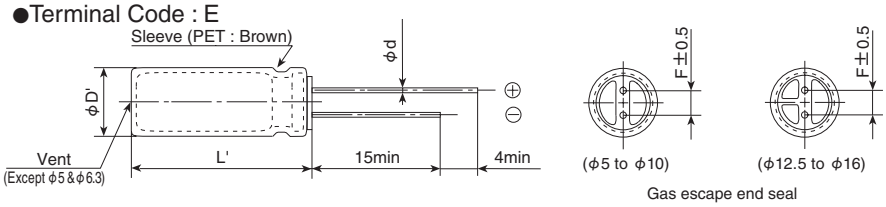


◆SPECIFICATIONS

Items	Characteristics					
Category Temperature Range	−40 to +105℃					
Rated Voltage Range	6.3 to 35Vdc					
Capacitance Tolerance	±20% (M)					(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)					(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.					(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Z (-25℃) / Z (+20℃)	2max.				
	Z (-40℃) / Z (+20℃)	3max.				
						(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage)for the specified period of time at 105℃.					
	Time	φ5 & φ6.3 : 5,000hours φ8 to φ16 : 6,000hours				
	Capacitance change	≦±25% of the initial value (6.3, 10Vdc :≦±30%)				
	D.F. (tanδ)	≦200% of the initial specified value				
	Leakage current	≦The initial specified value				
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.					
	Capacitance change	≦±25% of the initial value (6.3, 10Vdc :≦±30%)				
	D.F. (tanδ)	≦200% of the initial specified value				
	Leakage current	≦The initial specified value				

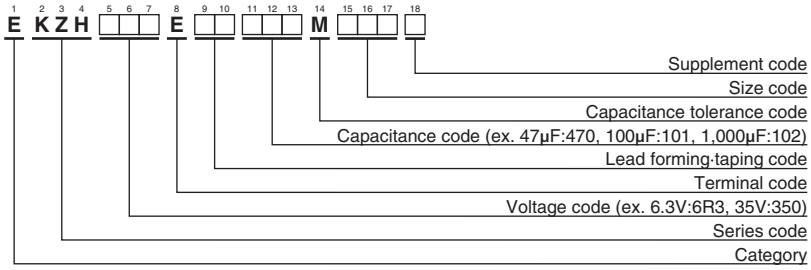
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
φD'	φD+0.5max.					
L'	L+1.5max.					

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KZH Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	220	5×11	0.24	0.80	330	EKZH6R3E□□221ME11D
	470	6.3×11	0.11	0.35	500	EKZH6R3E□□471MF11D
	820	8×11.5	0.062	0.19	900	EKZH6R3E□□821MHB5D
	1,200	8×15	0.048	0.15	1,210	EKZH6R3E□□122MH15D
	1,200	10×12.5	0.045	0.14	1,240	EKZH6R3E□□122MJC5S
	1,500	8×20	0.033	0.11	1,410	EKZH6R3E□□152MH20D
	1,800	10×16	0.032	0.10	1,650	EKZH6R3E□□182MJ16S
	2,200	10×20	0.020	0.060	1,960	EKZH6R3E□□222MJ20S
	2,700	10×25	0.018	0.054	2,250	EKZH6R3E□□272MJ25S
	3,900	12.5×20	0.017	0.043	2,480	EKZH6R3E□□392MK20S
	4,700	12.5×25	0.015	0.038	2,900	EKZH6R3E□□472MK25S
	5,600	12.5×30	0.013	0.033	3,450	EKZH6R3E□□562MK30S
	6,800	12.5×35	0.012	0.031	3,570	EKZH6R3E□□682MK35S
	6,800	16×20	0.015	0.038	3,250	EKZH6R3E□□682ML20S
	8,200	16×25	0.013	0.035	3,630	EKZH6R3E□□822ML25S
10	150	5×11	0.24	0.80	330	EKZH100E□□151ME11D
	330	6.3×11	0.11	0.35	500	EKZH100E□□331MF11D
	680	8×11.5	0.062	0.19	900	EKZH100E□□681MHB5D
	1,000	8×15	0.048	0.15	1,210	EKZH100E□□102MH15D
	1,000	10×12.5	0.045	0.14	1,240	EKZH100E□□102MJC5S
	1,500	8×20	0.033	0.11	1,410	EKZH100E□□152MH20D
	1,500	10×16	0.032	0.10	1,650	EKZH100E□□152MJ16S
	1,800	10×20	0.020	0.060	1,960	EKZH100E□□182MJ20S
	2,200	10×25	0.018	0.054	2,250	EKZH100E□□222MJ25S
	3,300	12.5×20	0.017	0.043	2,480	EKZH100E□□332MK20S
	3,900	12.5×25	0.015	0.038	2,900	EKZH100E□□392MK25S
	4,700	12.5×30	0.013	0.033	3,450	EKZH100E□□472MK30S
	4,700	16×20	0.015	0.038	3,250	EKZH100E□□472ML20S
	5,600	12.5×35	0.012	0.031	3,570	EKZH100E□□562MK35S
	6,800	16×25	0.013	0.035	3,630	EKZH100E□□682ML25S
16	100	5×11	0.24	0.80	330	EKZH160E□□101ME11D
	220	6.3×11	0.11	0.35	500	EKZH160E□□221MF11D
	470	8×11.5	0.062	0.19	900	EKZH160E□□471MHB5D
	680	8×15	0.048	0.15	1,210	EKZH160E□□681MH15D
	680	10×12.5	0.045	0.14	1,240	EKZH160E□□681MJC5S
	1,000	8×20	0.033	0.11	1,410	EKZH160E□□102MH20D
	1,000	10×16	0.032	0.10	1,650	EKZH160E□□102MJ16S
	1,500	10×20	0.020	0.06	1,960	EKZH160E□□152MJ20S
16	1,800	10×25	0.018	0.054	2,250	EKZH160E□□182MJ25S
	2,200	12.5×20	0.017	0.043	2,480	EKZH160E□□222MK20S
	2,700	12.5×25	0.015	0.038	2,900	EKZH160E□□272MK25S
	3,300	12.5×30	0.013	0.033	3,450	EKZH160E□□332MK30S
	3,300	16×20	0.015	0.038	3,250	EKZH160E□□332ML20S
	3,900	12.5×35	0.012	0.031	3,570	EKZH160E□□392MK35S
	4,700	16×25	0.013	0.035	3,630	EKZH160E□□472ML25S
25	68	5×11	0.24	0.80	330	EKZH250E□□680ME11D
	150	6.3×11	0.11	0.35	500	EKZH250E□□151MF11D
	330	8×11.5	0.062	0.19	900	EKZH250E□□331MHB5D
	390	8×15	0.048	0.15	1,210	EKZH250E□□391MH15D
	470	10×12.5	0.045	0.14	1,240	EKZH250E□□471MJC5S
	560	8×20	0.033	0.11	1,410	EKZH250E□□561MH20D
	680	10×16	0.032	0.10	1,650	EKZH250E□□681MJ16S
	820	10×20	0.020	0.060	1,960	EKZH250E□□821MJ20S
	1,000	10×25	0.018	0.054	2,250	EKZH250E□□102MJ25S
	1,500	12.5×20	0.017	0.043	2,480	EKZH250E□□152MK20S
	1,800	12.5×25	0.015	0.038	2,900	EKZH250E□□182MK25S
	2,200	12.5×30	0.013	0.033	3,450	EKZH250E□□222MK30S
	2,200	16×20	0.015	0.038	3,250	EKZH250E□□222ML20S
	2,700	12.5×35	0.012	0.031	3,570	EKZH250E□□272MK35S
	3,300	16×25	0.013	0.035	3,630	EKZH250E□□332ML25S
35	47	5×11	0.24	0.80	330	EKZH350E□□470ME11D
	100	6.3×11	0.11	0.35	500	EKZH350E□□101MF11D
	220	8×11.5	0.062	0.19	900	EKZH350E□□221MHB5D
	270	8×15	0.048	0.15	1,210	EKZH350E□□271MH15D
	330	10×12.5	0.045	0.14	1,240	EKZH350E□□331MJC5S
	390	8×20	0.033	0.11	1,410	EKZH350E□□391MH20D
	470	10×16	0.032	0.10	1,650	EKZH350E□□471MJ16S
	560	10×20	0.020	0.060	1,960	EKZH350E□□561MJ20S
	680	10×25	0.018	0.054	2,250	EKZH350E□□681MJ25S
	1,000	12.5×20	0.017	0.043	2,480	EKZH350E□□102MK20S
	1,200	12.5×25	0.015	0.038	2,900	EKZH350E□□122MK25S
	1,500	12.5×30	0.013	0.033	3,450	EKZH350E□□152MK30S
	1,500	16×20	0.015	0.038	3,250	EKZH350E□□152ML20S
	1,800	12.5×35	0.012	0.031	3,570	EKZH350E□□182MK35S
	2,200	16×25	0.013	0.035	3,630	EKZH350E□□222ML25S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency (Hz)	120	1k	10k	100k
0.47 to 150	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 8,200	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KZE Series

- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current: 1,000 to 5,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

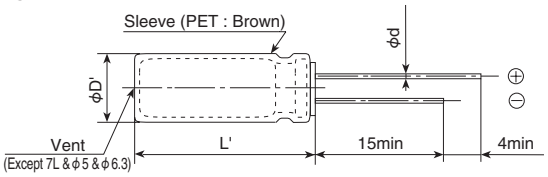
KZH P142
Lower Z
KZE
Lower Z
KY P153

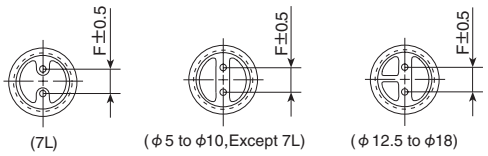
◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−40 to +105℃
Rated Voltage Range	6.3 to 100Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V 63V 80V 100V tanδ (Max.) 0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.09 0.08 When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Z (-25℃) / Z (+20℃) 2max. Z (-40℃) / Z (+20℃) 3max. (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃. Time: 7L : 1,000hours φ5 & φ6.3 : 2,000hours φ8 : 3,000hours φ10 : 4,000hours φ12.5 to φ18 : 5,000hours Capacitance change: ≦±25% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. Capacitance change: ≦±25% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value

◆DIMENSIONS [mm]

●Terminal Code : E

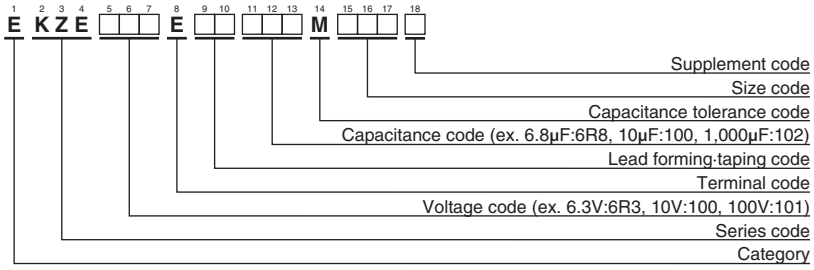




Gas escape end seal

φD		5	6.3	8	10, 12.5	16, 18
φd	7L	0.45	0.45	0.45	—	—
	11L～	0.5	0.5	0.6	0.6	0.8
F		2.0	2.5	3.5	5.0	7.5
φD'		φD+0.5max.				
L'		L+1.5max.(7L : L+1.0max.)				

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KZE Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max/100kHz)		Rated ripple current (mArms/105℃, 100kHz)	Part No.
			20℃	-10℃		
6.3	68	5×7	0.43	1.3	210	EKZE6R3E□□680ME07D
	150	5×11	0.30	1.0	250	EKZE6R3E□□151ME11D
	150	6.3×7	0.23	0.69	300	EKZE6R3E□□151MF07D
	220	8×7	0.15	0.45	380	EKZE6R3E□□221MH07D
	330	6.3×11	0.13	0.41	405	EKZE6R3E□□331MF11D
	560	8×11.5	0.072	0.22	760	EKZE6R3E□□561MHB5D
	820	8×15	0.056	0.17	995	EKZE6R3E□□821MH15D
	1,000	10×12.5	0.053	0.16	1,030	EKZE6R3E□□102MJC5S
	1,200	8×20	0.041	0.13	1,250	EKZE6R3E□□122MH20D
	1,200	10×16	0.038	0.12	1,430	EKZE6R3E□□122MJ16S
	1,500	10×20	0.023	0.069	1,820	EKZE6R3E□□152MJ20S
	2,200	10×25	0.022	0.066	2,150	EKZE6R3E□□222MJ25S
	3,300	12.5×20	0.021	0.053	2,360	EKZE6R3E□□332MK20S
	3,900	12.5×25	0.018	0.045	2,770	EKZE6R3E□□392MK25S
	4,700	12.5×30	0.016	0.041	3,290	EKZE6R3E□□472MK30S
	5,600	12.5×35	0.015	0.039	3,400	EKZE6R3E□□562MK35S
	5,600	16×20	0.018	0.045	3,140	EKZE6R3E□□562ML20S
	6,800	16×25	0.016	0.043	3,460	EKZE6R3E□□682ML25S
10	56	5×7	0.44	1.4	210	EKZE100E□□560ME07D
	100	5×11	0.30	1.0	250	EKZE100E□□101ME11D
	120	6.3×7	0.23	0.69	300	EKZE100E□□121MF07D
	180	8×7	0.15	0.45	380	EKZE100E□□181MH07D
	220	6.3×11	0.13	0.41	405	EKZE100E□□221MF11D
	470	8×11.5	0.072	0.22	760	EKZE100E□□471MHB5D
	680	8×15	0.056	0.17	995	EKZE100E□□681MH15D
	680	10×12.5	0.053	0.16	1,030	EKZE100E□□681MJC5S
	1,000	8×20	0.041	0.13	1,250	EKZE100E□□102MH20D
	1,000	10×16	0.038	0.12	1,430	EKZE100E□□102MJ16S
	1,200	10×20	0.023	0.069	1,820	EKZE100E□□122MJ20S
	1,500	10×25	0.022	0.066	2,150	EKZE100E□□152MJ25S
	2,200	12.5×20	0.021	0.053	2,360	EKZE100E□□222MK20S
	3,300	12.5×25	0.018	0.045	2,770	EKZE100E□□332MK25S
	3,900	12.5×30	0.016	0.041	3,290	EKZE100E□□392MK30S
	3,900	16×20	0.018	0.045	3,140	EKZE100E□□392ML20S
	4,700	12.5×35	0.015	0.039	3,400	EKZE100E□□472MK35S
	5,600	16×25	0.016	0.043	3,460	EKZE100E□□562ML25S
16	33	5×7	0.45	1.4	210	EKZE160E□□330ME07D
	56	5×11	0.30	1.0	250	EKZE160E□□560ME11D
	68	6.3×7	0.24	0.72	300	EKZE160E□□680MF07D
	120	6.3×11	0.13	0.41	405	EKZE160E□□121MF11D
	120	8×7	0.15	0.45	380	EKZE160E□□121MH07D
	330	8×11.5	0.072	0.22	760	EKZE160E□□331MHB5D
	470	8×15	0.056	0.17	995	EKZE160E□□471MH15D
	470	10×12.5	0.053	0.16	1,030	EKZE160E□□471MJC5S
	680	8×20	0.041	0.13	1,250	EKZE160E□□681MH20D
	680	10×16	0.038	0.12	1,430	EKZE160E□□681MJ16S
	1,000	10×20	0.023	0.069	1,820	EKZE160E□□102MJ20S
	1,200	10×25	0.022	0.066	2,150	EKZE160E□□122MJ25S
	1,500	12.5×20	0.021	0.053	2,360	EKZE160E□□152MK20S
	2,200	12.5×25	0.018	0.045	2,770	EKZE160E□□222MK25S
	2,700	12.5×30	0.016	0.041	3,290	EKZE160E□□272MK30S
	2,700	16×20	0.018	0.045	3,140	EKZE160E□□272ML20S
	3,300	12.5×35	0.015	0.039	3,400	EKZE160E□□332MK35S
	3,900	16×25	0.016	0.043	3,460	EKZE160E□□392ML25S
25	27	5×7	0.46	1.4	210	EKZE250E□□270ME07D
	47	5×11	0.30	1.0	250	EKZE250E□□470ME11D
	56	6.3×7	0.24	0.72	300	EKZE250E□□560MF07D
	100	6.3×11	0.13	0.41	405	EKZE250E□□101MF11D
	100	8×7	0.15	0.45	380	EKZE250E□□101MH07D
	220	8×11.5	0.072	0.22	760	EKZE250E□□221MHB5D
	330	8×15	0.056	0.17	995	EKZE250E□□331MH15D
	330	10×12.5	0.053	0.16	1,030	EKZE250E□□331MJC5S
	470	8×20	0.041	0.13	1,250	EKZE250E□□471MH20D
	470	10×16	0.038	0.12	1,430	EKZE250E□□471MJ16S
	680	10×20	0.023	0.069	1,820	EKZE250E□□681MJ20S
	820	10×25	0.022	0.066	2,150	EKZE250E□□821MJ25S
	1,000	12.5×20	0.021	0.053	2,360	EKZE250E□□102MK20S
	1,500	12.5×25	0.018	0.045	2,770	EKZE250E□□152MK25S
	1,800	12.5×30	0.016	0.041	3,290	EKZE250E□□182MK30S
	1,800	16×20	0.018	0.045	3,140	EKZE250E□□182ML20S
	2,200	12.5×35	0.015	0.039	3,400	EKZE250E□□222MK35S
	2,700	16×25	0.016	0.043	3,460	EKZE250E□□272ML25S
35	18	5×7	0.47	1.5	210	EKZE350E□□180ME07D
	33	5×11	0.30	1.0	250	EKZE350E□□330ME11D
	39	6.3×7	0.25	0.75	300	EKZE350E□□390MF07D
	56	6.3×11	0.13	0.41	405	EKZE350E□□560MF11D
	56	8×7	0.16	0.48	380	EKZE350E□□560MH07D
	150	8×11.5	0.072	0.22	760	EKZE350E□□151MHB5D
	220	8×15	0.056	0.17	995	EKZE350E□□221MH15D
	220	10×12.5	0.053	0.16	1,030	EKZE350E□□221MJC5S
	270	8×20	0.041	0.13	1,250	EKZE350E□□271MH20D
	330	10×16	0.038	0.12	1,430	EKZE350E□□331MJ16S
	470	10×20	0.023	0.069	1,820	EKZE350E□□471MJ20S
	560	10×25	0.022	0.066	2,150	EKZE350E□□561MJ25S
	680	12.5×20	0.021	0.053	2,360	EKZE350E□□681MK20S
	1,000	12.5×25	0.018	0.045	2,770	EKZE350E□□102MK25S
	1,200	12.5×30	0.016	0.041	3,290	EKZE350E□□122MK30S
	1,200	16×20	0.018	0.045	3,140	EKZE350E□□122ML20S
	1,500	12.5×35	0.015	0.039	3,400	EKZE350E□□152MK35S
	1,800	16×25	0.016	0.043	3,460	EKZE350E□□182ML25S
50	10	5×7	0.50	1.5	210	EKZE500E□□100ME07D
	22	5×11	0.34	1.18	238	EKZE500E□□220ME11D
	22	6.3×7	0.26	0.78	300	EKZE500E□□220MF07D
	33	8×7	0.17	0.51	380	EKZE500E□□330MH07D
	56	6.3×11	0.14	0.50	385	EKZE500E□□560MF11D
	100	8×11.5	0.074	0.22	724	EKZE500E□□101MHB5D
	120	8×15	0.061	0.18	950	EKZE500E□□121MH15D
	150	10×12.5	0.061	0.18	979	EKZE500E□□151MJC5S
	180	8×20	0.046	0.14	1,190	EKZE500E□□181MH20D
	220	10×16	0.042	0.12	1,370	EKZE500E□□221MJ16S
	270	10×20	0.030	0.090	1,580	EKZE500E□□271MJ20S
	330	10×25	0.028	0.085	1,870	EKZE500E□□331MJ25S
	470	12.5×20	0.027	0.068	2,050	EKZE500E□□471MK20S
	560	12.5×25	0.023	0.059	2,410	EKZE500E□□561MK25S
	680	12.5×30	0.021	0.052	2,860	EKZE500E□□681MK30S
	820	12.5×35	0.019	0.051	2,960	EKZE500E□□821MK35S
	820	16×20	0.023	0.059	2,730	EKZE500E□□821ML20S
	1,000	16×25	0.021	0.056	3,010	EKZE500E□□102ML25S
63	15	5×11	0.88	3.5	165	EKZE630E□□150ME11D
	33	6.3×11	0.35	1.4	265	EKZE630E□□330MF11D
	56	8×11.5	0.22	0.88	500	EKZE630E□□560MHB5D
	82	8×15	0.16	0.64	665	EKZE630E□□820MH15D
	82	10×12.5	0.11	0.44	690	EKZE630E□□820MJC5S
	120	8×20	0.12	0.48	820	EKZE630E□□121MH20D
	120	10×16	0.076	0.31	950	EKZE630E□□121MJ16S
	180	10×20	0.056	0.23	1,150	EKZE630E□□181MJ20S
	180	12.5×16	0.072	0.29	1,150	EKZE630E□□181MK16S
	220	10×25	0.046	0.19	1,350	EKZE630E□□221MJ25S
	270	12.5×20	0.041	0.13	1,500	EKZE630E□□271MK20S
	390	12.5×25	0.031	0.093	1,900	EKZE630E□□391MK25S
	470	12.5×30	0.028	0.084	2,300	EKZE630E□□471MK30S
	470	16×20	0.032	0.096	2,000	EKZE630E□□471ML20S
	560	12.5×35	0.024	0.072	2,500	EKZE630E□□561MK35S
	680	12.5×40	0.021	0.063	2,800	EKZE630E□□681MK40S
	680	16×25	0.025	0.075	2,600	EKZE630E□□681ML25S
	680	18×20	0.030	0.090	2,500	EKZE630E□□681MM20S
	820	16×31.5	0.021	0.063	2,850	EKZE630E□□821MLN3S
	820	18×25	0.024	0.072	2,800	EKZE630E□□821MM25S
	1,000	16×35.5	0.019	0.057	2,900	EKZE630E□□102MLP1S
	1,200	16×40	0.018	0.054	3,400	EKZE630E□□122ML40S

□□ : Enter the appropriate lead forming or taping code.

KZE Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
63	1,200	18×31.5	0.020	0.060	3,300	EKZE630E□□122MMN3S
	1,500	18×35.5	0.018	0.054	3,400	EKZE630E□□152MMP1S
	1,800	18×40	0.017	0.051	3,500	EKZE630E□□182MM40S
80	68	10×12.5	0.17	0.66	480	EKZE800E□□680MJC5S
	100	10×16	0.11	0.47	600	EKZE800E□□101MJ16S
	120	10×20	0.084	0.34	800	EKZE800E□□121MJ20S
	150	10×25	0.069	0.28	900	EKZE800E□□151MJ25S
	150	12.5×16	0.11	0.34	750	EKZE800E□□151MK16S
	220	12.5×20	0.062	0.18	1,100	EKZE800E□□221MK20S
	330	12.5×25	0.047	0.14	1,250	EKZE800E□□331MK25S
	330	16×20	0.048	0.15	1,350	EKZE800E□□331ML20S
	390	12.5×30	0.042	0.13	1,500	EKZE800E□□391MK30S
	470	12.5×35	0.036	0.11	1,650	EKZE800E□□471MK35S
	470	16×25	0.038	0.12	1,700	EKZE800E□□471ML25S
	470	18×20	0.045	0.14	1,500	EKZE800E□□471MM20S
	560	12.5×40	0.032	0.095	1,800	EKZE800E□□561MK40S
	680	16×31.5	0.032	0.095	1,850	EKZE800E□□681MLN3S
	680	18×25	0.036	0.11	1,750	EKZE800E□□681MM25S
	820	16×35.5	0.029	0.086	2,000	EKZE800E□□821MLP1S
	820	18×31.5	0.030	0.090	1,900	EKZE800E□□821MMN3S
	1,000	16×40	0.027	0.081	2,200	EKZE800E□□102ML40S
	1,000	18×35.5	0.027	0.081	2,200	EKZE800E□□102MMP1S
	1,200	18×40	0.026	0.077	2,700	EKZE800E□□122MM40S

□□ : Enter the appropriate lead forming or taping code.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
100	6.8	5×11	1.4	5.6	125	EKZE101E□□6R8ME11D
	15	6.3×11	0.57	2.3	205	EKZE101E□□150MF11D
	27	8×11.5	0.36	1.4	355	EKZE101E□□270MHB5D
	39	8×15	0.25	1.0	450	EKZE101E□□390MH15D
	47	10×12.5	0.17	0.66	480	EKZE101E□□470MJC5S
	56	8×20	0.19	0.76	565	EKZE101E□□560MH20D
	68	10×16	0.11	0.47	600	EKZE101E□□680MJ16S
	82	10×20	0.084	0.34	800	EKZE101E□□820MJ20S
	100	12.5×16	0.11	0.34	750	EKZE101E□□101MK16S
	120	10×25	0.069	0.28	900	EKZE101E□□121MJ25S
	150	12.5×20	0.062	0.18	1,100	EKZE101E□□151MK20S
	220	12.5×25	0.047	0.14	1,250	EKZE101E□□221MK25S
	220	16×20	0.048	0.15	1,350	EKZE101E□□221ML20S
	270	12.5×30	0.042	0.13	1,500	EKZE101E□□271MK30S
	330	12.5×35	0.036	0.11	1,650	EKZE101E□□331MK35S
	330	16×25	0.038	0.12	1,700	EKZE101E□□331ML25S
	330	18×20	0.045	0.14	1,500	EKZE101E□□331MM20S
	390	12.5×40	0.032	0.095	1,800	EKZE101E□□391MK40S
	470	16×31.5	0.032	0.095	1,850	EKZE101E□□471MLN3S
	470	18×25	0.036	0.11	1,750	EKZE101E□□471MM25S
	560	16×35.5	0.029	0.086	2,000	EKZE101E□□561MLP1S
	560	18×31.5	0.030	0.090	1,900	EKZE101E□□561MMN3S
	680	16×40	0.027	0.081	2,200	EKZE101E□□681ML40S
	680	18×35.5	0.027	0.081	2,200	EKZE101E□□681MMP1S
	820	18×40	0.026	0.077	2,700	EKZE101E□□821MM40S

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

7L

Capacitance(μF) \ Frequency (Hz)	120	1k	10k	100k
10 to 33	0.42	0.70	0.90	1.00
39 to 220	0.50	0.73	0.92	1.00

11L to 40L

Capacitance(μF) \ Frequency (Hz)	120	1k	10k	100k
6.8 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KYB Series New!

- Low impedance, high ripple and long life from KYA series
- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current : 4,000 to 10,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

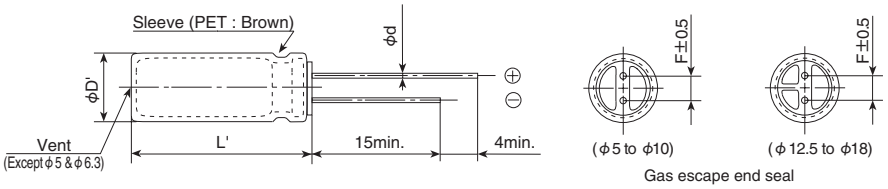
KYB
↑ Lower Z
KYA P150

◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−40 to +105℃									
Rated Voltage Range	6.3 to 100Vdc									
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)									
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)									
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)									
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(−40℃)/Z(+20℃)	8	6	4	3	3	3	3	3	3
	(at 120Hz)									
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.									
	Rated Voltage(Vdc)	6.3 to 10Vdc					16 to 100Vdc			
	Time	φ5: 4,000hours φ6.3 & 8: 6,000hours φ10 to 18: 8,000hours					φ5: 5,000hours φ6.3 & 8: 7,000hours φ10 to 18: 10,000hours			
	Capacitance change	≦±30% of the initial value					≦±25% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value					≦200% of the initial specified value			
	Leakage current	≦The initial specified value					≦The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.									
	Capacitance change	≦±25% of the initial value								
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								

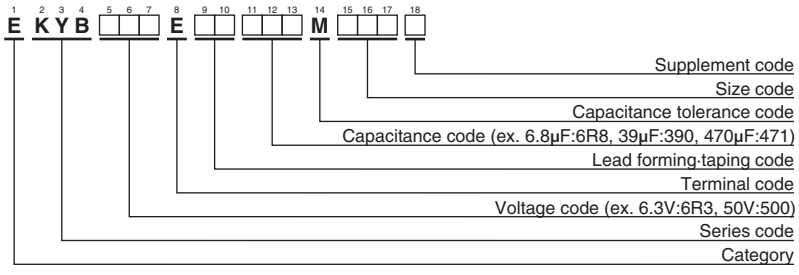
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KYB New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	180	5×11	0.29	1.2	340	EKYB6R3E□□181ME11D
	390	6.3×11	0.15	0.60	540	EKYB6R3E□□391MF11D
	820	8×11.5	0.087	0.35	840	EKYB6R3E□□821MHB5D
	1,200	8×15	0.069	0.28	1,050	EKYB6R3E□□122MH15D
	1,200	10×12.5	0.064	0.26	1,050	EKYB6R3E□□122MJC5S
	1,500	8×20	0.060	0.24	1,210	EKYB6R3E□□152MH20D
	1,800	10×16	0.049	0.20	1,400	EKYB6R3E□□182MJ16S
	2,200	10×20	0.037	0.15	1,650	EKYB6R3E□□222MJ20S
	2,700	10×25	0.031	0.13	1,910	EKYB6R3E□□272MJ25S
	3,300	10×30	0.027	0.11	2,230	EKYB6R3E□□332MJ30S
	3,900	12.5×20	0.027	0.11	2,230	EKYB6R3E□□392MK20S
	4,700	12.5×25	0.024	0.096	2,530	EKYB6R3E□□472MK25S
	6,800	12.5×30	0.021	0.084	2,860	EKYB6R3E□□682MK30S
	6,800	16×20	0.025	0.10	2,610	EKYB6R3E□□682ML20S
	8,200	12.5×35	0.018	0.072	3,140	EKYB6R3E□□822MK35S
	8,200	18×20	0.021	0.084	3,000	EKYB6R3E□□822MM20S
	10,000	12.5×40	0.017	0.068	3,640	EKYB6R3E□□103MK40S
	10,000	16×25	0.020	0.080	3,140	EKYB6R3E□□103ML25S
	12,000	16×31.5	0.016	0.064	3,610	EKYB6R3E□□123MLN3S
	12,000	18×25	0.017	0.068	3,530	EKYB6R3E□□123MM25S
	15,000	16×35.5	0.014	0.056	4,080	EKYB6R3E□□153MLP1S
	15,000	18×31.5	0.014	0.056	4,220	EKYB6R3E□□153MMN3S
	18,000	16×40	0.013	0.052	4,220	EKYB6R3E□□183ML40S
	18,000	18×35.5	0.012	0.048	4,280	EKYB6R3E□□183MMP1S
	22,000	18×40	0.011	0.044	4,700	EKYB6R3E□□223MM40S
10	120	5×11	0.29	1.2	340	EKYB100E□□121ME11D
	330	6.3×11	0.15	0.60	540	EKYB100E□□331MF11D
	560	8×11.5	0.087	0.35	840	EKYB100E□□561MHB5D
	820	8×15	0.069	0.28	1,050	EKYB100E□□821MH15D
	1,000	8×20	0.060	0.24	1,210	EKYB100E□□102MH20D
	1,000	10×12.5	0.064	0.26	1,050	EKYB100E□□102MJC5S
	1,200	10×16	0.049	0.20	1,400	EKYB100E□□122MJ16S
	1,800	10×20	0.037	0.15	1,650	EKYB100E□□182MJ20S
	2,200	10×25	0.031	0.13	1,910	EKYB100E□□222MJ25S
	2,700	10×30	0.027	0.11	2,230	EKYB100E□□272MJ30S
	2,700	12.5×20	0.027	0.11	2,230	EKYB100E□□272MK20S
	3,900	12.5×25	0.024	0.096	2,530	EKYB100E□□392MK25S
	4,700	12.5×30	0.021	0.084	2,860	EKYB100E□□472MK30S
	4,700	16×20	0.025	0.10	2,610	EKYB100E□□472ML20S
	5,600	12.5×35	0.018	0.072	3,140	EKYB100E□□562MK35S
	6,800	12.5×40	0.017	0.068	3,640	EKYB100E□□682MK40S
	6,800	16×25	0.020	0.080	3,140	EKYB100E□□682ML25S
	6,800	18×20	0.021	0.084	3,000	EKYB100E□□682MM20S
	8,200	16×31.5	0.016	0.064	3,610	EKYB100E□□822MLN3S
	8,200	18×25	0.017	0.068	3,530	EKYB100E□□822MM25S
	10,000	16×35.5	0.014	0.056	4,080	EKYB100E□□103MLP1S
	10,000	18×31.5	0.014	0.056	4,220	EKYB100E□□103MMN3S
	12,000	16×40	0.013	0.052	4,220	EKYB100E□□123ML40S
	12,000	18×35.5	0.012	0.048	4,280	EKYB100E□□123MMP1S
	15,000	18×40	0.011	0.044	4,700	EKYB100E□□153MM40S
16	120	5×11	0.29	1.2	340	EKYB160E□□121ME11D
	270	6.3×11	0.15	0.60	540	EKYB160E□□271MF11D
	470	8×11.5	0.087	0.35	840	EKYB160E□□471MHB5D
	680	8×15	0.069	0.28	1,050	EKYB160E□□681MH15D
	680	10×12.5	0.064	0.26	1,050	EKYB160E□□681MJC5S
	820	8×20	0.060	0.24	1,210	EKYB160E□□821MH20D
	1,000	10×16	0.049	0.20	1,400	EKYB160E□□102MJ16S
	1,500	10×20	0.037	0.15	1,650	EKYB160E□□152MJ20S
	1,800	10×25	0.031	0.13	1,910	EKYB160E□□182MJ25S
	2,200	10×30	0.027	0.11	2,230	EKYB160E□□222MJ30S
	2,200	12.5×20	0.027	0.11	2,230	EKYB160E□□222MK20S
	3,300	12.5×25	0.024	0.096	2,530	EKYB160E□□332MK25S
	3,900	12.5×30	0.021	0.084	2,860	EKYB160E□□392MK30S
	3,900	16×20	0.025	0.10	2,610	EKYB160E□□392ML20S
16	4,700	12.5×35	0.018	0.072	3,140	EKYB160E□□472MK35S
	4,700	18×20	0.021	0.084	3,000	EKYB160E□□472MM20S
	5,600	12.5×40	0.017	0.068	3,640	EKYB160E□□562MK40S
	5,600	16×25	0.020	0.080	3,140	EKYB160E□□562ML25S
	6,800	16×31.5	0.016	0.064	3,610	EKYB160E□□682MLN3S
	6,800	18×25	0.017	0.068	3,530	EKYB160E□□682MM25S
	8,200	16×35.5	0.014	0.056	4,080	EKYB160E□□822MLP1S
	8,200	18×31.5	0.014	0.056	4,220	EKYB160E□□822MMN3S
	10,000	16×40	0.013	0.052	4,220	EKYB160E□□103ML40S
	10,000	18×35.5	0.012	0.048	4,280	EKYB160E□□103MMP1S
	12,000	18×40	0.011	0.044	4,700	EKYB160E□□123MM40S
25	82	5×11	0.29	1.2	340	EKYB250E□□820ME11D
	150	6.3×11	0.15	0.60	540	EKYB250E□□151MF11D
	330	8×11.5	0.087	0.35	840	EKYB250E□□331MHB5D
	390	8×15	0.069	0.28	1,050	EKYB250E□□391MH15D
	470	10×12.5	0.064	0.26	1,050	EKYB250E□□471MJC5S
	560	8×20	0.060	0.24	1,210	EKYB250E□□561MH20D
	680	10×16	0.049	0.20	1,400	EKYB250E□□681MJ16S
	1,000	10×20	0.037	0.15	1,650	EKYB250E□□102MJ20S
	1,200	10×25	0.031	0.13	1,910	EKYB250E□□122MJ25S
	1,500	10×30	0.027	0.11	2,230	EKYB250E□□152MJ30S
	1,500	12.5×20	0.027	0.11	2,230	EKYB250E□□152MK20S
	2,200	12.5×25	0.024	0.096	2,530	EKYB250E□□222MK25S
	2,700	12.5×30	0.021	0.084	2,860	EKYB250E□□272MK30S
	2,700	16×20	0.025	0.10	2,610	EKYB250E□□272ML20S
	3,300	12.5×35	0.018	0.072	3,140	EKYB250E□□332MK35S
	3,300	18×20	0.021	0.084	3,000	EKYB250E□□332MM20S
	3,900	12.5×40	0.017	0.068	3,640	EKYB250E□□392MK40S
	3,900	16×25	0.020	0.080	3,140	EKYB250E□□392ML25S
	4,700	16×31.5	0.016	0.064	3,610	EKYB250E□□472MLN3S
	4,700	18×25	0.017	0.068	3,530	EKYB250E□□472MM25S
	5,600	16×35.5	0.014	0.056	4,080	EKYB250E□□562MLP1S
	6,800	16×40	0.013	0.052	4,220	EKYB250E□□682ML40S
	6,800	18×31.5	0.014	0.056	4,220	EKYB250E□□682MMN3S
	8,200	18×35.5	0.012	0.048	4,280	EKYB250E□□822MMP1S
35	47	5×11	0.29	1.2	340	EKYB350E□□470ME11D
	100	6.3×11	0.15	0.60	540	EKYB350E□□101MF11D
	180	8×11.5	0.087	0.35	840	EKYB350E□□181MHB5D
	270	8×15	0.069	0.28	1,050	EKYB350E□□271MH15D
	330	8×20	0.060	0.24	1,210	EKYB350E□□331MH20D
	330	10×12.5	0.064	0.26	1,050	EKYB350E□□331MJC5S
	470	10×16	0.049	0.20	1,400	EKYB350E□□471MJ16S
	680	10×20	0.037	0.15	1,650	EKYB350E□□681MJ20S
	820	10×25	0.031	0.13	1,910	EKYB350E□□821MJ25S
	1,000	10×30	0.027	0.11	2,230	EKYB350E□□102MJ30S
	1,000	12.5×20	0.027	0.11	2,230	EKYB350E□□102MK20S
	1,500	12.5×25	0.024	0.096	2,530	EKYB350E□□152MK25S
	1,800	12.5×30	0.021	0.084	2,860	EKYB350E□□182MK30S
	1,800	16×20	0.025	0.10	2,610	EKYB350E□□182ML20S
	2,200	12.5×35	0.018	0.072	3,140	EKYB350E□□222MK35S
	2,200	18×20	0.021	0.084	3,000	EKYB350E□□222MM20S
	2,700	12.5×40	0.017	0.068	3,640	EKYB350E□□272MK40S
	2,700	16×25	0.020	0.080	3,140	EKYB350E□□272ML25S
	3,300	16×31.5	0.016	0.064	3,610	EKYB350E□□332MLN3S
	3,300	18×25	0.017	0.068	3,530	EKYB350E□□332MM25S
	3,900	16×35.5	0.014	0.056	4,080	EKYB350E□□392MLP1S
	4,700	16×40	0.013	0.052	4,220	EKYB350E□□472ML40S
	4,700	18×31.5	0.014	0.056	4,220	EKYB350E□□472MMN3S
	5,600	18×35.5	0.012	0.048	4,280	EKYB350E□□562MMP1S
50	27	5×11	0.48	2.0	238	EKYB500E□□270ME11D
	56	6.3×11	0.20	0.80	385	EKYB500E□□560MF11D
	100	8×11.5	0.12	0.48	620	EKYB500E□□101MHB5D
	150	8×15	0.093	0.38	810	EKYB500E□□151MH15D
	150	10×12.5	0.10	0.40	810	EKYB500E□□151MJC5S

□□ : Enter the appropriate lead forming or taping code.

KYB New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
50	180	8×20	0.075	0.30	980	EKYB500E□□181MH20D
	220	10×16	0.069	0.28	1,100	EKYB500E□□221MJ16S
	270	10×20	0.055	0.22	1,300	EKYB500E□□271MJ20S
	390	10×25	0.043	0.18	1,600	EKYB500E□□391MJ25S
	470	10×30	0.038	0.16	1,820	EKYB500E□□471MJ30S
	470	12.5×20	0.034	0.14	1,820	EKYB500E□□471MK20S
	680	12.5×25	0.030	0.12	2,100	EKYB500E□□681MK25S
	820	12.5×30	0.025	0.10	2,450	EKYB500E□□821MK30S
	820	16×20	0.028	0.12	2,350	EKYB500E□□821ML20S
	1,000	12.5×35	0.021	0.084	2,800	EKYB500E□□102MK35S
	1,000	18×20	0.025	0.10	2,600	EKYB500E□□102MM20S
	1,200	12.5×40	0.019	0.076	3,100	EKYB500E□□122MK40S
	1,200	16×25	0.024	0.096	2,750	EKYB500E□□122ML25S
	1,500	16×31.5	0.019	0.076	3,150	EKYB500E□□152MLN3S
	1,500	18×25	0.021	0.084	2,890	EKYB500E□□152MM25S
	1,800	16×35.5	0.016	0.064	3,550	EKYB500E□□182MLP1S
	2,200	16×40	0.014	0.056	3,900	EKYB500E□□222ML40S
	2,200	18×31.5	0.014	0.056	3,800	EKYB500E□□222MMN3S
	2,700	18×35.5	0.013	0.052	4,100	EKYB500E□□272MMP1S
63	18	5×11	0.50	2.0	220	EKYB630E□□180ME11D
	33	6.3×11	0.25	1.0	350	EKYB630E□□330MF11D
	56	8×11.5	0.16	0.64	530	EKYB630E□□560MHB5D
	82	8×15	0.12	0.48	700	EKYB630E□□820MH15D
	120	8×20	0.085	0.34	880	EKYB630E□□121MH20D
	120	10×12.5	0.11	0.44	725	EKYB630E□□121MJC5S
	180	10×16	0.073	0.30	1,050	EKYB630E□□181MJ16S
	220	10×20	0.055	0.22	1,300	EKYB630E□□221MJ20S
	330	10×25	0.045	0.18	1,550	EKYB630E□□331MJ25S
	390	10×30	0.040	0.16	1,780	EKYB630E□□391MJ30S
	390	12.5×20	0.036	0.15	1,780	EKYB630E□□391MK20S
	560	12.5×25	0.030	0.12	2,100	EKYB630E□□561MK25S
	680	12.5×30	0.026	0.11	2,415	EKYB630E□□681MK30S
	680	16×20	0.028	0.12	2,250	EKYB630E□□681ML20S
	820	12.5×35	0.022	0.088	2,700	EKYB630E□□821MK35S
	820	18×20	0.028	0.12	2,500	EKYB630E□□821MM20S
	1,000	12.5×40	0.020	0.080	3,000	EKYB630E□□102MK40S
	1,000	16×25	0.025	0.10	2,730	EKYB630E□□102ML25S
	1,200	16×31.5	0.020	0.080	3,000	EKYB630E□□122MLN3S
	1,200	18×25	0.022	0.088	2,800	EKYB630E□□122MM25S
	1,500	16×35.5	0.018	0.072	3,200	EKYB630E□□152MLP1S
	1,500	18×31.5	0.018	0.072	3,300	EKYB630E□□152MMN3S
	1,800	16×40	0.016	0.064	3,590	EKYB630E□□182ML40S
	1,800	18×35.5	0.017	0.068	3,570	EKYB630E□□182MMP1S
	2,200	18×40	0.016	0.064	3,670	EKYB630E□□222MM40S
80	12	5×11	0.80	3.2	163	EKYB800E□□120ME11D
	22	6.3×11	0.43	1.8	267	EKYB800E□□220MF11D
	39	8×11.5	0.18	0.72	462	EKYB800E□□390MHB5D
80	56	8×15	0.14	0.56	585	EKYB800E□□560MH15D
	82	8×20	0.11	0.44	735	EKYB800E□□820MH20D
	82	10×12.5	0.14	0.56	624	EKYB800E□□820MJC5S
	120	10×16	0.10	0.40	780	EKYB800E□□121MJ16S
	180	10×20	0.075	0.30	1,040	EKYB800E□□181MJ20S
	220	10×25	0.060	0.24	1,170	EKYB800E□□221MJ25S
	270	10×30	0.053	0.22	1,350	EKYB800E□□271MJ30S
	270	12.5×20	0.048	0.20	1,430	EKYB800E□□271MK20S
	390	12.5×25	0.039	0.16	1,620	EKYB800E□□391MK25S
	470	12.5×30	0.033	0.14	1,950	EKYB800E□□471MK30S
	470	16×20	0.036	0.15	1,750	EKYB800E□□471ML20S
	560	12.5×35	0.026	0.11	2,250	EKYB800E□□561MK35S
	560	18×20	0.032	0.13	2,100	EKYB800E□□561MM20S
	680	12.5×40	0.024	0.096	2,450	EKYB800E□□681MK40S
	680	16×25	0.028	0.12	2,250	EKYB800E□□681ML25S
	820	16×31.5	0.022	0.088	2,400	EKYB800E□□821MLN3S
	820	18×25	0.027	0.11	2,270	EKYB800E□□821MM25S
	1,000	16×35.5	0.020	0.080	2,600	EKYB800E□□102MLP1S
	1,200	16×40	0.018	0.072	2,900	EKYB800E□□122ML40S
	1,200	18×31.5	0.020	0.080	2,550	EKYB800E□□122MMN3S
	1,500	18×35.5	0.018	0.072	3,050	EKYB800E□□152MMP1S
100	6.8	5×11	0.80	3.2	163	EKYB101E□□6R8ME11D
	15	6.3×11	0.43	1.8	267	EKYB101E□□150MF11D
	27	8×11.5	0.18	0.72	462	EKYB101E□□270MHB5D
	39	8×15	0.14	0.56	585	EKYB101E□□390MH15D
	56	8×20	0.11	0.44	735	EKYB101E□□560MH20D
	56	10×12.5	0.14	0.56	624	EKYB101E□□560MJC5S
	82	10×16	0.10	0.40	780	EKYB101E□□820MJ16S
	100	10×20	0.075	0.30	1,040	EKYB101E□□101MJ20S
	120	10×25	0.060	0.24	1,170	EKYB101E□□121MJ25S
	150	10×30	0.053	0.22	1,350	EKYB101E□□151MJ30S
	180	12.5×20	0.048	0.20	1,430	EKYB101E□□181MK20S
	220	12.5×25	0.039	0.16	1,620	EKYB101E□□221MK25S
	270	12.5×30	0.033	0.14	1,950	EKYB101E□□271MK30S
	270	16×20	0.036	0.15	1,750	EKYB101E□□271ML20S
	330	16×25	0.028	0.12	2,250	EKYB101E□□331ML25S
	390	12.5×35	0.026	0.11	2,250	EKYB101E□□391MK35S
	390	18×20	0.032	0.13	2,100	EKYB101E□□391MM20S
	470	12.5×40	0.024	0.096	2,450	EKYB101E□□471MK40S
	470	16×31.5	0.022	0.088	2,400	EKYB101E□□471MLN3S
	560	16×35.5	0.020	0.080	2,600	EKYB101E□□561MLP1S
	560	18×25	0.027	0.11	2,270	EKYB101E□□561MM25S
	680	16×40	0.018	0.072	2,900	EKYB101E□□681ML40S
	680	18×31.5	0.020	0.080	2,550	EKYB101E□□681MMN3S
	820	18×35.5	0.018	0.072	3,050	EKYB101E□□821MMP1S
	1,000	18×40	0.017	0.068	3,510	EKYB101E□□102MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
6.8 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KYA Series

- Downsized from KY series
- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current : 4,000 to 10,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

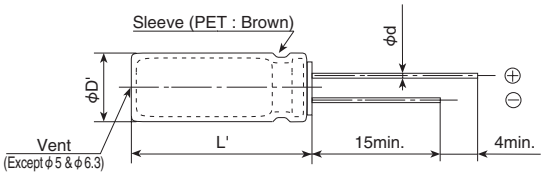
KYA
↑ Downsized
KY P153

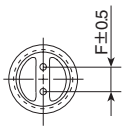
◆SPECIFICATIONS

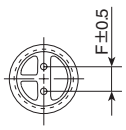
Items	Characteristics								
Category Temperature Range	−40 to +105℃								
Rated Voltage Range	6.3 to 100Vdc								
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)								
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)								
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)								
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	100V
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2
	Z(−40℃)/Z(+20℃)	8	6	4	3	3	3	3	3
	(at 120Hz)								
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.								
	Time: 6.3 to 10Vdc	φ5 & 6.3 : 4,000hours φ8 & 10 : 6,000hours φ12.5 to 16 : 8,000hours							
	Time: 16 to 100Vdc	φ5 & 6.3 : 5,000hours φ8 & 10 : 7,000hours φ12.5 to 16 : 10,000hours							
	Capacitance change	≦±25% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.								
	Capacitance change	≦±25% of the initial value							
	D.F. (tanδ)	≦200% of the initial specified value							
	Leakage current	≦The initial specified value							

◆DIMENSIONS [mm]

●Terminal Code : E



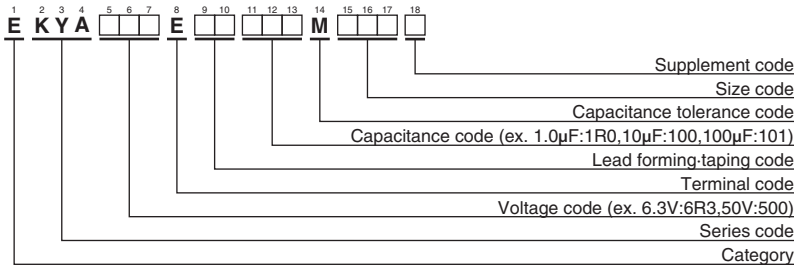




Gas escape end seal

φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
φD'	φD+0.5max.					
L'	L+1.5max.					

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KYA Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	100	5×11	0.90	3.6	150	EKYA6R3E□□101ME11D
	180	5×11	0.40	1.6	250	EKYA6R3E□□181ME11D
	220	5×11	0.40	1.6	250	EKYA6R3E□□221ME11D
	330	6.3×11	0.22	0.87	400	EKYA6R3E□□331MF11D
	470	6.3×11	0.22	0.87	400	EKYA6R3E□□471MF11D
	820	8×11.5	0.13	0.52	640	EKYA6R3E□□821MHB5D
	1,200	10×12.5	0.080	0.32	865	EKYA6R3E□□122MJC5S
	1,200	8×15	0.087	0.35	840	EKYA6R3E□□122MH15D
	1,500	8×20	0.069	0.27	1,050	EKYA6R3E□□152MH20D
	1,800	10×16	0.060	0.24	1,300	EKYA6R3E□□182MJ16S
	2,700	10×20	0.046	0.18	1,400	EKYA6R3E□□272MJ20S
	3,300	10×25	0.042	0.17	1,650	EKYA6R3E□□332MJ25S
	3,900	12.5×20	0.035	0.12	1,900	EKYA6R3E□□392MK20S
	4,700	12.5×25	0.027	0.089	2,230	EKYA6R3E□□472MK25S
	5,600	12.5×25	0.027	0.089	2,230	EKYA6R3E□□562MK25S
	10,000	16×25	0.021	0.060	2,930	EKYA6R3E□□103ML25S
	12,000	16×31.5	0.017	0.050	3,450	EKYA6R3E□□123MLN3S
	15,000	16×35.5	0.015	0.044	3,610	EKYA6R3E□□153MLP1S
10	100	5×11	0.90	3.6	150	EKYA100E□□101ME11D
	120	5×11	0.40	1.6	250	EKYA100E□□121ME11D
	330	6.3×11	0.22	0.87	400	EKYA100E□□331MF11D
	560	8×11.5	0.13	0.52	640	EKYA100E□□561MHB5D
	820	8×15	0.087	0.35	840	EKYA100E□□821MH15D
	820	10×12.5	0.080	0.32	865	EKYA100E□□821MJC5S
	1,000	10×12.5	0.080	0.32	865	EKYA100E□□102MJC5S
	1,200	8×20	0.069	0.27	1,050	EKYA100E□□122MH20D
	1,200	10×16	0.060	0.24	1,300	EKYA100E□□122MJ16S
	1,800	10×20	0.046	0.18	1,400	EKYA100E□□182MJ20S
	2,200	10×25	0.042	0.17	1,650	EKYA100E□□222MJ25S
	3,300	12.5×20	0.035	0.12	1,900	EKYA100E□□332MK20S
	3,900	12.5×25	0.027	0.089	2,230	EKYA100E□□392MK25S
	6,800	16×25	0.021	0.060	2,930	EKYA100E□□682ML25S
	10,000	16×31.5	0.017	0.050	3,450	EKYA100E□□103MLN3S
	12,000	16×35.5	0.015	0.044	3,610	EKYA100E□□123MLP1S
16	47	5×11	0.40	1.6	250	EKYA160E□□470ME11D
	100	5×11	0.40	1.6	250	EKYA160E□□101ME11D
	220	6.3×11	0.22	0.87	400	EKYA160E□□221MF11D
	270	6.3×11	0.22	0.87	400	EKYA160E□□271MF11D
	470	8×11.5	0.13	0.52	640	EKYA160E□□471MHB5D
	680	8×15	0.087	0.35	840	EKYA160E□□681MH15D
	680	10×12.5	0.080	0.32	865	EKYA160E□□681MJC5S
	820	8×20	0.069	0.27	1,050	EKYA160E□□821MH20D
	1,000	10×16	0.060	0.24	1,300	EKYA160E□□102MJ16S
	1,500	10×20	0.046	0.18	1,400	EKYA160E□□152MJ20S
	1,800	10×25	0.042	0.17	1,650	EKYA160E□□182MJ25S
	2,200	12.5×20	0.035	0.12	1,900	EKYA160E□□222MK20S
	3,300	12.5×25	0.027	0.089	2,230	EKYA160E□□332MK25S
	4,700	16×25	0.021	0.060	2,930	EKYA160E□□472ML25S
	5,600	16×25	0.021	0.060	2,930	EKYA160E□□562ML25S
	6,800	16×31.5	0.017	0.050	3,450	EKYA160E□□682MLN3S
	8,200	16×31.5	0.017	0.050	3,450	EKYA160E□□822MLN3S
	10,000	16×35.5	0.015	0.044	3,610	EKYA160E□□103MLP1S
25	33	5×11	0.40	1.6	250	EKYA250E□□330ME11D
	47	5×11	0.40	1.6	250	EKYA250E□□470ME11D
	68	5×11	0.40	1.6	250	EKYA250E□□680ME11D
	150	6.3×11	0.22	0.87	400	EKYA250E□□151MF11D
	330	8×11.5	0.13	0.52	640	EKYA250E□□331MHB5D
	390	8×15	0.087	0.35	840	EKYA250E□□391MH15D
	470	10×12.5	0.080	0.32	865	EKYA250E□□471MJC5S
	560	8×20	0.069	0.27	1,050	EKYA250E□□561MH20D
	680	10×16	0.060	0.24	1,300	EKYA250E□□681MJ16S
	1,000	10×20	0.046	0.18	1,400	EKYA250E□□102MJ20S
	1,200	10×25	0.042	0.17	1,650	EKYA250E□□122MJ25S
	1,500	12.5×20	0.035	0.12	1,900	EKYA250E□□152MK20S
	2,200	12.5×25	0.027	0.089	2,230	EKYA250E□□222MK25S
25	3,300	16×25	0.021	0.060	2,930	EKYA250E□□332ML25S
	3,900	16×25	0.021	0.060	2,930	EKYA250E□□392ML25S
	4,700	16×31.5	0.017	0.050	3,450	EKYA250E□□472MLN3S
	5,600	16×35.5	0.015	0.044	3,610	EKYA250E□□562MLP1S
35	33	5×11	0.40	1.6	250	EKYA350E□□330ME11D
	47	5×11	0.40	1.6	250	EKYA350E□□470ME11D
	100	6.3×11	0.22	0.87	400	EKYA350E□□101MF11D
	220	8×11.5	0.13	0.52	640	EKYA350E□□221MHB5D
	270	8×15	0.087	0.35	840	EKYA350E□□271MH15D
	330	10×12.5	0.080	0.32	865	EKYA350E□□331MJC5S
	390	8×20	0.069	0.27	1,050	EKYA350E□□391MH20D
	470	10×16	0.060	0.24	1,300	EKYA350E□□471MJ16S
	680	10×20	0.046	0.18	1,400	EKYA350E□□681MJ20S
	820	10×25	0.042	0.17	1,650	EKYA350E□□821MJ25S
	1,000	12.5×20	0.035	0.12	1,900	EKYA350E□□102MK20S
	1,500	12.5×25	0.027	0.089	2,230	EKYA350E□□152MK25S
	2,200	16×25	0.021	0.060	2,930	EKYA350E□□222ML25S
	2,700	16×25	0.021	0.060	2,930	EKYA350E□□272ML25S
	3,300	16×31.5	0.017	0.050	3,450	EKYA350E□□332MLN3S
	3,900	16×35.5	0.015	0.044	3,610	EKYA350E□□392MLP1S
50	1.0	5×11	4.0	16	30	EKYA500E□□1R0ME11D
	2.2	5×11	2.5	10	43	EKYA500E□□2R2ME11D
	3.3	5×11	2.2	8.8	53	EKYA500E□□3R3ME11D
	4.7	5×11	1.9	7.6	88	EKYA500E□□4R7ME11D
	10	5×11	1.5	6.0	100	EKYA500E□□100ME11D
	22	5×11	0.70	2.8	180	EKYA500E□□220ME11D
	27	5×11	0.70	2.8	250	EKYA500E□□270ME11D
	47	6.3×11	0.30	1.2	295	EKYA500E□□470MF11D
	56	6.3×11	0.30	1.2	295	EKYA500E□□560MF11D
	100	8×11.5	0.17	0.68	555	EKYA500E□□101MHB5D
	150	8×15	0.12	0.48	730	EKYA500E□□151MH15D
	180	10×12.5	0.12	0.48	760	EKYA500E□□181MJC5S
	180	8×20	0.091	0.36	910	EKYA500E□□181MH20D
	220	10×16	0.084	0.34	1,050	EKYA500E□□221MJ16S
	330	10×20	0.060	0.24	1,220	EKYA500E□□331MJ20S
	470	10×25	0.055	0.22	1,440	EKYA500E□□471MJ25S
	470	12.5×20	0.045	0.15	1,660	EKYA500E□□471MK20S
	560	12.5×20	0.045	0.15	1,660	EKYA500E□□561MK20S
	820	12.5×25	0.034	0.11	1,950	EKYA500E□□821MK25S
	1,000	16×25	0.025	0.075	2,555	EKYA500E□□102ML25S
	1,200	16×25	0.025	0.075	2,555	EKYA500E□□122ML25S
	1,800	16×31.5	0.022	0.066	3,010	EKYA500E□□182MLN3S
	2,200	16×35.5	0.019	0.057	3,150	EKYA500E□□222MLP1S
63	10	5×11	0.88	3.5	173	EKYA630E□□100ME11D
	15	5×11	0.88	3.5	173	EKYA630E□□150ME11D
	33	6.3×11	0.35	1.4	278	EKYA630E□□330MF11D
	56	8×11.5	0.22	0.88	500	EKYA630E□□560MHB5D
	82	8×15	0.16	0.64	665	EKYA630E□□820MH15D
	100	10×12.5	0.11	0.44	725	EKYA630E□□101MJC5S
	120	8×20	0.12	0.48	820	EKYA630E□□121MH20D
	120	10×16	0.076	0.31	950	EKYA630E□□121MJ16S
	220	10×20	0.056	0.23	1,200	EKYA630E□□221MJ20S
	330	10×25	0.046	0.19	1,350	EKYA630E□□331MJ25S
	330	12.5×20	0.041	0.13	1,570	EKYA630E□□331MK20S
	390	12.5×20	0.041	0.13	1,570	EKYA630E□□391MK20S
	470	12.5×25	0.031	0.093	1,990	EKYA630E□□471MK25S
	560	12.5×25	0.031	0.093	1,990	EKYA630E□□561MK25S
	1,000	16×25	0.025	0.075	2,730	EKYA630E□□102ML25S
	1,200	16×31.5	0.021	0.063	2,850	EKYA630E□□122MLN3S
	1,500	16×35.5	0.019	0.057	2,900	EKYA630E□□152MLP1S
100	1.0	5×11	4.5	15	20	EKYA101E□□1R0ME11D
	2.2	5×11	3.0	13	30	EKYA101E□□2R2ME11D
	3.3	5×11	2.7	11	40	EKYA101E□□3R3ME11D
	4.7	5×11	2.5	10	65	EKYA101E□□4R7ME11D
	6.8	5×11	1.4	5.6	125	EKYA101E□□6R8ME11D

□□ : Enter the appropriate lead forming or taping code.

KYA Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz)		Rated ripple current (mArms/105℃, 100kHz)	Part No.
			20℃	-10℃		
100	10	6.3×11	0.57	2.3	205	EKYA101E□□100MF11D
	15	6.3×11	0.57	2.3	205	EKYA101E□□150MF11D
	27	8×11.5	0.36	1.4	355	EKYA101E□□270MHB5D
	39	8×15	0.25	1.0	450	EKYA101E□□390MH15D
	47	10×12.5	0.17	0.66	480	EKYA101E□□470MJC5S
	56	8×20	0.19	0.76	565	EKYA101E□□560MH20D
	68	10×16	0.11	0.47	600	EKYA101E□□680MJ16S
	100	10×20	0.084	0.34	800	EKYA101E□□101MJ20S
	150	10×25	0.069	0.28	900	EKYA101E□□151MJ25S
	180	12.5×20	0.062	0.18	1,100	EKYA101E□□181MK20S
	220	12.5×25	0.047	0.14	1,250	EKYA101E□□221MK25S
	330	16×25	0.038	0.12	1,700	EKYA101E□□331ML25S
	470	16×31.5	0.032	0.095	1,850	EKYA101E□□471MLN3S
	560	16×35.5	0.029	0.086	2,000	EKYA101E□□561MLP1S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
1.0 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KY Series

- Newly innovative electrolyte is employed to minimize ESR
- Endurance with ripple current : 4,000 to 10,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

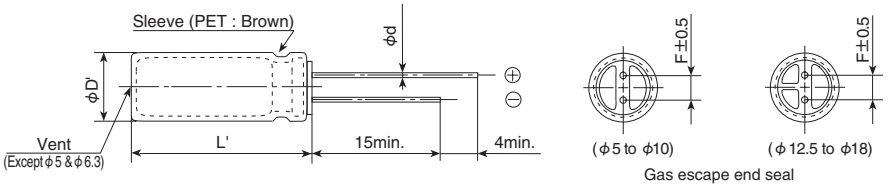
KZH P142
↑ Lower Z
KZE P144
↑ Lower Z
KY

◆SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	−40 to +105℃									
Rated Voltage Range	6.3 to 100Vdc									
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)									
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)									
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)									
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V	80V	100V
	Z(−25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2
	Z(−40℃)/Z(+20℃)	8	6	4	3	3	3	3	3	3
	(at 120Hz)									
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.									
	Time: 6.3 to 10Vdc	φ5 & 6.3 : 4,000hours φ8 & 10 : 6,000hours φ12.5 to 18 : 8,000hours								
	Time: 16 to 100Vdc	φ5 & 6.3 : 5,000hours φ8 & 10 : 7,000hours φ12.5 to 18 : 10,000hours								
	Capacitance change	≦±25% of the initial value								
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.									
	Capacitance change	≦±25% of the initial value								
	D.F. (tanδ)	≦200% of the initial specified value								
	Leakage current	≦The initial specified value								

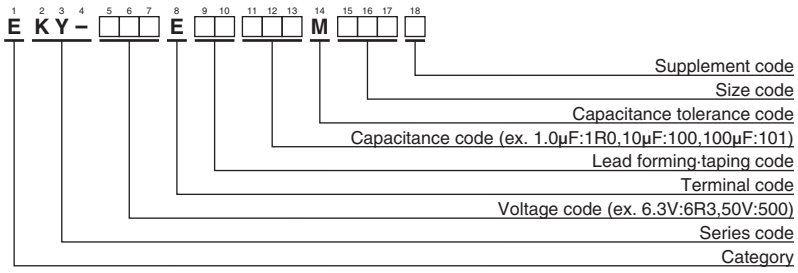
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KY Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	150	5×11	0.58	2.3	210	EKY-6R3E□□151ME11D
	330	6.3×11	0.22	0.87	340	EKY-6R3E□□331MF11D
	680	8×11.5	0.13	0.52	640	EKY-6R3E□□681MHB5D
	820	10×12.5	0.080	0.32	865	EKY-6R3E□□821MJC5S
	1,000	8×15	0.087	0.35	840	EKY-6R3E□□102MH15D
	1,200	8×20	0.069	0.27	1,050	EKY-6R3E□□122MH20D
	1,200	10×16	0.060	0.24	1,210	EKY-6R3E□□122MJ16S
	1,500	10×20	0.046	0.18	1,400	EKY-6R3E□□152MJ20S
	1,800	12.5×15	0.049	0.16	1,450	EKY-6R3E□□182MK15S
	2,200	10×25	0.042	0.17	1,650	EKY-6R3E□□222MJ25S
	2,700	10×30	0.031	0.12	1,910	EKY-6R3E□□272MJ30S
	2,700	16×15	0.042	0.12	1,940	EKY-6R3E□□272ML15S
	3,300	12.5×20	0.035	0.12	1,900	EKY-6R3E□□332MK20S
	3,900	12.5×25	0.027	0.089	2,230	EKY-6R3E□□392MK25S
	3,900	18×15	0.043	0.11	2,210	EKY-6R3E□□392MM15S
	4,700	12.5×30	0.024	0.078	2,650	EKY-6R3E□□472MK30S
	5,600	12.5×35	0.020	0.065	2,880	EKY-6R3E□□562MK35S
	5,600	16×20	0.027	0.078	2,530	EKY-6R3E□□562ML20S
	6,800	12.5×40	0.017	0.056	3,350	EKY-6R3E□□682MK40S
	6,800	16×25	0.021	0.060	2,930	EKY-6R3E□□682ML25S
	6,800	18×20	0.026	0.067	2,860	EKY-6R3E□□682MM20S
	8,200	16×31.5	0.017	0.050	3,450	EKY-6R3E□□822MLN3S
	10,000	16×35.5	0.015	0.044	3,610	EKY-6R3E□□103MLP1S
	10,000	18×25	0.019	0.049	3,140	EKY-6R3E□□103MM25S
	12,000	16×40	0.013	0.038	4,080	EKY-6R3E□□123ML40S
	12,000	18×31.5	0.015	0.040	4,170	EKY-6R3E□□123MMN3S
	15,000	18×35.5	0.014	0.038	4,220	EKY-6R3E□□153MMP1S
	18,000	18×40	0.012	0.032	4,280	EKY-6R3E□□183MM40S
10	100	5×11	0.58	2.3	210	EKY-100E□□101ME11D
	220	6.3×11	0.22	0.87	340	EKY-100E□□221MF11D
	470	8×11.5	0.13	0.52	640	EKY-100E□□471MHB5D
	680	8×15	0.087	0.35	840	EKY-100E□□681MH15D
	680	10×12.5	0.080	0.32	865	EKY-100E□□681MJC5S
	1,000	8×20	0.069	0.27	1,050	EKY-100E□□102MH20D
	1,000	10×16	0.060	0.24	1,210	EKY-100E□□102MJ16S
	1,200	10×20	0.046	0.18	1,400	EKY-100E□□122MJ20S
	1,500	10×25	0.042	0.17	1,650	EKY-100E□□152MJ25S
	1,500	12.5×15	0.049	0.16	1,450	EKY-100E□□152MK15S
	2,200	10×30	0.031	0.12	1,910	EKY-100E□□222MJ30S
	2,200	12.5×20	0.035	0.12	1,900	EKY-100E□□222MK20S
	2,200	16×15	0.042	0.12	1,940	EKY-100E□□222ML15S
	2,700	18×15	0.043	0.11	2,210	EKY-100E□□272MM15S
	3,300	12.5×25	0.027	0.089	2,230	EKY-100E□□332MK25S
	3,900	12.5×30	0.024	0.078	2,650	EKY-100E□□392MK30S
	3,900	16×20	0.027	0.078	2,530	EKY-100E□□392ML20S
	4,700	12.5×35	0.020	0.065	2,880	EKY-100E□□472MK35S
	5,600	12.5×40	0.017	0.056	3,350	EKY-100E□□562MK40S
	5,600	16×25	0.021	0.060	2,930	EKY-100E□□562ML25S
	5,600	18×20	0.026	0.067	2,860	EKY-100E□□562MM20S
	6,800	16×31.5	0.017	0.050	3,450	EKY-100E□□682MLN3S
	6,800	18×25	0.019	0.049	3,140	EKY-100E□□682MM25S
	8,200	16×35.5	0.015	0.044	3,610	EKY-100E□□822MLP1S
	8,200	18×31.5	0.015	0.040	4,170	EKY-100E□□822MMN3S
	10,000	16×40	0.013	0.038	4,080	EKY-100E□□103ML40S
	10,000	18×35.5	0.014	0.038	4,220	EKY-100E□□103MMP1S
	12,000	18×40	0.012	0.032	4,280	EKY-100E□□123MM40S
16	56	5×11	0.58	2.3	210	EKY-160E□□560ME11D
	120	6.3×11	0.22	0.87	340	EKY-160E□□121MF11D
	330	8×11.5	0.13	0.52	640	EKY-160E□□331MHB5D
	470	8×15	0.087	0.35	840	EKY-160E□□471MH15D
	470	10×12.5	0.080	0.32	865	EKY-160E□□471MJC5S
	680	8×20	0.069	0.27	1,050	EKY-160E□□681MH20D
	680	10×16	0.060	0.24	1,210	EKY-160E□□681MJ16S
	1,000	10×20	0.046	0.18	1,400	EKY-160E□□102MJ20S
	1,000	12.5×15	0.049	0.16	1,450	EKY-160E□□102MK15S
	1,200	10×25	0.042	0.17	1,650	EKY-160E□□122MJ25S
	1,500	10×30	0.031	0.12	1,910	EKY-160E□□152MJ30S
16	1,500	12.5×20	0.035	0.12	1,900	EKY-160E□□152MK20S
	1,500	16×15	0.042	0.12	1,940	EKY-160E□□152ML15S
	2,200	12.5×25	0.027	0.089	2,230	EKY-160E□□222MK25S
	2,200	18×15	0.043	0.11	2,210	EKY-160E□□222MM15S
	2,700	12.5×30	0.024	0.078	2,650	EKY-160E□□272MK30S
	2,700	16×20	0.027	0.078	2,530	EKY-160E□□272ML20S
	3,300	12.5×35	0.020	0.065	2,880	EKY-160E□□332MK35S
	3,900	12.5×40	0.017	0.056	3,350	EKY-160E□□392MK40S
	3,900	16×25	0.021	0.060	2,930	EKY-160E□□392ML25S
	3,900	18×20	0.026	0.067	2,860	EKY-160E□□392MM20S
	4,700	16×31.5	0.017	0.050	3,450	EKY-160E□□472MLN3S
	4,700	18×25	0.019	0.049	3,140	EKY-160E□□472MM25S
	5,600	16×35.5	0.015	0.044	3,610	EKY-160E□□562MLP1S
	5,600	18×31.5	0.015	0.040	4,170	EKY-160E□□562MMN3S
	6,800	16×40	0.013	0.038	4,080	EKY-160E□□682ML40S
	8,200	18×35.5	0.014	0.038	4,220	EKY-160E□□822MMP1S
	10,000	18×40	0.012	0.032	4,280	EKY-160E□□103MM40S
25	47	5×11	0.58	2.3	210	EKY-250E□□470ME11D
	100	6.3×11	0.22	0.87	340	EKY-250E□□101MF11D
	220	8×11.5	0.13	0.52	640	EKY-250E□□221MHB5D
	330	8×15	0.087	0.35	840	EKY-250E□□331MH15D
	330	10×12.5	0.080	0.32	865	EKY-250E□□331MJC5S
	470	8×20	0.069	0.27	1,050	EKY-250E□□471MH20D
	470	10×16	0.060	0.24	1,210	EKY-250E□□471MJ16S
	680	10×20	0.046	0.18	1,400	EKY-250E□□681MJ20S
	680	12.5×15	0.049	0.16	1,450	EKY-250E□□681MK15S
	820	10×25	0.042	0.17	1,650	EKY-250E□□821MJ25S
	1,000	10×30	0.031	0.12	1,910	EKY-250E□□102MJ30S
	1,000	12.5×20	0.035	0.12	1,900	EKY-250E□□102MK20S
	1,000	16×15	0.042	0.12	1,940	EKY-250E□□102ML15S
	1,200	18×15	0.043	0.11	2,210	EKY-250E□□122MM15S
	1,500	12.5×25	0.027	0.089	2,230	EKY-250E□□152MK25S
	1,800	12.5×30	0.024	0.078	2,650	EKY-250E□□182MK30S
	1,800	16×20	0.027	0.078	2,530	EKY-250E□□182ML20S
	2,200	12.5×35	0.020	0.065	2,880	EKY-250E□□222MK35S
	2,200	18×20	0.026	0.067	2,860	EKY-250E□□222MM20S
	2,700	12.5×40	0.017	0.056	3,350	EKY-250E□□272MK40S
	2,700	16×25	0.021	0.060	2,930	EKY-250E□□272ML25S
	3,300	16×31.5	0.017	0.050	3,450	EKY-250E□□332MLN3S
	3,300	18×25	0.019	0.049	3,140	EKY-250E□□332MM25S
	3,900	16×35.5	0.015	0.044	3,610	EKY-250E□□392MLP1S
	3,900	18×31.5	0.015	0.040	4,170	EKY-250E□□392MMN3S
	4,700	16×40	0.013	0.038	4,080	EKY-250E□□472ML40S
	4,700	18×35.5	0.014	0.038	4,220	EKY-250E□□472MMP1S
	5,600	18×40	0.012	0.032	4,280	EKY-250E□□562MM40S
35	33	5×11	0.58	2.3	210	EKY-350E□□330ME11D
	56	6.3×11	0.22	0.87	340	EKY-350E□□560MF11D
	150	8×11.5	0.13	0.52	640	EKY-350E□□151MHB5D
	220	8×15	0.087	0.35	840	EKY-350E□□221MH15D
	220	10×12.5	0.080	0.32	865	EKY-350E□□221MJC5S
	270	8×20	0.069	0.27	1,050	EKY-350E□□271MH20D
	330	10×16	0.060	0.24	1,210	EKY-350E□□331MJ16S
	470	10×20	0.046	0.18	1,400	EKY-350E□□471MJ20S
	470	12.5×15	0.049	0.16	1,450	EKY-350E□□471MK15S
	560	10×25	0.042	0.17	1,650	EKY-350E□□561MJ25S
	680	10×30	0.031	0.12	1,910	EKY-350E□□681MJ30S
	680	12.5×20	0.035	0.12	1,900	EKY-350E□□681MK20S
	680	16×15	0.042	0.12	1,940	EKY-350E□□681ML15S
	1,000	12.5×25	0.027	0.089	2,230	EKY-350E□□102MK25S
	1,000	18×15	0.043	0.11	2,210	EKY-350E□□102MM15S
	1,200	12.5×30	0.024	0.078	2,650	EKY-350E□□122MK30S
	1,200	16×20	0.027	0.078	2,530	EKY-350E□□122ML20S
	1,500	12.5×35	0.020	0.065	2,880	EKY-350E□□152MK35S
	1,800	12.5×40	0.017	0.056	3,350	EKY-350E□□182MK40S
	1,800	16×25	0.021	0.060	2,930	EKY-350E□□182ML25S
	1,800	18×20	0.026	0.067	2,860	EKY-350E□□182MM20S
	2,200	16×31.5	0.017	0.050	3,450	EKY-350E□□222MLN3S

□□ : Enter the appropriate lead forming or taping code.

KY Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃ 100kHz)	Part No.
35	2,200	18×25	0.019	0.049	3,140	EKY-350E□□222MM25S
	2,700	16×35.5	0.015	0.044	3,610	EKY-350E□□272MLP1S
	2,700	18×31.5	0.015	0.040	4,170	EKY-350E□□272MMN3S
	3,300	16×40	0.013	0.038	4,080	EKY-350E□□332ML40S
	3,300	18×35.5	0.014	0.038	4,220	EKY-350E□□332MMP1S
	3,900	18×40	0.012	0.032	4,280	EKY-350E□□392MM40S
50	1.0	5×11	4.0	16.0	30	EKY-500E□□1R0ME11D
	2.2	5×11	2.5	10.0	43	EKY-500E□□2R2ME11D
	3.3	5×11	2.2	8.8	53	EKY-500E□□3R3ME11D
	4.7	5×11	1.9	7.6	88	EKY-500E□□4R7ME11D
	10	5×11	1.5	6.0	100	EKY-500E□□100ME11D
	22	5×11	0.70	2.8	180	EKY-500E□□220ME11D
	56	6.3×11	0.30	1.2	295	EKY-500E□□560MF11D
	100	8×11.5	0.17	0.68	555	EKY-500E□□101MHB5D
	120	8×15	0.12	0.48	730	EKY-500E□□121MH15D
	150	10×12.5	0.12	0.48	760	EKY-500E□□151MJC5S
	180	8×20	0.091	0.36	910	EKY-500E□□181MH20D
	220	10×16	0.084	0.34	1,050	EKY-500E□□221MJ16S
	270	10×20	0.060	0.24	1,220	EKY-500E□□271MJ20S
	270	12.5×15	0.061	0.20	1,260	EKY-500E□□271MK15S
	330	10×25	0.055	0.22	1,440	EKY-500E□□331MJ25S
	470	10×30	0.043	0.17	1,690	EKY-500E□□471MJ30S
	470	12.5×20	0.045	0.15	1,660	EKY-500E□□471MK20S
	470	16×15	0.055	0.17	1,690	EKY-500E□□471ML15S
	560	12.5×25	0.034	0.11	1,950	EKY-500E□□561MK25S
	560	18×15	0.054	0.15	1,930	EKY-500E□□561MM15S
	680	12.5×30	0.030	0.10	2,310	EKY-500E□□681MK30S
	820	12.5×35	0.025	0.083	2,510	EKY-500E□□821MK35S
	820	16×20	0.034	0.10	2,210	EKY-500E□□821ML20S
	1,000	12.5×40	0.021	0.069	2,920	EKY-500E□□102MK40S
	1,000	16×25	0.025	0.075	2,555	EKY-500E□□102ML25S
	1,000	18×20	0.036	0.097	2,490	EKY-500E□□102MM20S
	1,200	16×31.5	0.022	0.066	3,010	EKY-500E□□122MLN3S
	1,200	18×25	0.026	0.070	2,740	EKY-500E□□122MM25S
	1,500	16×35.5	0.019	0.057	3,150	EKY-500E□□152MLP1S
	1,800	16×40	0.016	0.048	3,710	EKY-500E□□182ML40S
	1,800	18×31.5	0.021	0.057	3,635	EKY-500E□□182MMN3S
	2,200	18×35.5	0.017	0.046	3,680	EKY-500E□□222MMP1S
	2,700	18×40	0.014	0.038	3,800	EKY-500E□□272MM40S
63	15	5×11	0.88	3.5	165	EKY-630E□□150ME11D
	33	6.3×11	0.35	1.4	265	EKY-630E□□330MF11D
	56	8×11.5	0.22	0.88	500	EKY-630E□□560MHB5D
	82	8×15	0.16	0.64	665	EKY-630E□□820MH15D
	82	10×12.5	0.11	0.44	690	EKY-630E□□820MJC5S
	120	8×20	0.12	0.48	820	EKY-630E□□121MH20D
	120	10×16	0.076	0.31	950	EKY-630E□□121MJ16S
	180	10×20	0.056	0.23	1,150	EKY-630E□□181MJ20S
	180	12.5×16	0.072	0.29	1,150	EKY-630E□□181MK16S
	220	10×25	0.046	0.19	1,350	EKY-630E□□221MJ25S
	270	12.5×20	0.041	0.13	1,500	EKY-630E□□271MK20S
	390	12.5×25	0.031	0.093	1,900	EKY-630E□□391MK25S
	470	12.5×30	0.028	0.084	2,300	EKY-630E□□471MK30S
	470	16×20	0.032	0.096	2,000	EKY-630E□□471ML20S
	560	12.5×35	0.024	0.072	2,500	EKY-630E□□561MK35S
	680	12.5×40	0.021	0.063	2,800	EKY-630E□□681MK40S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃ 100kHz)	Part No.
63	680	16×25	0.025	0.075	2,600	EKY-630E□□681ML25S
	680	18×20	0.030	0.090	2,500	EKY-630E□□681MM20S
	820	16×31.5	0.021	0.063	2,850	EKY-630E□□821MLN3S
	820	18×25	0.024	0.072	2,800	EKY-630E□□821MM25S
	1,000	16×35.5	0.019	0.057	2,900	EKY-630E□□102MLP1S
	1,200	16×40	0.018	0.054	3,400	EKY-630E□□122ML40S
	1,200	18×31.5	0.020	0.060	3,300	EKY-630E□□122MMN3S
	1,500	18×35.5	0.018	0.054	3,400	EKY-630E□□152MMP1S
	1,800	18×40	0.017	0.051	3,500	EKY-630E□□182MM40S
80	68	10×12.5	0.17	0.66	480	EKY-800E□□680MJC5S
	100	10×16	0.11	0.47	600	EKY-800E□□101MJ16S
	120	10×20	0.084	0.34	800	EKY-800E□□121MJ20S
	150	10×25	0.069	0.28	900	EKY-800E□□151MJ25S
	150	12.5×16	0.11	0.34	750	EKY-800E□□151MK16S
	220	12.5×20	0.062	0.18	1,100	EKY-800E□□221MK20S
	330	12.5×25	0.047	0.14	1,250	EKY-800E□□331MK25S
	330	16×20	0.048	0.15	1,350	EKY-800E□□331ML20S
	390	12.5×30	0.042	0.13	1,500	EKY-800E□□391MK30S
	470	12.5×35	0.036	0.11	1,650	EKY-800E□□471MK35S
	470	16×25	0.038	0.12	1,700	EKY-800E□□471ML25S
	470	18×20	0.045	0.14	1,500	EKY-800E□□471MM20S
	560	12.5×40	0.032	0.095	1,800	EKY-800E□□561MK40S
	680	16×31.5	0.032	0.095	1,850	EKY-800E□□681MLN3S
	680	18×25	0.036	0.11	1,750	EKY-800E□□681MM25S
	820	16×35.5	0.029	0.086	2,000	EKY-800E□□821MLP1S
	820	18×31.5	0.030	0.090	1,900	EKY-800E□□821MMN3S
	1,000	16×40	0.027	0.081	2,200	EKY-800E□□102ML40S
	1,000	18×35.5	0.027	0.081	2,200	EKY-800E□□102MMP1S
	1,200	18×40	0.026	0.077	2,700	EKY-800E□□122MM40S
100	6.8	5×11	1.4	5.6	125	EKY-101E□□6R8ME11D
	15	6.3×11	0.57	2.3	205	EKY-101E□□150MF11D
	27	8×11.5	0.36	1.4	355	EKY-101E□□270MHB5D
	39	8×15	0.25	1.0	450	EKY-101E□□390MH15D
	47	10×12.5	0.17	0.66	480	EKY-101E□□470MJC5S
	56	8×20	0.19	0.76	565	EKY-101E□□560MH20D
	68	10×16	0.11	0.47	600	EKY-101E□□680MJ16S
	82	10×20	0.084	0.34	800	EKY-101E□□820MJ20S
	100	12.5×16	0.11	0.34	750	EKY-101E□□101MK16S
	120	10×25	0.069	0.28	900	EKY-101E□□121MJ25S
	150	12.5×20	0.062	0.18	1,100	EKY-101E□□151MK20S
	220	12.5×25	0.047	0.14	1,250	EKY-101E□□221MK25S
	220	16×20	0.048	0.15	1,350	EKY-101E□□221ML20S
	270	12.5×30	0.042	0.13	1,500	EKY-101E□□271MK30S
	330	12.5×35	0.036	0.11	1,650	EKY-101E□□331MK35S
	330	16×25	0.038	0.12	1,700	EKY-101E□□331ML25S
	330	18×20	0.045	0.14	1,500	EKY-101E□□331MM20S
	390	12.5×40	0.032	0.095	1,800	EKY-101E□□391MK40S
	470	16×31.5	0.032	0.095	1,850	EKY-101E□□471MLN3S
	470	18×25	0.036	0.11	1,750	EKY-101E□□471MM25S
	560	16×35.5	0.029	0.086	2,000	EKY-101E□□561MLP1S
	560	18×31.5	0.030	0.090	1,900	EKY-101E□□561MMN3S
	680	16×40	0.027	0.081	2,200	EKY-101E□□681ML40S
	680	18×35.5	0.027	0.081	2,200	EKY-101E□□681MMP1S
	820	18×40	0.026	0.077	2,700	EKY-101E□□821MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
1.0 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise.
When long life performance is required in actual use, the rms ripple current has to be reduced.

LZA Series Upgrade!

- Adoption of innovative electrolyte and new technologies
- Very low impedance at high frequency
- Endurance with ripple current: 4,000 to 7,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

LZA
Lower Z
Downsized
LXZ P158

◆SPECIFICATIONS

Items	Characteristics						
Category Temperature Range	−55 to +105℃						
Rated Voltage Range	6.3 to 35Vdc						
Capacitance Tolerance	±20% (M)						(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)						(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.						(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	
	Z(−55℃)/Z(+20℃)	4	3	3	3	3	
							(at 120Hz)

Endurance

The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.

Time	φ10 : 4,000hours φ12.5 : 5,000hours φ16 to φ18 : 7,000hours		
Rated voltage	6.3 to 10Vdc(φ10)	6.3 to 10Vdc(φ12.5 to φ18)	16 to 35Vdc
Capacitance change	≦±30% of the initial value	≦±20% of the initial value	≦±20% of the initial value
D.F.(tanδ)	≦300% of the initial specified value	≦200% of the initial specified value	≦200% of the initial specified value
Leakage current	≦The initial specified value	≦The initial specified value	≦The initial specified value

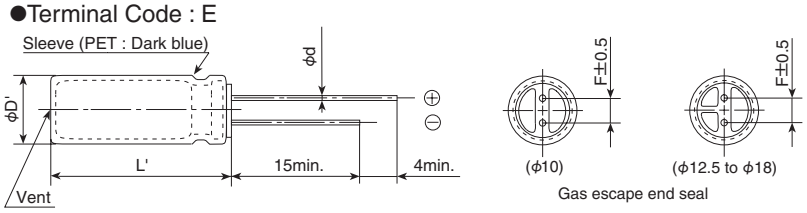
Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.

Rated voltage	6.3 to 10Vdc(φ10)	6.3 to 10Vdc(φ12.5 to φ18)	16 to 35Vdc
Capacitance change	≦±30% of the initial value	≦±20% of the initial value	≦±20% of the initial value
D.F.(tanδ)	≦300% of the initial specified value	≦200% of the initial specified value	≦200% of the initial specified value
Leakage current	≦The initial specified value	≦The initial specified value	≦The initial specified value

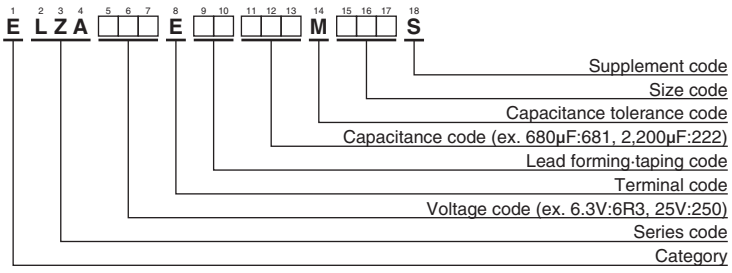
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

LZA Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max/20℃, 100kHz)	Rated ripple current (mArms/105℃,100kHz)	Part No.
6.3	1,500	10×12.5	0.063	960	ELZA6R3E□□152MJC5S
	1,800	10×16	0.049	1,240	ELZA6R3E□□182MJ16S
	2,700	10×20	0.035	1,550	ELZA6R3E□□272MJ20S
	3,300	10×25	0.033	1,740	ELZA6R3E□□332MJ25S
	4,700	12.5×20	0.029	1,890	ELZA6R3E□□472MK20S
	6,800	12.5×25	0.022	2,350	ELZA6R3E□□682MK25S
	6,800	16×20	0.026	2,330	ELZA6R3E□□682ML20S
	8,200	18×20	0.025	2,640	ELZA6R3E□□822MM20S
	10,000	16×25	0.019	2,760	ELZA6R3E□□103ML25S
	12,000	18×25	0.018	2,850	ELZA6R3E□□123MM25S
10	1,000	10×12.5	0.063	960	ELZA100E□□102MJC5S
	1,500	10×16	0.049	1,240	ELZA100E□□152MJ16S
	2,200	10×20	0.035	1,550	ELZA100E□□222MJ20S
	2,700	10×25	0.033	1,740	ELZA100E□□272MJ25S
	3,300	12.5×20	0.029	1,890	ELZA100E□□332MK20S
	4,700	12.5×25	0.022	2,350	ELZA100E□□472MK25S
	4,700	16×20	0.026	2,330	ELZA100E□□472ML20S
	6,800	16×25	0.019	2,760	ELZA100E□□682ML25S
	6,800	18×20	0.025	2,640	ELZA100E□□682MM20S
	8,200	18×25	0.018	2,850	ELZA100E□□822MM25S
16	820	10×12.5	0.063	960	ELZA160E□□821MJC5S
	1,000	10×16	0.049	1,240	ELZA160E□□102MJ16S
	1,500	10×20	0.035	1,550	ELZA160E□□152MJ20S
	1,800	10×25	0.033	1,740	ELZA160E□□182MJ25S
	2,200	12.5×20	0.029	1,890	ELZA160E□□222MK20S
16	3,300	12.5×25	0.022	2,350	ELZA160E□□332MK25S
	3,900	16×20	0.026	2,330	ELZA160E□□392ML20S
	5,600	16×25	0.019	2,760	ELZA160E□□562ML25S
	5,600	18×20	0.025	2,640	ELZA160E□□562MM20S
	8,200	18×25	0.018	2,850	ELZA160E□□822MM25S
25	470	10×12.5	0.063	960	ELZA250E□□471MJC5S
	680	10×16	0.049	1,240	ELZA250E□□681MJ16S
	1,000	10×20	0.035	1,550	ELZA250E□□102MJ20S
	1,200	10×25	0.033	1,740	ELZA250E□□122MJ25S
	1,500	12.5×20	0.029	1,890	ELZA250E□□152MK20S
	2,200	12.5×25	0.022	2,350	ELZA250E□□222MK25S
	2,700	16×20	0.026	2,330	ELZA250E□□272ML20S
	3,300	18×20	0.025	2,640	ELZA250E□□332MM20S
	3,900	16×25	0.019	2,760	ELZA250E□□392ML25S
	4,700	18×25	0.018	2,850	ELZA250E□□472MM25S
35	330	10×12.5	0.063	960	ELZA350E□□331MJC5S
	470	10×16	0.049	1,240	ELZA350E□□471MJ16S
	680	10×20	0.035	1,550	ELZA350E□□681MJ20S
	820	10×25	0.033	1,740	ELZA350E□□821MJ25S
	1,000	12.5×20	0.029	1,890	ELZA350E□□102MK20S
	1,500	12.5×25	0.022	2,350	ELZA350E□□152MK25S
	1,800	16×20	0.026	2,330	ELZA350E□□182ML20S
	2,200	18×20	0.025	2,640	ELZA350E□□222MM20S
	2,700	16×25	0.019	2,760	ELZA350E□□272ML25S
	3,300	18×25	0.018	2,850	ELZA350E□□332MM25S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
330 to 470	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 12,000	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

LXZ Series

- Adoption of innovative electrolyte and new technologies
- Very low impedance at high frequency
- Endurance with ripple current: 2,000 to 8,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

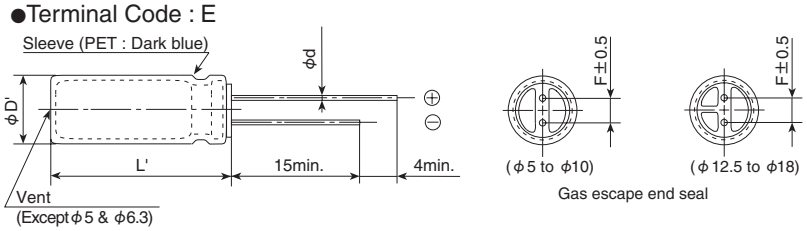
LXZ
↑ Lower Z Downsized
LXY P161
↑ Lower Z
LXV P163

◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−55 to +105℃							
Rated Voltage Range	6.3 to 63Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	63V
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							(at 20℃, 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃.							
	Time	φ5 & 6.3 : 2,000hours φ8 : 3,000hours φ10 : 5,000hours φ12.5 : 7,000hours φ16 & 18 : 8,000hours						
	Capacitance change	≦±20% of the initial value						
	D.F. (tanδ)	≦200% of the initial specified value						
	Leakage current	≦The initial specified value						
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±20% of the initial value						
	D.F. (tanδ)	≦200% of the initial specified value						
	Leakage current	≦The initial specified value						

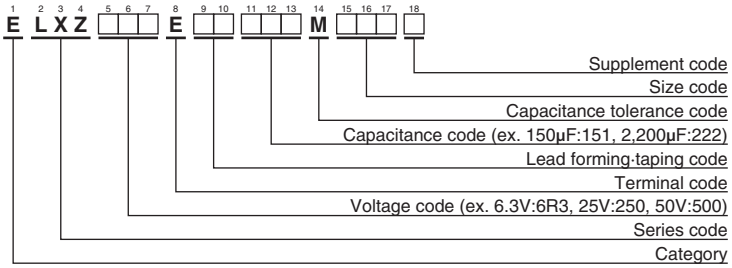
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

LXZ Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	150	5×11.5	0.50	1.0	175	ELXZ6R3E□□151MEB5D
	330	6.3×11.5	0.25	0.50	290	ELXZ6R3E□□331MFB5D
	470	6.3×15	0.18	0.36	400	ELXZ6R3E□□471MF15D
	680	8×12	0.12	0.24	555	ELXZ6R3E□□681MH12D
	820	10×12.5	0.090	0.18	760	ELXZ6R3E□□821MJC5S
	1,000	8×15	0.090	0.18	730	ELXZ6R3E□□102MH15D
	1,200	8×20	0.080	0.16	810	ELXZ6R3E□□122MH20D
	1,200	10×16	0.068	0.136	1,050	ELXZ6R3E□□122MJ16S
	1,500	10×20	0.052	0.104	1,220	ELXZ6R3E□□152MJ20S
	2,200	10×25	0.045	0.090	1,440	ELXZ6R3E□□222MJ25S
	2,700	10×30	0.037	0.074	1,690	ELXZ6R3E□□272MJ30S
	3,300	12.5×20	0.038	0.076	1,660	ELXZ6R3E□□332MK20S
	3,900	12.5×25	0.030	0.060	1,950	ELXZ6R3E□□392MK25S
	4,700	12.5×30	0.025	0.050	2,310	ELXZ6R3E□□472MK30S
	5,600	12.5×35	0.022	0.044	2,510	ELXZ6R3E□□562MK35S
	5,600	16×20	0.029	0.058	2,210	ELXZ6R3E□□562ML20S
	6,800	12.5×40	0.017	0.034	2,870	ELXZ6R3E□□682MK40S
	6,800	16×25	0.022	0.044	2,560	ELXZ6R3E□□682ML25S
	6,800	18×20	0.028	0.056	2,490	ELXZ6R3E□□682MM20S
	8,200	16×30	0.019	0.038	3,010	ELXZ6R3E□□822ML30S
	10,000	16×35	0.017	0.034	3,150	ELXZ6R3E□□103ML35S
	10,000	18×25	0.020	0.040	2,740	ELXZ6R3E□□103MM25S
	12,000	16×40	0.015	0.030	3,710	ELXZ6R3E□□123ML40S
	12,000	18×30	0.018	0.036	3,330	ELXZ6R3E□□123MM30S
	15,000	18×35	0.016	0.032	3,680	ELXZ6R3E□□153MM35S
	18,000	18×40	0.015	0.030	3,800	ELXZ6R3E□□183MM40S
10	100	5×11.5	0.50	1.0	175	ELXZ100E□□101MEB5D
	220	6.3×11.5	0.25	0.50	290	ELXZ100E□□221MFB5D
	330	6.3×15	0.18	0.36	400	ELXZ100E□□331MF15D
	470	8×12	0.12	0.24	555	ELXZ100E□□471MH12D
	680	8×15	0.090	0.18	730	ELXZ100E□□681MH15D
	680	10×12.5	0.090	0.18	760	ELXZ100E□□681MJC5S
	1,000	8×20	0.080	0.16	810	ELXZ100E□□102MH20D
	1,000	10×16	0.068	0.136	1,050	ELXZ100E□□102MJ16S
	1,200	10×20	0.052	0.104	1,220	ELXZ100E□□122MJ20S
	1,500	10×25	0.045	0.090	1,440	ELXZ100E□□152MJ25S
	1,800	10×30	0.037	0.074	1,690	ELXZ100E□□182MJ30S
	2,200	12.5×20	0.038	0.076	1,660	ELXZ100E□□222MK20S
	3,300	12.5×25	0.030	0.060	1,950	ELXZ100E□□332MK25S
	3,900	12.5×30	0.025	0.050	2,310	ELXZ100E□□392MK30S
	3,900	16×20	0.029	0.058	2,210	ELXZ100E□□392ML20S
	4,700	12.5×35	0.022	0.044	2,510	ELXZ100E□□472MK35S
	5,600	12.5×40	0.017	0.034	2,870	ELXZ100E□□562MK40S
	5,600	16×25	0.022	0.044	2,560	ELXZ100E□□562ML25S
	5,600	18×20	0.028	0.056	2,490	ELXZ100E□□562MM20S
	6,800	16×30	0.019	0.038	3,010	ELXZ100E□□682ML30S
	6,800	18×25	0.020	0.040	2,740	ELXZ100E□□682MM25S
	8,200	16×35	0.017	0.034	3,150	ELXZ100E□□822ML35S
	8,200	18×30	0.018	0.036	3,330	ELXZ100E□□822MM30S
	10,000	16×40	0.015	0.030	3,710	ELXZ100E□□103ML40S
	10,000	18×35	0.016	0.032	3,680	ELXZ100E□□103MM35S
	12,000	18×40	0.015	0.030	3,800	ELXZ100E□□123MM40S
16	47	5×11.5	0.50	1.0	175	ELXZ160E□□470MEB5D
	100	6.3×11.5	0.25	0.50	290	ELXZ160E□□101MFB5D
	220	6.3×15	0.18	0.36	400	ELXZ160E□□221MF15D
	330	8×12	0.12	0.24	555	ELXZ160E□□331MH12D
	470	8×15	0.090	0.18	730	ELXZ160E□□471MH15D
	470	10×12.5	0.090	0.18	760	ELXZ160E□□471MJC5S
	560	8×20	0.080	0.16	810	ELXZ160E□□561MH20D
	680	10×16	0.068	0.136	1,050	ELXZ160E□□681MJ16S
	1,000	10×20	0.052	0.104	1,220	ELXZ160E□□102MJ20S
	1,200	10×25	0.045	0.090	1,440	ELXZ160E□□122MJ25S
	1,500	10×30	0.037	0.074	1,690	ELXZ160E□□152MJ30S
	1,500	12.5×20	0.038	0.076	1,660	ELXZ160E□□152MK20S
	2,200	12.5×25	0.030	0.060	1,950	ELXZ160E□□222MK25S
	2,700	12.5×30	0.025	0.050	2,310	ELXZ160E□□272MK30S
	2,700	16×20	0.029	0.058	2,210	ELXZ160E□□272ML20S
16	3,300	12.5×35	0.022	0.044	2,510	ELXZ160E□□332MK35S
	3,900	12.5×40	0.017	0.034	2,870	ELXZ160E□□392MK40S
	3,900	16×25	0.022	0.044	2,560	ELXZ160E□□392ML25S
	3,900	18×20	0.028	0.056	2,490	ELXZ160E□□392MM20S
	4,700	16×30	0.019	0.038	3,010	ELXZ160E□□472ML30S
	4,700	18×25	0.020	0.040	2,740	ELXZ160E□□472MM25S
	5,600	16×35	0.017	0.034	3,150	ELXZ160E□□562ML35S
	5,600	18×30	0.018	0.036	3,330	ELXZ160E□□562MM30S
	6,800	16×40	0.015	0.030	3,710	ELXZ160E□□682ML40S
	8,200	18×35	0.016	0.032	3,680	ELXZ160E□□822MM35S
	10,000	18×40	0.015	0.030	3,800	ELXZ160E□□103MM40S
25	47	5×11.5	0.50	1.0	175	ELXZ250E□□470MEB5D
	100	6.3×11.5	0.25	0.50	290	ELXZ250E□□101MFB5D
	150	6.3×15	0.18	0.36	400	ELXZ250E□□151MF15D
	220	8×12	0.12	0.24	555	ELXZ250E□□221MH12D
	330	8×15	0.090	0.18	730	ELXZ250E□□331MH15D
	330	10×12.5	0.090	0.18	760	ELXZ250E□□331MJC5S
	390	8×20	0.080	0.16	810	ELXZ250E□□391MH20D
	470	10×16	0.068	0.136	1,050	ELXZ250E□□471MJ16S
	680	10×20	0.052	0.104	1,220	ELXZ250E□□681MJ20S
	820	10×25	0.045	0.090	1,440	ELXZ250E□□821MJ25S
	1,000	10×30	0.037	0.074	1,690	ELXZ250E□□102MJ30S
	1,000	12.5×20	0.038	0.076	1,660	ELXZ250E□□102MK20S
	1,500	12.5×25	0.030	0.060	1,950	ELXZ250E□□152MK25S
	1,800	12.5×30	0.025	0.050	2,310	ELXZ250E□□182MK30S
	1,800	16×20	0.029	0.058	2,210	ELXZ250E□□182ML20S
	2,200	12.5×35	0.022	0.044	2,510	ELXZ250E□□222MK35S
	2,200	18×20	0.028	0.056	2,490	ELXZ250E□□222MM20S
	2,700	12.5×40	0.017	0.034	2,870	ELXZ250E□□272MK40S
	2,700	16×25	0.022	0.044	2,560	ELXZ250E□□272ML25S
	3,300	16×30	0.019	0.038	3,010	ELXZ250E□□332ML30S
	3,300	18×25	0.020	0.040	2,740	ELXZ250E□□332MM25S
	3,900	16×35	0.017	0.034	3,150	ELXZ250E□□392ML35S
	3,900	18×30	0.018	0.036	3,330	ELXZ250E□□392MM30S
	4,700	16×40	0.015	0.030	3,710	ELXZ250E□□472ML40S
	4,700	18×35	0.016	0.032	3,680	ELXZ250E□□472MM35S
	5,600	18×40	0.015	0.030	3,800	ELXZ250E□□562MM40S
35	33	5×11.5	0.50	1.0	175	ELXZ350E□□330MEB5D
	56	6.3×11.5	0.25	0.50	290	ELXZ350E□□560MFB5D
	100	6.3×15	0.18	0.36	400	ELXZ350E□□101MF15D
	150	8×12	0.12	0.24	555	ELXZ350E□□151MH12D
	220	8×15	0.090	0.18	730	ELXZ350E□□221MH15D
	220	10×12.5	0.090	0.18	760	ELXZ350E□□221MJC5S
	270	8×20	0.080	0.16	810	ELXZ350E□□271MH20D
	330	10×16	0.068	0.136	1,050	ELXZ350E□□331MJ16S
	470	10×20	0.052	0.104	1,220	ELXZ350E□□471MJ20S
	560	10×25	0.045	0.090	1,440	ELXZ350E□□561MJ25S
	680	10×30	0.037	0.074	1,690	ELXZ350E□□681MJ30S
	680	12.5×20	0.038	0.076	1,660	ELXZ350E□□681MK20S
	1,000	12.5×25	0.030	0.060	1,950	ELXZ350E□□102MK25S
	1,200	12.5×30	0.025	0.050	2,310	ELXZ350E□□122MK30S
	1,200	16×20	0.029	0.058	2,210	ELXZ350E□□122ML20S
	1,500	12.5×35	0.022	0.044	2,510	ELXZ350E□□152MK35S
	1,800	12.5×40	0.017	0.034	2,870	ELXZ350E□□182MK40S
	1,800	16×25	0.022	0.044	2,560	ELXZ350E□□182ML25S
	1,800	18×20	0.028	0.056	2,490	ELXZ350E□□182MM20S
	2,200	16×30	0.019	0.038	3,010	ELXZ350E□□222ML30S
	2,200	18×25	0.020	0.040	2,740	ELXZ350E□□222MM25S
	2,700	16×35	0.017	0.034	3,150	ELXZ350E□□272ML35S
	2,700	18×30	0.018	0.036	3,330	ELXZ350E□□272MM30S
	3,300	16×40	0.015	0.030	3,710	ELXZ350E□□332ML40S
	3,300	18×35	0.016	0.032	3,680	ELXZ350E□□332MM35S
	3,900	18×40	0.015	0.030	3,800	ELXZ350E□□392MM40S
50	22	5×11.5	0.90	1.8	155	ELXZ500E□□220MEB5D
	47	6.3×11.5	0.45	0.90	260	ELXZ500E□□470MFB5D
	68	6.3×15	0.31	0.62	360	ELXZ500E□□680MF15D
	100	8×12	0.22	0.44	485	ELXZ500E□□101MH12D

□□ : Enter the appropriate lead forming or taping code.

LXZ Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max/100kHz)		Rated ripple current (mArms/105℃, 100kHz)	Part No.
			20℃	-10℃		
50	120	8×15	0.16	0.32	635	ELXZ500E□□121MH15D
	120	10×12.5	0.16	0.32	620	ELXZ500E□□121MJC5S
	180	8×20	0.12	0.24	730	ELXZ500E□□181MH20D
	180	10×16	0.13	0.26	850	ELXZ500E□□181MJ16S
	220	10×20	0.088	0.18	1,050	ELXZ500E□□221MJ20S
	330	10×25	0.073	0.15	1,250	ELXZ500E□□331MJ25S
	390	10×30	0.054	0.11	1,500	ELXZ500E□□391MJ30S
	390	12.5×20	0.059	0.12	1,480	ELXZ500E□□391MK20S
	560	12.5×25	0.044	0.088	1,840	ELXZ500E□□561MK25S
	680	12.5×30	0.039	0.078	2,220	ELXZ500E□□681MK30S
	680	16×20	0.048	0.096	1,840	ELXZ500E□□681ML20S
	820	12.5×35	0.033	0.066	2,290	ELXZ500E□□821MK35S
	820	18×20	0.042	0.084	1,980	ELXZ500E□□821MM20S
	1,000	12.5×40	0.029	0.058	2,500	ELXZ500E□□102MK40S
	1,000	16×25	0.034	0.068	2,240	ELXZ500E□□102ML25S
	1,200	16×30	0.028	0.056	2,700	ELXZ500E□□122ML30S
	1,200	18×25	0.029	0.058	2,610	ELXZ500E□□122MM25S
	1,500	16×35	0.025	0.050	2,800	ELXZ500E□□152ML35S
	1,800	16×40	0.021	0.042	3,200	ELXZ500E□□182ML40S
	1,800	18×30	0.025	0.050	3,000	ELXZ500E□□182MM30S
	2,200	18×35	0.023	0.046	3,100	ELXZ500E□□222MM35S
	2,700	18×40	0.020	0.040	3,400	ELXZ500E□□272MM40S
63	12	5×11.5	1.9	4.0	145	ELXZ630E□□120MEB5D
	22	6.3×11.5	1.0	2.0	240	ELXZ630E□□220MFB5D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max/100kHz)		Rated ripple current (mArms/105℃, 100kHz)	Part No.
			20℃	-10℃		
63	39	6.3×15	0.61	1.4	330	ELXZ630E□□390MF15D
	68	8×12	0.34	0.75	405	ELXZ630E□□680MH12D
	100	8×15	0.27	0.65	535	ELXZ630E□□101MH15D
	100	10×12.5	0.255	0.51	540	ELXZ630E□□101MJC5S
	120	10×16	0.19	0.38	600	ELXZ630E□□121MJ16S
	150	8×20	0.21	0.52	690	ELXZ630E□□151MH20D
	180	10×20	0.145	0.29	890	ELXZ630E□□181MJ20S
	220	10×25	0.13	0.26	1,050	ELXZ630E□□221MJ25S
	330	10×30	0.090	0.18	1,300	ELXZ630E□□331MJ30S
	330	12.5×20	0.085	0.17	1,290	ELXZ630E□□331MK20S
	390	12.5×25	0.070	0.14	1,720	ELXZ630E□□391MK25S
	470	12.5×30	0.055	0.11	2,090	ELXZ630E□□471MK30S
	470	16×20	0.059	0.12	1,770	ELXZ630E□□471ML20S
	680	12.5×35	0.047	0.094	2,270	ELXZ630E□□681MK35S
	680	16×25	0.050	0.10	2,160	ELXZ630E□□681ML25S
	680	18×20	0.055	0.11	2,290	ELXZ630E□□681MM20S
	820	12.5×40	0.042	0.084	2,560	ELXZ630E□□821MK40S
	820	16×30	0.043	0.086	2,670	ELXZ630E□□821ML30S
	820	18×25	0.043	0.086	2,590	ELXZ630E□□821MM25S
	1,000	16×35	0.036	0.072	2,770	ELXZ630E□□102ML35S
	1,200	16×40	0.030	0.060	2,850	ELXZ630E□□122ML40S
	1,200	18×30	0.032	0.064	2,950	ELXZ630E□□122MM30S
	1,500	18×35	0.030	0.060	3,100	ELXZ630E□□152MM35S
	1,800	18×40	0.025	0.050	3,210	ELXZ630E□□182MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
12 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 18,000	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

LXY Series

- Adoption of innovative electrolyte and new technologies
- Endurance with ripple current : 2,000 to 8,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

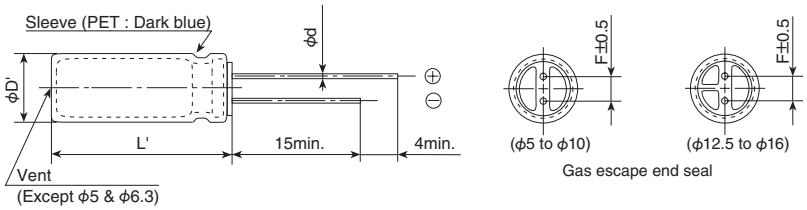
LXZ P158
Lower Z
Downsized
LXY
Lower Z
LXV P163

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−55 to +105℃
Rated Voltage Range	10 to 63Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc): 10V / 16V / 25V / 35V / 50V / 63V tanδ (Max.): 0.19 / 0.16 / 0.14 / 0.12 / 0.10 / 0.10 When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Z(−55℃)/Z(+20℃): 10 to 50Vdc : 3max. / 63Vdc : 6max. (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃. Time: φ5 & 6.3 : 2,000hours φ8 : 3,000hours φ10 : 5,000hours φ12.5 : 7,000hours φ16 & 18 : 8,000hours Capacitance change: ≦±20% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. Capacitance change: ≦±20% of the initial value D.F. (tanδ): ≦200% of the initial specified value Leakage current: ≦The initial specified value

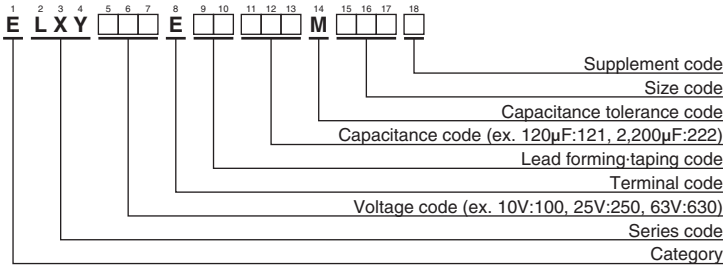
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
φD'	φD+0.5max.					
L'	L+1.5max.					

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
10 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 8,200	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise.
When long life performance is required in actual use, the rms ripple current has to be reduced.

LXY Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
10	82	5×11.5	0.75	1.5	163	ELXY100E□□820MEB5D
	180	6.3×11.5	0.35	0.70	273	ELXY100E□□181MFB5D
	220	6.3×15	0.25	0.50	390	ELXY100E□□221MF15D
	330	8×12	0.17	0.34	445	ELXY100E□□331MH12D
	390	10×12.5	0.12	0.24	625	ELXY100E□□391MJC5S
	470	8×15	0.13	0.26	555	ELXY100E□□471MH15D
	680	8×20	0.095	0.19	740	ELXY100E□□681MH20D
	680	10×16	0.084	0.17	825	ELXY100E□□681MJ16S
	1,000	10×20	0.062	0.13	1,040	ELXY100E□□102MJ20S
	1,200	10×25	0.052	0.11	1,260	ELXY100E□□122MJ25S
	1,500	10×30	0.044	0.088	1,440	ELXY100E□□152MJ30S
	1,800	12.5×20	0.046	0.092	1,340	ELXY100E□□182MK20S
	2,200	12.5×25	0.034	0.068	1,690	ELXY100E□□222MK25S
	2,700	12.5×30	0.030	0.060	1,950	ELXY100E□□272MK30S
	3,300	12.5×35	0.024	0.048	2,220	ELXY100E□□332MK35S
	3,300	16×20	0.038	0.076	1,630	ELXY100E□□332ML20S
	3,900	12.5×40	0.022	0.044	2,390	ELXY100E□□392MK40S
	3,900	16×25	0.028	0.056	2,070	ELXY100E□□392ML25S
	5,600	16×30	0.025	0.050	2,350	ELXY100E□□562ML30S
	6,800	16×35	0.022	0.044	2,550	ELXY100E□□682ML35S
	8,200	16×40	0.018	0.036	2,900	ELXY100E□□822ML40S
16	56	5×11.5	0.75	1.5	163	ELXY160E□□560MEB5D
	120	6.3×11.5	0.35	0.70	273	ELXY160E□□121MFB5D
	180	6.3×15	0.25	0.50	390	ELXY160E□□181MF15D
	270	8×12	0.17	0.34	445	ELXY160E□□271MH12D
	270	10×12.5	0.12	0.24	625	ELXY160E□□271MJC5S
	330	8×15	0.13	0.26	555	ELXY160E□□331MH15D
	470	8×20	0.095	0.19	740	ELXY160E□□471MH20D
	470	10×16	0.084	0.17	825	ELXY160E□□471MJ16S
	680	10×20	0.062	0.13	1,040	ELXY160E□□681MJ20S
	820	10×25	0.052	0.11	1,260	ELXY160E□□821MJ25S
	1,200	10×30	0.044	0.088	1,440	ELXY160E□□122MJ30S
	1,200	12.5×20	0.046	0.092	1,340	ELXY160E□□122MK20S
	1,500	12.5×25	0.034	0.068	1,690	ELXY160E□□152MK25S
	2,200	12.5×30	0.030	0.060	1,950	ELXY160E□□222MK30S
	2,200	16×20	0.038	0.076	1,630	ELXY160E□□222ML20S
	2,700	12.5×35	0.024	0.048	2,220	ELXY160E□□272MK35S
	2,700	16×25	0.028	0.056	2,070	ELXY160E□□272ML25S
	3,300	12.5×40	0.022	0.044	2,390	ELXY160E□□332MK40S
	3,900	16×30	0.025	0.050	2,350	ELXY160E□□392ML30S
	4,700	16×35	0.022	0.044	2,550	ELXY160E□□472ML35S
	5,600	16×40	0.018	0.036	2,900	ELXY160E□□562ML40S
25	39	5×11.5	0.75	1.5	163	ELXY250E□□390MEB5D
	82	6.3×11.5	0.35	0.70	273	ELXY250E□□820MFB5D
	120	6.3×15	0.25	0.50	390	ELXY250E□□121MF15D
	150	8×12	0.17	0.34	445	ELXY250E□□151MH12D
	180	10×12.5	0.12	0.24	625	ELXY250E□□181MJC5S
	220	8×15	0.13	0.26	555	ELXY250E□□221MH15D
	330	8×20	0.095	0.19	740	ELXY250E□□331MH20D
	330	10×16	0.084	0.17	825	ELXY250E□□331MJ16S
	470	10×20	0.062	0.13	1,040	ELXY250E□□471MJ20S
	560	10×25	0.052	0.11	1,260	ELXY250E□□561MJ25S
	820	10×30	0.044	0.088	1,440	ELXY250E□□821MJ30S
	820	12.5×20	0.046	0.092	1,340	ELXY250E□□821MK20S
	1,000	12.5×25	0.034	0.068	1,690	ELXY250E□□102MK25S
	1,500	12.5×30	0.030	0.060	1,950	ELXY250E□□152MK30S
	1,500	16×20	0.038	0.076	1,630	ELXY250E□□152ML20S
	1,800	12.5×35	0.024	0.048	2,220	ELXY250E□□182MK35S
	1,800	16×25	0.028	0.056	2,070	ELXY250E□□182ML25S
	2,200	12.5×40	0.022	0.044	2,390	ELXY250E□□222MK40S
	2,700	16×30	0.025	0.050	2,350	ELXY250E□□272ML30S
	3,300	16×35	0.022	0.044	2,550	ELXY250E□□332ML35S
	3,900	16×40	0.018	0.036	2,900	ELXY250E□□392ML40S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
35	27	5×11.5	0.75	1.5	163	ELXY350E□□270MEB5D
	56	6.3×11.5	0.35	0.70	273	ELXY350E□□560MFB5D
	82	6.3×15	0.25	0.50	390	ELXY350E□□820MF15D
	120	8×12	0.17	0.34	445	ELXY350E□□121MH12D
	120	10×12.5	0.12	0.24	625	ELXY350E□□121MJC5S
	180	8×15	0.13	0.26	555	ELXY350E□□181MH15D
	220	8×20	0.095	0.19	740	ELXY350E□□221MH20D
	220	10×16	0.084	0.17	825	ELXY350E□□221MJ16S
	330	10×20	0.062	0.13	1,040	ELXY350E□□331MJ20S
	390	10×25	0.052	0.11	1,260	ELXY350E□□391MJ25S
	560	10×30	0.044	0.088	1,440	ELXY350E□□561MJ30S
	560	12.5×20	0.046	0.092	1,340	ELXY350E□□561MK20S
	680	12.5×25	0.034	0.068	1,690	ELXY350E□□681MK25S
	1,000	12.5×30	0.030	0.060	1,950	ELXY350E□□102MK30S
	1,000	16×20	0.038	0.076	1,630	ELXY350E□□102ML20S
	1,200	12.5×35	0.024	0.048	2,220	ELXY350E□□122MK35S
	1,200	16×25	0.028	0.056	2,070	ELXY350E□□122ML25S
	1,500	12.5×40	0.022	0.044	2,390	ELXY350E□□152MK40S
	1,800	16×30	0.025	0.050	2,350	ELXY350E□□182ML30S
	2,200	16×35	0.022	0.044	2,550	ELXY350E□□222ML35S
	2,700	16×40	0.018	0.036	2,900	ELXY350E□□272ML40S
50	18	5×11.5	1.2	2.4	129	ELXY500E□□180MEB5D
	39	6.3×11.5	0.54	1.1	219	ELXY500E□□390MFB5D
	56	6.3×15	0.34	0.68	310	ELXY500E□□560MF15D
	68	8×12	0.30	0.60	340	ELXY500E□□680MH12D
	82	8×15	0.20	0.40	470	ELXY500E□□820MH15D
	82	10×12.5	0.20	0.40	480	ELXY500E□□820MJC5S
	120	8×20	0.14	0.28	610	ELXY500E□□121MH20D
	120	10×16	0.13	0.26	755	ELXY500E□□121MJ16S
	180	10×20	0.088	0.18	945	ELXY500E□□181MJ20S
	220	10×25	0.073	0.15	1,150	ELXY500E□□221MJ25S
	330	10×30	0.054	0.11	1,260	ELXY500E□□331MJ30S
	330	12.5×20	0.059	0.12	1,190	ELXY500E□□331MK20S
	470	12.5×25	0.044	0.088	1,490	ELXY500E□□471MK25S
	560	12.5×30	0.039	0.078	1,720	ELXY500E□□561MK30S
	680	12.5×35	0.033	0.066	1,890	ELXY500E□□681MK35S
	680	16×20	0.050	0.10	1,420	ELXY500E□□681ML20S
	820	12.5×40	0.029	0.058	2,030	ELXY500E□□821MK40S
	820	16×25	0.034	0.068	1,880	ELXY500E□□821ML25S
	1,000	16×30	0.030	0.060	2,150	ELXY500E□□102ML30S
	1,200	16×35	0.027	0.054	2,320	ELXY500E□□122ML35S
	1,500	16×40	0.024	0.048	2,540	ELXY500E□□152ML40S
63	10	5×11.5	1.9	4.8	103	ELXY630E□□100MEB5D
	18	6.3×11.5	1.0	2.5	161	ELXY630E□□180MFB5D
	33	6.3×15	0.61	1.6	233	ELXY630E□□330MF15D
	47	8×12	0.47	1.2	274	ELXY630E□□470MH12D
	56	10×12.5	0.27	0.68	418	ELXY630E□□560MJC5S
	68	8×15	0.34	0.85	360	ELXY630E□□680MH15D
	68	10×16	0.21	0.53	525	ELXY630E□□680MJ16S
	82	8×20	0.21	0.53	500	ELXY630E□□820MH20D
	120	10×20	0.16	0.40	650	ELXY630E□□121MJ20S
	150	10×25	0.13	0.33	783	ELXY630E□□151MJ25S
	180	10×30	0.10	0.25	960	ELXY630E□□181MJ30S
	220	12.5×20	0.11	0.28	870	ELXY630E□□221MK20S
	270	12.5×25	0.074	0.19	1,150	ELXY630E□□271MK25S
	330	16×20	0.085	0.22	1,100	ELXY630E□□331ML20S
	390	12.5×30	0.068	0.17	1,280	ELXY630E□□391MK30S
	470	12.5×35	0.063	0.16	1,390	ELXY630E□□471MK35S
	470	16×25	0.055	0.14	1,480	ELXY630E□□471ML25S
	560	12.5×40	0.051	0.13	1,530	ELXY630E□□561MK40S
	680	16×30	0.046	0.12	1,720	ELXY630E□□681ML30S
	820	16×35	0.040	0.10	1,910	ELXY630E□□821ML35S
	1,000	16×40	0.036	0.09	2,070	ELXY630E□□102ML40S

□□ : Enter the appropriate lead forming or taping code.

LXV Series

- Low impedance
- Endurance with ripple current : 2,000 to 5,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

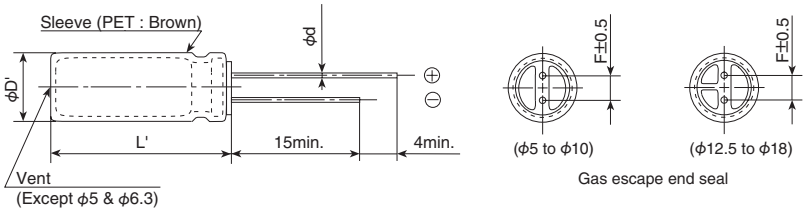
LXY P161
Lower Z
LXV
Lower Z
Longer life
KMG P129

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−55 to +105℃
Rated Voltage Range	6.3 to 100Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc) 6.3V 10V 16V 25V 35V 50V 63V 80V 100V tanδ (Max.) 0.22 0.19 0.16 0.14 0.12 0.10 0.10 0.09 0.08 When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)
Low Temperature Characteristics	Capacitance change ΔC (−55℃ /+20℃) 0.7min. Max. impedance ratio (−55℃ /+20℃) 3max.(6.3Vdc : 4max.) (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105℃. Time : φ5 to 6.3 : 2,000hours φ8 & 10 : 3,000hours φ12.5 to φ18 : 5,000hours Capacitance change : ≦±20% of the initial value D.F. (tanδ) : ≦200% of the initial specified value Leakage current : ≦The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. Capacitance change : ≦±20% of the initial value D.F. (tanδ) : ≦200% of the initial specified value Leakage current : ≦The initial specified value

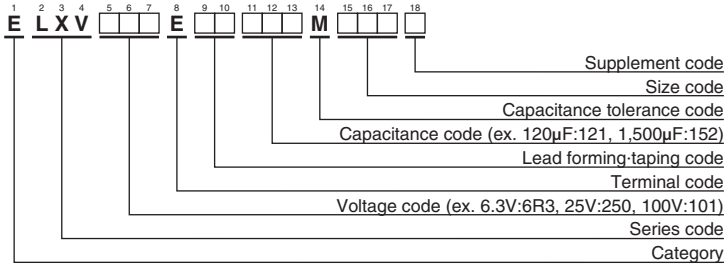
◆DIMENSIONS [mm]

●Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

LXV Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
6.3	120	5×11.5	0.72	1.8	165	ELXV6R3E□□121MEB5D
	220	6.3×11.5	0.38	0.95	255	ELXV6R3E□□221MFB5D
	330	6.3×15	0.27	0.68	330	ELXV6R3E□□331MF15D
	390	8×12	0.20	0.50	415	ELXV6R3E□□391MH12D
	470	10×12.5	0.12	0.30	635	ELXV6R3E□□471MJC5S
	560	8×15	0.16	0.40	495	ELXV6R3E□□561MH15D
	680	10×16	0.084	0.21	825	ELXV6R3E□□681MJ16S
	820	8×20	0.11	0.28	640	ELXV6R3E□□821MH20D
	1,200	10×20	0.062	0.16	1,060	ELXV6R3E□□122MJ20S
	1,500	10×25	0.052	0.13	1,260	ELXV6R3E□□152MJ25S
	2,200	10×30	0.044	0.11	1,450	ELXV6R3E□□222MJ30S
	2,200	12.5×20	0.046	0.12	1,360	ELXV6R3E□□222MK20S
	2,700	12.5×25	0.034	0.085	1,700	ELXV6R3E□□272MK25S
	3,900	12.5×30	0.030	0.075	1,980	ELXV6R3E□□392MK30S
	3,900	16×20	0.038	0.095	1,770	ELXV6R3E□□392ML20S
	4,700	12.5×35	0.027	0.068	2,230	ELXV6R3E□□472MK35S
	5,600	12.5×40	0.024	0.060	2,460	ELXV6R3E□□562MK40S
	5,600	16×25	0.028	0.070	2,190	ELXV6R3E□□562ML25S
	5,600	18×20	0.036	0.090	1,940	ELXV6R3E□□562MM20S
	6,800	16×30	0.025	0.063	2,510	ELXV6R3E□□682ML30S
	6,800	18×25	0.027	0.068	2,350	ELXV6R3E□□682MM25S
	8,200	16×35	0.022	0.055	2,770	ELXV6R3E□□822ML35S
	10,000	16×40	0.018	0.045	3,110	ELXV6R3E□□103ML40S
	10,000	18×30	0.024	0.060	2,720	ELXV6R3E□□103MM30S
	12,000	18×35	0.021	0.053	3,050	ELXV6R3E□□123MM35S
	15,000	18×40	0.017	0.043	3,300	ELXV6R3E□□153MM40S
10	82	5×11.5	0.72	1.8	165	ELXV100E□□820MEB5D
	180	6.3×11.5	0.38	0.95	255	ELXV100E□□181MFB5D
	270	6.3×15	0.27	0.68	330	ELXV100E□□271MF15D
	330	8×12	0.20	0.50	415	ELXV100E□□331MH12D
	390	10×12.5	0.12	0.30	635	ELXV100E□□391MJC5S
	470	8×15	0.16	0.40	495	ELXV100E□□471MH15D
	680	8×20	0.11	0.28	640	ELXV100E□□681MH20D
	680	10×16	0.084	0.21	825	ELXV100E□□681MJ16S
	1,000	10×20	0.062	0.16	1,060	ELXV100E□□102MJ20S
	1,200	10×25	0.052	0.13	1,260	ELXV100E□□122MJ25S
	1,500	10×30	0.044	0.11	1,450	ELXV100E□□152MJ30S
	1,800	12.5×20	0.046	0.12	1,360	ELXV100E□□182MK20S
	2,200	12.5×25	0.034	0.085	1,700	ELXV100E□□222MK25S
	2,700	12.5×30	0.030	0.075	1,980	ELXV100E□□272MK30S
	3,300	12.5×35	0.027	0.068	2,230	ELXV100E□□332MK35S
	3,300	16×20	0.038	0.095	1,770	ELXV100E□□332ML20S
	3,900	12.5×40	0.024	0.060	2,460	ELXV100E□□392MK40S
	3,900	16×25	0.028	0.070	2,190	ELXV100E□□392ML25S
	3,900	18×20	0.036	0.090	1,940	ELXV100E□□392MM20S
	4,700	18×25	0.027	0.068	2,350	ELXV100E□□472MM25S
	5,600	16×30	0.025	0.063	2,510	ELXV100E□□562ML30S
	6,800	16×35	0.022	0.055	2,770	ELXV100E□□682ML35S
	6,800	18×30	0.024	0.060	2,720	ELXV100E□□682MM30S
	8,200	16×40	0.018	0.045	3,110	ELXV100E□□822ML40S
	8,200	18×35	0.021	0.053	3,050	ELXV100E□□822MM35S
	10,000	18×40	0.017	0.043	3,300	ELXV100E□□103MM40S
16	56	5×11.5	0.72	1.8	165	ELXV160E□□560MEB5D
	120	6.3×11.5	0.38	0.95	255	ELXV160E□□121MFB5D
	180	6.3×15	0.27	0.68	330	ELXV160E□□181MF15D
	270	8×12	0.20	0.50	415	ELXV160E□□271MH12D
	270	10×12.5	0.12	0.30	635	ELXV160E□□271MJC5S
	330	8×15	0.16	0.40	495	ELXV160E□□331MH15D
	470	8×20	0.11	0.28	640	ELXV160E□□471MH20D
	470	10×16	0.084	0.21	825	ELXV160E□□471MJ16S
	680	10×20	0.062	0.16	1,060	ELXV160E□□681MJ20S
	820	10×25	0.052	0.13	1,260	ELXV160E□□821MJ25S
	1,200	10×30	0.044	0.11	1,450	ELXV160E□□122MJ30S
	1,200	12.5×20	0.046	0.12	1,360	ELXV160E□□122MK20S
	1,500	12.5×25	0.034	0.085	1,700	ELXV160E□□152MK25S
	2,200	12.5×30	0.030	0.075	1,980	ELXV160E□□222MK30S
	2,200	16×20	0.038	0.095	1,770	ELXV160E□□222ML20S
16	2,700	12.5×35	0.027	0.068	2,230	ELXV160E□□272MK35S
	2,700	16×25	0.028	0.070	2,190	ELXV160E□□272ML25S
	3,300	12.5×40	0.024	0.060	2,460	ELXV160E□□332MK40S
	3,300	18×20	0.036	0.090	1,940	ELXV160E□□332MM20S
	3,900	16×30	0.025	0.063	2,510	ELXV160E□□392ML30S
	3,900	18×25	0.027	0.068	2,350	ELXV160E□□392MM25S
	4,700	16×35	0.022	0.055	2,770	ELXV160E□□472ML35S
	4,700	18×30	0.024	0.060	2,720	ELXV160E□□472MM30S
	5,600	16×40	0.018	0.045	3,110	ELXV160E□□562ML40S
	6,800	18×35	0.021	0.053	3,050	ELXV160E□□682MM35S
	8,200	18×40	0.017	0.043	3,300	ELXV160E□□822MM40S
25	39	5×11.5	0.72	1.8	165	ELXV250E□□390MEB5D
	82	6.3×11.5	0.38	0.95	255	ELXV250E□□820MFB5D
	120	6.3×15	0.27	0.68	330	ELXV250E□□121MF15D
	150	8×12	0.20	0.50	415	ELXV250E□□151MH12D
	180	10×12.5	0.12	0.30	635	ELXV250E□□181MJC5S
	220	8×15	0.16	0.40	495	ELXV250E□□221MH15D
	330	8×20	0.11	0.28	640	ELXV250E□□331MH20D
	330	10×16	0.084	0.21	825	ELXV250E□□331MJ16S
	470	10×20	0.062	0.16	1,060	ELXV250E□□471MJ20S
	560	10×25	0.052	0.13	1,260	ELXV250E□□561MJ25S
	820	10×30	0.044	0.11	1,450	ELXV250E□□821MJ30S
	820	12.5×20	0.046	0.12	1,360	ELXV250E□□821MK20S
	1,000	12.5×25	0.034	0.085	1,700	ELXV250E□□102MK25S
	1,500	12.5×30	0.030	0.075	1,980	ELXV250E□□152MK30S
	1,500	16×20	0.038	0.095	1,770	ELXV250E□□152ML20S
	1,800	12.5×35	0.027	0.068	2,230	ELXV250E□□182MK35S
	1,800	16×25	0.028	0.070	2,190	ELXV250E□□182ML25S
	2,200	12.5×40	0.024	0.060	2,460	ELXV250E□□222MK40S
	2,200	18×20	0.036	0.090	1,940	ELXV250E□□222MM20S
	2,700	16×30	0.025	0.063	2,510	ELXV250E□□272ML30S
	2,700	18×25	0.027	0.068	2,350	ELXV250E□□272MM25S
	3,300	16×35	0.022	0.055	2,770	ELXV250E□□332ML35S
	3,300	18×30	0.024	0.060	2,720	ELXV250E□□332MM30S
	3,900	16×40	0.018	0.045	3,110	ELXV250E□□392ML40S
	3,900	18×35	0.021	0.053	3,050	ELXV250E□□392MM35S
	4,700	18×40	0.017	0.043	3,300	ELXV250E□□472MM40S
35	27	5×11.5	0.72	1.8	165	ELXV350E□□270MEB5D
	56	6.3×11.5	0.38	0.95	255	ELXV350E□□560MFB5D
	82	6.3×15	0.27	0.68	330	ELXV350E□□820MF15D
	120	8×12	0.20	0.50	415	ELXV350E□□121MH12D
	120	10×12.5	0.12	0.30	635	ELXV350E□□121MJC5S
	180	8×15	0.16	0.40	495	ELXV350E□□181MH15D
	220	8×20	0.11	0.28	640	ELXV350E□□221MH20D
	220	10×16	0.084	0.21	825	ELXV350E□□221MJ16S
	330	10×20	0.062	0.16	1,060	ELXV350E□□331MJ20S
	390	10×25	0.052	0.13	1,260	ELXV350E□□391MJ25S
	560	10×30	0.044	0.11	1,450	ELXV350E□□561MJ30S
	560	12.5×20	0.046	0.12	1,360	ELXV350E□□561MK20S
	680	12.5×25	0.034	0.085	1,700	ELXV350E□□681MK25S
	1,000	12.5×30	0.030	0.075	1,980	ELXV350E□□102MK30S
	1,000	16×20	0.038	0.095	1,770	ELXV350E□□102ML20S
	1,200	12.5×35	0.027	0.068	2,230	ELXV350E□□122MK35S
	1,200	16×25	0.028	0.070	2,190	ELXV350E□□122ML25S
	1,500	12.5×40	0.024	0.060	2,460	ELXV350E□□152MK40S
	1,500	18×20	0.036	0.090	1,940	ELXV350E□□152MM20S
	1,800	16×30	0.025	0.063	2,510	ELXV350E□□182ML30S
	1,800	18×25	0.027	0.068	2,350	ELXV350E□□182MM25S
	2,200	16×35	0.022	0.055	2,770	ELXV350E□□222ML35S
	2,200	18×30	0.024	0.060	2,720	ELXV350E□□222MM30S
	2,700	16×40	0.018	0.045	3,110	ELXV350E□□272ML40S
	2,700	18×35	0.021	0.053	3,050	ELXV350E□□272MM35S
	3,300	18×40	0.017	0.043	3,300	ELXV350E□□332MM40S
50	18	5×11.5	1.1	3.3	165	ELXV500E□□180MEB5D
	39	6.3×11.5	0.56	1.6	255	ELXV500E□□390MFB5D
	56	6.3×15	0.41	1.2	310	ELXV500E□□560MF15D
	68	8×12	0.29	0.84	415	ELXV500E□□680MH12D

□□ : Enter the appropriate lead forming or taping code.

LXV Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
50	82	8×15	0.24	0.72	505	ELXV500E□□820MH15D
	82	10×12.5	0.16	0.40	530	ELXV500E□□820MJC5S
	120	8×20	0.18	0.52	610	ELXV500E□□121MH20D
	120	10×16	0.12	0.30	755	ELXV500E□□121MJ16S
	180	10×20	0.088	0.22	945	ELXV500E□□181MJ20S
	220	10×25	0.068	0.17	1,150	ELXV500E□□221MJ25S
	330	10×30	0.059	0.15	1,260	ELXV500E□□331MJ30S
	330	12.5×20	0.059	0.15	1,190	ELXV500E□□331MK20S
	470	12.5×25	0.045	0.11	1,500	ELXV500E□□471MK25S
	560	12.5×30	0.039	0.098	1,720	ELXV500E□□561MK30S
	680	12.5×35	0.033	0.083	1,900	ELXV500E□□681MK35S
	680	16×20	0.043	0.11	1,500	ELXV500E□□681ML20S
	820	12.5×40	0.029	0.073	2,120	ELXV500E□□821MK40S
	820	16×25	0.033	0.083	1,880	ELXV500E□□821ML25S
	820	18×20	0.039	0.098	1,660	ELXV500E□□821MM20S
	1,000	16×30	0.029	0.073	2,150	ELXV500E□□102ML30S
	1,000	18×25	0.030	0.075	2,020	ELXV500E□□102MM25S
	1,200	16×35	0.025	0.063	2,320	ELXV500E□□122ML35S
	1,500	16×40	0.021	0.053	2,650	ELXV500E□□152ML40S
	1,500	18×30	0.026	0.065	2,340	ELXV500E□□152MM30S
	1,800	18×35	0.023	0.058	2,620	ELXV500E□□182MM35S
	2,200	18×40	0.020	0.050	2,790	ELXV500E□□222MM40S
63	12	5×11.5	1.9	4.8	100	ELXV630E□□120MEB5D
	27	6.3×11.5	1.1	2.8	160	ELXV630E□□270MFB5D
	39	6.3×15	0.62	1.6	230	ELXV630E□□390MF15D
	47	8×12	0.49	1.3	275	ELXV630E□□470MH12D
	56	10×12.5	0.27	0.68	420	ELXV630E□□560MJC5S
	68	8×15	0.34	0.85	360	ELXV630E□□680MH15D
	68	10×16	0.21	0.53	523	ELXV630E□□680MJ16S
	82	8×20	0.21	0.53	500	ELXV630E□□820MH20D
	120	10×20	0.16	0.40	650	ELXV630E□□121MJ20S
	150	10×25	0.13	0.33	780	ELXV630E□□151MJ25S
	180	10×30	0.10	0.25	960	ELXV630E□□181MJ30S
	220	12.5×20	0.11	0.28	870	ELXV630E□□221MK20S
	270	12.5×25	0.074	0.19	1,150	ELXV630E□□271MK25S
	390	12.5×30	0.068	0.17	1,280	ELXV630E□□391MK30S
	390	16×20	0.085	0.22	1,100	ELXV630E□□391ML20S
	470	12.5×35	0.063	0.16	1,390	ELXV630E□□471MK35S
	470	16×25	0.055	0.14	1,480	ELXV630E□□471ML25S
	560	12.5×40	0.051	0.13	1,530	ELXV630E□□561MK40S
	560	18×20	0.085	0.22	1,170	ELXV630E□□561MM20S
	680	16×30	0.046	0.12	1,720	ELXV630E□□681ML30S
	680	18×25	0.055	0.14	1,520	ELXV630E□□681MM25S
	820	16×35	0.040	0.10	1,910	ELXV630E□□821ML35S
	820	18×30	0.046	0.12	1,770	ELXV630E□□821MM30S
	1,000	16×40	0.036	0.09	2,070	ELXV630E□□102ML40S
	1,000	18×35	0.040	0.10	1,970	ELXV630E□□102MM35S
	1,200	18×40	0.036	0.09	2,130	ELXV630E□□122MM40S
80	8.2	5×11.5	1.9	5.1	100	ELXV800E□□8R2MEB5D
	18	6.3×11.5	1.1	3.0	150	ELXV800E□□180MFB5D

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz) 20℃	Impedance (Ωmax/100kHz) -10℃	Rated ripple current (mArms/105℃, 100kHz)	Part No.
80	27	6.3×15	0.62	1.7	220	ELXV800E□□270MF15D
	33	8×12	0.53	1.5	275	ELXV800E□□330MH12D
	39	10×12.5	0.47	1.3	380	ELXV800E□□390MJC5S
	47	8×15	0.35	0.97	360	ELXV800E□□470MH15D
	56	8×20	0.27	0.74	490	ELXV800E□□560MH20D
	56	10×16	0.33	0.90	500	ELXV800E□□560MJ16S
	82	10×20	0.26	0.70	620	ELXV800E□□820MJ20S
	100	10×25	0.19	0.52	795	ELXV800E□□101MJ25S
	150	10×30	0.15	0.41	955	ELXV800E□□151MJ30S
	150	12.5×20	0.15	0.41	890	ELXV800E□□151MK20S
	180	12.5×25	0.11	0.30	1,040	ELXV800E□□181MK25S
	270	12.5×30	0.094	0.26	1,270	ELXV800E□□271MK30S
	270	16×20	0.11	0.30	1,240	ELXV800E□□271ML20S
	330	12.5×35	0.087	0.24	1,450	ELXV800E□□331MK35S
	330	16×25	0.081	0.22	1,440	ELXV800E□□331ML25S
	390	12.5×40	0.060	0.17	1,610	ELXV800E□□391MK40S
	390	18×20	0.085	0.23	1,450	ELXV800E□□391MM20S
	470	16×30	0.058	0.16	1,790	ELXV800E□□471ML30S
	470	18×25	0.070	0.19	1,650	ELXV800E□□471MM25S
	560	16×35	0.052	0.14	2,000	ELXV800E□□561ML35S
	680	16×40	0.041	0.11	2,200	ELXV800E□□681ML40S
	680	18×30	0.058	0.16	1,850	ELXV800E□□681MM30S
	820	18×35	0.052	0.14	1,990	ELXV800E□□821MM35S
	1,000	18×40	0.041	0.11	2,370	ELXV800E□□102MM40S
100	5.6	5×11.5	1.9	5.1	100	ELXV101E□□5R6MEB5D
	12	6.3×11.5	1.1	3.0	150	ELXV101E□□120MFB5D
	18	6.3×15	0.62	1.7	220	ELXV101E□□180MF15D
	22	8×12	0.53	1.5	275	ELXV101E□□220MH12D
	27	10×12.5	0.47	1.3	380	ELXV101E□□270MJC5S
	33	8×15	0.35	0.97	360	ELXV101E□□330MH15D
	33	10×16	0.33	0.90	500	ELXV101E□□330MJ16S
	39	8×20	0.27	0.74	490	ELXV101E□□390MH20D
	56	10×20	0.26	0.70	620	ELXV101E□□560MJ20S
	68	10×25	0.19	0.52	795	ELXV101E□□680MJ25S
	100	10×30	0.15	0.41	955	ELXV101E□□101MJ30S
	100	12.5×20	0.15	0.41	890	ELXV101E□□101MK20S
	120	12.5×25	0.11	0.30	1,040	ELXV101E□□121MK25S
	180	12.5×30	0.094	0.26	1,270	ELXV101E□□181MK30S
	180	16×20	0.11	0.30	1,240	ELXV101E□□181ML20S
	220	12.5×35	0.087	0.24	1,450	ELXV101E□□221MK35S
	220	16×25	0.081	0.22	1,440	ELXV101E□□221ML25S
	270	12.5×40	0.060	0.17	1,610	ELXV101E□□271MK40S
	270	18×20	0.085	0.23	1,450	ELXV101E□□271MM20S
	330	16×30	0.058	0.16	1,790	ELXV101E□□331ML30S
	330	18×25	0.070	0.19	1,650	ELXV101E□□331MM25S
	390	16×35	0.052	0.14	2,000	ELXV101E□□391ML35S
	390	18×30	0.058	0.16	1,850	ELXV101E□□391MM30S
	470	16×40	0.041	0.11	2,200	ELXV101E□□471ML40S
	560	18×35	0.052	0.14	1,990	ELXV101E□□561MM35S
	680	18×40	0.041	0.11	2,370	ELXV101E□□681MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Rated voltage (Vdc)	Case size φD (mm)	Frequency (Hz) 120	1k	10k	100k	Rated voltage (Vdc)	Case size φD (mm)	Frequency (Hz) 120	1k	10k	100k
6.3 & 10	5 to 8	0.65	0.83	0.95	1.00	35 & 50	5 to 8	0.40	0.66	0.85	1.00
	10 & 12.5	0.70	0.85	0.96	1.00		10 & 12.5	0.50	0.73	0.89	1.00
	16 & 18	0.85	0.92	0.97	1.00		16 & 18	0.60	0.81	0.94	1.00
16 & 25	5 to 8	0.55	0.76	0.91	1.00	63 to 100	5 to 8	0.20	0.55	0.80	1.00
	10 & 12.5	0.65	0.83	0.93	1.00		10 & 12.5	0.35	0.65	0.85	1.00
	16 & 18	0.70	0.87	0.96	1.00		16 & 18	0.50	0.75	0.90	1.00

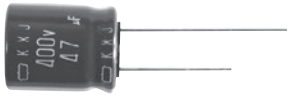
The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise.
When long life performance is required in actual use, the rms ripple current has to be reduced.

KXJ Series Upgrade!

- Downsized and Longer life from current KXG series
- Endurance with ripple current : 8,000 to 12,000 hours at 105℃
- Rated voltage range : 160 to 500V, Capacitance range : 6.8 to 680μF
- For electronic ballast circuits and other long life applications
- Non solvent resistant type
- **RoHS Compliant**

KXJ ↑ Downsized
KXG P170

500V Lineup!

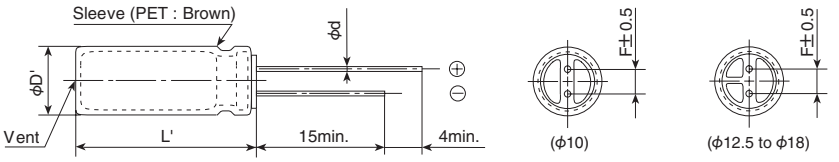


◆SPECIFICATIONS

Items	Characteristics				
Category Temperature Range	−40 to +105℃ (160 to 400Vdc) -25 to +105℃ (420 to 500Vdc)				
Rated Voltage Range	160 to 500Vdc				
Capacitance Tolerance	±20% (M)				(at 20℃, 120Hz)
Leakage Current		After 1 minute	After 5 minutes		
	CV≦1000	I=0.1CV+40	I=0.03CV+15		
	CV＞1000	I=0.04CV+100	I=0.02CV+25		
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)				(at 20℃)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	160 to 250V	350 to 500V		
	tanδ (Max.)	0.20	0.24		(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	160 to 250V	350, 400V	420 to 500V	
	Z(−25℃)/Z(+20℃)	3	5	6	
	Z(−40℃)/Z(+20℃)	6	6	–	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied(the peak voltage shall not exceed the rated voltage) for the specified time at 105℃.				
	Rated voltage (Vdc)	160 to 450V		500V	
	Time	20L：10,000hours、25L to 50L：12,000hours		φ10：8,000hours、φ12.5 to φ18：10.000hours	
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦500% of the initial specified value			

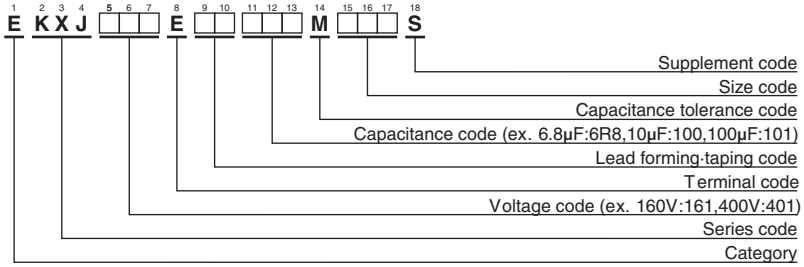
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10	12.5	14.5	16	18
φd	0.6	0.6	0.8	0.8	0.8
F	5.0	5.0	7.5	7.5	7.5
φD'	φD+0.5max.				
L'	L+1.5max.				

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KXJ Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
160	39	10×16	0.20	245	EKXJ161E□□390MJ16S
	56	10×20	0.20	315	EKXJ161E□□560MJ20S
	82	10×25	0.20	415	EKXJ161E□□820MJ25S
	82	10×30	0.20	445	EKXJ161E□□820MJ30S
	100	12.5×20	0.20	575	EKXJ161E□□101MK20S
	120	10×35	0.20	570	EKXJ161E□□121MJ35S
	120	14.5×20	0.20	675	EKXJ161E□□121MU20S
	150	10×40	0.20	665	EKXJ161E□□151MJ40S
	150	10×45	0.20	695	EKXJ161E□□151MJ45S
	150	12.5×25	0.20	765	EKXJ161E□□151MK25S
	180	10×50	0.20	785	EKXJ161E□□181MJ50S
	180	12.5×30	0.20	885	EKXJ161E□□181MK30S
	180	14.5×25	0.20	890	EKXJ161E□□181MU25S
	180	16×20	0.20	855	EKXJ161E□□181ML20S
	220	12.5×35	0.20	1,040	EKXJ161E□□221MK35S
	220	16×25	0.20	1,020	EKXJ161E□□221ML25S
	220	18×20	0.20	990	EKXJ161E□□221MM20S
	270	12.5×40	0.20	1,190	EKXJ161E□□271MK40S
	270	12.5×45	0.20	1,230	EKXJ161E□□271MK45S
	270	14.5×31.5	0.20	1,170	EKXJ161E□□271MUN3S
	270	14.5×35.5	0.20	1,210	EKXJ161E□□271MUP1S
	330	12.5×50	0.20	1,400	EKXJ161E□□331MK50S
	330	14.5×40	0.20	1,385	EKXJ161E□□331MU40S
	330	16×31.5	0.20	1,350	EKXJ161E□□331MLN3S
	330	18×25	0.20	1,290	EKXJ161E□□331MM25S
	390	14.5×45	0.20	1,545	EKXJ161E□□391MU45S
	390	16×35.5	0.20	1,500	EKXJ161E□□391MLP1S
	470	14.5×50	0.20	1,735	EKXJ161E□□471MU50S
	470	16×40	0.20	1,700	EKXJ161E□□471ML40S
	470	16×45	0.20	1,730	EKXJ161E□□471ML45S
	470	18×31.5	0.20	1,660	EKXJ161E□□471MMN3S
	470	18×35.5	0.20	1,715	EKXJ161E□□471MMP1S
	560	16×50	0.20	1,920	EKXJ161E□□561ML50S
	560	18×40	0.20	1,905	EKXJ161E□□561MM40S
	680	18×45	0.20	2,130	EKXJ161E□□681MM45S
	680	18×50	0.20	2,145	EKXJ161E□□681MM50S
200	27	10×16	0.20	200	EKXJ201E□□270MJ16S
	47	10×20	0.20	290	EKXJ201E□□470MJ20S
	56	10×25	0.20	345	EKXJ201E□□560MJ25S
	68	10×30	0.20	405	EKXJ201E□□680MJ30S
	82	12.5×20	0.20	520	EKXJ201E□□820MK20S
	100	10×35	0.20	520	EKXJ201E□□101MJ35S
	100	12.5×25	0.20	625	EKXJ201E□□101MK25S
	100	14.5×20	0.20	615	EKXJ201E□□101MU20S
	120	10×40	0.20	595	EKXJ201E□□121MJ40S
	120	10×45	0.20	620	EKXJ201E□□121MJ45S
	120	12.5×30	0.20	725	EKXJ201E□□121MK30S
	120	16×20	0.20	695	EKXJ201E□□121ML20S
	150	10×50	0.20	720	EKXJ201E□□151MJ50S
	150	12.5×35	0.20	860	EKXJ201E□□151MK35S
	150	14.5×25	0.20	810	EKXJ201E□□151MU25S
	180	14.5×31.5	0.20	955	EKXJ201E□□181MUN3S
	180	16×25	0.20	925	EKXJ201E□□181ML25S
	180	18×20	0.20	895	EKXJ201E□□181MM20S
	220	12.5×40	0.20	1,075	EKXJ201E□□221MK40S
	220	12.5×45	0.20	1,110	EKXJ201E□□221MK45S
	220	14.5×35.5	0.20	1,095	EKXJ201E□□221MUP1S
	220	18×25	0.20	1,050	EKXJ201E□□221MM25S
	270	12.5×50	0.20	1,265	EKXJ201E□□271MK50S
	270	14.5×40	0.20	1,250	EKXJ201E□□271MU40S
	270	14.5×45	0.20	1,290	EKXJ201E□□271MU45S
	270	16×31.5	0.20	1,220	EKXJ201E□□271MLN3S
	270	16×35.5	0.20	1,250	EKXJ201E□□271MLP1S
	330	14.5×50	0.20	1,450	EKXJ201E□□331MU50S
	330	16×40	0.20	1,425	EKXJ201E□□331ML40S
	330	18×31.5	0.20	1,395	EKXJ201E□□331MMN3S
	390	16×45	0.20	1,575	EKXJ201E□□391ML45S
	390	18×35.5	0.20	1,565	EKXJ201E□□391MMP1S
	470	16×50	0.20	1,755	EKXJ201E□□471ML50S
	470	18×40	0.20	1,745	EKXJ201E□□471MM40S
	470	18×45	0.20	1,770	EKXJ201E□□471MM45S
	560	18×50	0.20	1,945	EKXJ201E□□561MM50S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
220	27	10×16	0.20	200	EKXJ221E□□270MJ16S
	39	10×20	0.20	265	EKXJ221E□□390MJ20S
	56	10×25	0.20	345	EKXJ221E□□560MJ25S
	56	10×30	0.20	370	EKXJ221E□□560MJ30S
	68	12.5×20	0.20	475	EKXJ221E□□680MK20S
	82	10×35	0.20	470	EKXJ221E□□820MJ35S
	82	14.5×20	0.20	555	EKXJ221E□□820MU20S
	100	10×40	0.20	545	EKXJ221E□□101MJ40S
	100	10×45	0.20	565	EKXJ221E□□101MJ45S
	100	12.5×25	0.20	625	EKXJ221E□□101MK25S
	120	10×50	0.20	645	EKXJ221E□□121MJ50S
	120	12.5×30	0.20	725	EKXJ221E□□121MK30S
	120	14.5×25	0.20	725	EKXJ221E□□121MU25S
	120	16×20	0.20	695	EKXJ221E□□121ML20S
	150	12.5×35	0.20	860	EKXJ221E□□151MK35S
	150	16×25	0.20	845	EKXJ221E□□151ML25S
	150	18×20	0.20	815	EKXJ221E□□151MM20S
	180	12.5×40	0.20	975	EKXJ221E□□181MK40S
	180	12.5×45	0.20	1,005	EKXJ221E□□181MK45S
	180	14.5×31.5	0.20	955	EKXJ221E□□181MUN3S
	220	12.5×50	0.20	1,145	EKXJ221E□□221MK50S
	220	14.5×35.5	0.20	1,095	EKXJ221E□□221MUP1S
	220	14.5×40	0.20	1,130	EKXJ221E□□221MU40S
	220	16×31.5	0.20	1,100	EKXJ221E□□221MLN3S
	220	18×25	0.20	1,050	EKXJ221E□□221MM25S
	270	14.5×45	0.20	1,285	EKXJ221E□□271MU45S
	270	14.5×50	0.20	1,315	EKXJ221E□□271MU50S
	270	16×35.5	0.20	1,245	EKXJ221E□□271MLP1S
	270	18×31.5	0.20	1,260	EKXJ221E□□271MMN3S
	330	16×40	0.20	1,425	EKXJ221E□□331ML40S
	330	16×45	0.20	1,450	EKXJ221E□□331ML45S
	330	18×35.5	0.20	1,440	EKXJ221E□□331MMP1S
	390	16×50	0.20	1,600	EKXJ221E□□391ML50S
	390	18×40	0.20	1,590	EKXJ221E□□391MM40S
	390	18×45	0.20	1,620	EKXJ221E□□391MM45S
	470	18×50	0.20	1,785	EKXJ221E□□471MM50S
250	22	10×16	0.20	185	EKXJ251E□□220MJ16S
	33	10×20	0.20	240	EKXJ251E□□330MJ20S
	47	10×25	0.20	315	EKXJ251E□□470MJ25S
	47	10×30	0.20	340	EKXJ251E□□470MJ30S
	56	12.5×20	0.20	430	EKXJ251E□□560MK20S
	68	10×35	0.20	430	EKXJ251E□□680MJ35S
	68	14.5×20	0.20	505	EKXJ251E□□680MU20S
	82	10×40	0.20	495	EKXJ251E□□820MJ40S
	82	10×45	0.20	515	EKXJ251E□□820MJ45S
	82	12.5×25	0.20	565	EKXJ251E□□820MK25S
	100	10×50	0.20	585	EKXJ251E□□101MJ50S
	100	12.5×30	0.20	660	EKXJ251E□□101MK30S
	100	14.5×25	0.20	665	EKXJ251E□□101MU25S
	100	16×20	0.20	635	EKXJ251E□□101ML20S
	120	12.5×35	0.20	770	EKXJ251E□□121MK35S
	120	16×25	0.20	755	EKXJ251E□□121ML25S
	120	18×20	0.20	730	EKXJ251E□□121MM20S
	150	12.5×40	0.20	890	EKXJ251E□□151MK40S
	150	12.5×45	0.20	920	EKXJ251E□□151MK45S
	150	14.5×31.5	0.20	870	EKXJ251E□□151MUN3S
	180	12.5×50	0.20	1,035	EKXJ251E□□181MK50S
	180	14.5×35.5	0.20	990	EKXJ251E□□181MUP1S
	180	14.5×40	0.20	1,020	EKXJ251E□□181MU40S
	180	16×31.5	0.20	995	EKXJ251E□□181MLN3S
	180	18×25	0.20	950	EKXJ251E□□181MM25S
	220	14.5×45	0.20	1,160	EKXJ251E□□221MU45S
	220	14.5×50	0.20	1,185	EKXJ251E□□221MU50S
	220	16×35.5	0.20	1,125	EKXJ251E□□221MLP1S
	220	18×31.5	0.20	1,135	EKXJ251E□□221MMN3S
	270	16×40	0.20	1,285	EKXJ251E□□271ML40S
	270	16×45	0.20	1,310	EKXJ251E□□271ML45S
	270	18×35.5	0.20	1,300	EKXJ251E□□271MMP1S
	330	16×50	0.20	1,475	EKXJ251E□□331ML50S
	330	18×40	0.20	1,460	EKXJ251E□□331MM40S
	330	18×45	0.20	1,485	EKXJ251E□□331MM45S
	390	18×50	0.20	1,625	EKXJ251E□□391MM50S

□□ : Enter the appropriate lead forming or taping code.

KXJ Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
350	12	10×16	0.24	135	EKXJ351E□□120MJ16S
	22	10×20	0.24	200	EKXJ351E□□220MJ20S
	27	10×25	0.24	240	EKXJ351E□□270MJ25S
	27	10×30	0.24	255	EKXJ351E□□270MJ30S
	33	12.5×20	0.24	330	EKXJ351E□□330MK20S
	39	10×35	0.24	325	EKXJ351E□□390MJ35S
	47	10×40	0.24	375	EKXJ351E□□470MJ40S
	47	12.5×25	0.24	425	EKXJ351E□□470MK25S
	47	14.5×20	0.24	420	EKXJ351E□□470MU20S
	56	10×45	0.24	425	EKXJ351E□□560MJ45S
	56	12.5×30	0.24	495	EKXJ351E□□560MK30S
	56	16×20	0.24	475	EKXJ351E□□560ML20S
	68	10×50	0.24	485	EKXJ351E□□680MJ50S
	68	12.5×35	0.24	580	EKXJ351E□□680MK35S
	68	14.5×25	0.24	545	EKXJ351E□□680MU25S
	68	18×20	0.24	550	EKXJ351E□□680MM20S
	82	12.5×40	0.24	655	EKXJ351E□□820MK40S
	82	14.5×31.5	0.24	645	EKXJ351E□□820MUN3S
	82	16×25	0.24	625	EKXJ351E□□820ML25S
	100	12.5×45	0.24	750	EKXJ351E□□101MK45S
	100	12.5×50	0.24	770	EKXJ351E□□101MK50S
	100	14.5×35.5	0.24	740	EKXJ351E□□101MUP1S
	100	16×31.5	0.24	740	EKXJ351E□□101MLN3S
	100	18×25	0.24	710	EKXJ351E□□101MM25S
	120	14.5×40	0.24	835	EKXJ351E□□121MU40S
	120	14.5×45	0.24	860	EKXJ351E□□121MU45S
	120	16×35.5	0.24	830	EKXJ351E□□121MLP1S
	150	14.5×50	0.24	980	EKXJ351E□□151MU50S
	150	16×40	0.24	960	EKXJ351E□□151ML40S
	150	16×45	0.24	975	EKXJ351E□□151ML45S
	150	18×31.5	0.24	940	EKXJ351E□□151MMN3S
	180	16×50	0.24	1,090	EKXJ351E□□181ML50S
	180	18×35.5	0.24	1,065	EKXJ351E□□181MMP1S
	180	18×40	0.24	1,080	EKXJ351E□□181MM40S
	220	18×45	0.24	1,210	EKXJ351E□□221MM45S
	220	18×50	0.24	1,220	EKXJ351E□□221MM50S
400	10	10×16	0.24	125	EKXJ401E□□100MJ16S
	18	10×20	0.24	180	EKXJ401E□□180MJ20S
	22	10×25	0.24	215	EKXJ401E□□220MJ25S
	27	10×30	0.24	255	EKXJ401E□□270MJ30S
	27	12.5×20	0.24	300	EKXJ401E□□270MK20S
	33	10×35	0.24	300	EKXJ401E□□330MJ35S
	39	10×40	0.24	340	EKXJ401E□□390MJ40S
	39	10×45	0.24	355	EKXJ401E□□390MJ45S
	39	12.5×25	0.24	390	EKXJ401E□□390MK25S
	39	14.5×20	0.24	385	EKXJ401E□□390MU20S
	47	12.5×30	0.24	455	EKXJ401E□□470MK30S
	47	16×20	0.24	435	EKXJ401E□□470ML20S
	56	10×50	0.24	440	EKXJ401E□□560MJ50S
	56	12.5×35	0.24	525	EKXJ401E□□560MK35S
	56	14.5×25	0.24	495	EKXJ401E□□560MU25S
	56	18×20	0.24	500	EKXJ401E□□560MM20S
	68	12.5×40	0.24	600	EKXJ401E□□680MK40S
	68	14.5×31.5	0.24	585	EKXJ401E□□680MUN3S
	68	16×25	0.24	570	EKXJ401E□□680ML25S
	82	12.5×45	0.24	680	EKXJ401E□□820MK45S
	82	12.5×50	0.24	700	EKXJ401E□□820MK50S
	82	14.5×35.5	0.24	670	EKXJ401E□□820MUP1S
	82	16×31.5	0.24	670	EKXJ401E□□820MLN3S
	82	18×25	0.24	640	EKXJ401E□□820MM25S
	100	14.5×40	0.24	760	EKXJ401E□□101MU40S
	100	14.5×45	0.24	785	EKXJ401E□□101MU45S
	100	16×35.5	0.24	760	EKXJ401E□□101MLP1S
	120	14.5×50	0.24	875	EKXJ401E□□121MU50S
	120	16×40	0.24	860	EKXJ401E□□121ML40S
	120	16×45	0.24	875	EKXJ401E□□121ML45S
	120	18×31.5	0.24	840	EKXJ401E□□121MMN3S
	120	18×35.5	0.24	870	EKXJ401E□□121MMP1S
	150	16×50	0.24	995	EKXJ401E□□151ML50S
	150	18×40	0.24	985	EKXJ401E□□151MM40S
	180	18×45	0.24	1,095	EKXJ401E□□181MM45S
	220	18×50	0.24	1,220	EKXJ401E□□221MM50S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
420	6.8	10×16	0.24	105	EKXJ421E□□6R8MJ16S
	12	10×20	0.24	150	EKXJ421E□□120MJ20S
	15	10×25	0.24	185	EKXJ421E□□150MJ25S
	18	10×30	0.24	215	EKXJ421E□□180MJ30S
	22	12.5×20	0.24	285	EKXJ421E□□220MK20S
	27	10×35	0.24	275	EKXJ421E□□270MJ35S
	27	10×40	0.24	290	EKXJ421E□□270MJ40S
	27	12.5×25	0.24	340	EKXJ421E□□270MK25S
	27	14.5×20	0.24	335	EKXJ421E□□270MU20S
	33	10×45	0.24	335	EKXJ421E□□330MJ45S
	33	12.5×30	0.24	400	EKXJ421E□□330MK30S
	33	16×20	0.24	385	EKXJ421E□□330ML20S
	39	10×50	0.24	375	EKXJ421E□□390MJ50S
	39	14.5×25	0.24	435	EKXJ421E□□390MU25S
	47	12.5×35	0.24	505	EKXJ421E□□470MK35S
	47	16×25	0.24	500	EKXJ421E□□470ML25S
	47	18×20	0.24	480	EKXJ421E□□470MM20S
	56	12.5×40	0.24	570	EKXJ421E□□560MK40S
	56	12.5×45	0.24	590	EKXJ421E□□560MK45S
	56	14.5×31.5	0.24	560	EKXJ421E□□560MUN3S
	68	12.5×50	0.24	670	EKXJ421E□□680MK50S
	68	14.5×35.5	0.24	640	EKXJ421E□□680MUP1S
	68	14.5×40	0.24	660	EKXJ421E□□680MU40S
	68	16×31.5	0.24	645	EKXJ421E□□680MLN3S
	68	18×25	0.24	615	EKXJ421E□□680MM25S
	82	14.5×45	0.24	750	EKXJ421E□□820MU45S
	82	16×35.5	0.24	725	EKXJ421E□□820MLP1S
	82	18×31.5	0.24	730	EKXJ421E□□820MMN3S
	100	14.5×50	0.24	845	EKXJ421E□□101MU50S
	100	16×40	0.24	825	EKXJ421E□□101ML40S
	100	16×45	0.24	840	EKXJ421E□□101ML45S
	100	18×35.5	0.24	835	EKXJ421E□□101MMP1S
	120	16×50	0.24	935	EKXJ421E□□121ML50S
	120	18×40	0.24	930	EKXJ421E□□121MM40S
	120	18×45	0.24	945	EKXJ421E□□121MM45S
	150	18×50	0.24	1,060	EKXJ421E□□151MM50S
450	6.8	10×16	0.24	105	EKXJ451E□□6R8MJ16S
	12	10×20	0.24	150	EKXJ451E□□120MJ20S
	15	10×25	0.24	185	EKXJ451E□□150MJ25S
	18	10×30	0.24	215	EKXJ451E□□180MJ30S
	18	12.5×20	0.24	255	EKXJ451E□□180MK20S
	22	10×35	0.24	250	EKXJ451E□□220MJ35S
	27	10×40	0.24	290	EKXJ451E□□270MJ40S
	27	10×45	0.24	305	EKXJ451E□□270MJ45S
	27	12.5×25	0.24	340	EKXJ451E□□270MK25S
	27	14.5×20	0.24	335	EKXJ451E□□270MU20S
	33	12.5×30	0.24	400	EKXJ451E□□330MK30S
	33	14.5×25	0.24	400	EKXJ451E□□330MU25S
	33	16×20	0.24	385	EKXJ451E□□330ML20S
	39	10×50	0.24	375	EKXJ451E□□390MJ50S
	39	12.5×35	0.24	460	EKXJ451E□□390MK35S
	39	18×20	0.24	440	EKXJ451E□□390MM20S
	47	12.5×40	0.24	525	EKXJ451E□□470MK40S
	47	14.5×31.5	0.24	515	EKXJ451E□□470MUN3S
	47	16×25	0.24	500	EKXJ451E□□470ML25S
	56	12.5×45	0.24	590	EKXJ451E□□560MK45S
	56	14.5×35.5	0.24	580	EKXJ451E□□560MUP1S
	56	16×31.5	0.24	585	EKXJ451E□□560MLN3S
	56	18×25	0.24	560	EKXJ451E□□560MM25S
	68	12.5×50	0.24	670	EKXJ451E□□680MK50S
	68	14.5×40	0.24	660	EKXJ451E□□680MU40S
	68	14.5×45	0.24	680	EKXJ451E□□680MU45S
	68	16×35.5	0.24	660	EKXJ451E□□680MLP1S
	82	14.5×50	0.24	765	EKXJ451E□□820MU50S
	82	16×40	0.24	750	EKXJ451E□□820ML40S
	82	16×45	0.24	760	EKXJ451E□□820ML45S
	82	18×31.5	0.24	730	EKXJ451E□□820MMN3S
	100	16×50	0.24	855	EKXJ451E□□101ML50S
	100	18×35.5	0.24	835	EKXJ451E□□101MMP1S
	120	18×40	0.24	930	EKXJ451E□□121MM40S
	120	18×45	0.24	945	EKXJ451E□□121MM45S
	150	18×50	0.24	1,060	EKXJ451E□□151MM50S

□□ : Enter the appropriate lead forming or taping code.

KXJ Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
500	6.8	10×20	0.24	90	EKXJ501E□□6R8MJ20S
	8.2	10×25	0.24	110	EKXJ501E□□8R2MJ25S
	10	10×30	0.24	130	EKXJ501E□□100MJ30S
	12	12.5×20	0.24	135	EKXJ501E□□120MK20S
	15	10×35	0.24	170	EKXJ501E□□150MJ35S
	15	10×40	0.24	175	EKXJ501E□□150MJ40S
	15	12.5×25	0.24	165	EKXJ501E□□150MK25S
	18	10×45	0.24	190	EKXJ501E□□180MJ45S
	18	12.5×30	0.24	190	EKXJ501E□□180MK30S
	22	10×50	0.24	230	EKXJ501E□□220MJ50S
	22	12.5×35	0.24	220	EKXJ501E□□220MK35S
	27	12.5×40	0.24	260	EKXJ501E□□270MK40S
	33	12.5×45	0.24	285	EKXJ501E□□330MK45S
	39	12.5×50	0.24	330	EKXJ501E□□390MK50S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(160 to 450Vdc)

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
6.8 to 82	1.00	1.75	2.25	2.50
100 to 680	1.00	1.67	2.05	2.25

(500Vdc)

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
6.8 to 22	1.00	1.78	2.30	2.59
27 to 39	1.00	1.75	2.25	2.50

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KXG Series

- For electronic ballast circuits and other long life applications
- Endurance with ripple current : 8,000 to 10,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

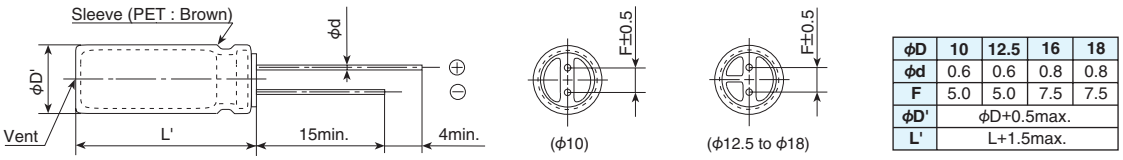
KXJ P166
↑ Downsized
KXG

◆SPECIFICATIONS

Items	Characteristics				
Category Temperature Range	−40 to +105℃ (160 to 400Vdc) −25 to+105℃ (450Vdc)				
Rated Voltage Range	160 to 450Vdc				
Capacitance Tolerance	±20% (M)				(at 20℃, 120Hz)
Leakage Current		After 1 minute	After 5 minutes		
	CV≦1,000	I=0.1CV+40	I=0.03CV+15		
	CV>1,000	I=0.04CV+100	I=0.02CV+25		
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)				(at 20℃)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	160 to 250V	350 to 450V		
	tanδ (Max.)	0.20	0.24		(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	160 to 250V	350 & 400V	450V	
	Z(−25℃)/Z(+20℃)	3	5	6	
	Z(−40℃)/Z(+20℃)	6	6	—	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 10,000 hours (8,000 hours for φ10) at 105℃.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦500% of the initial specified value			

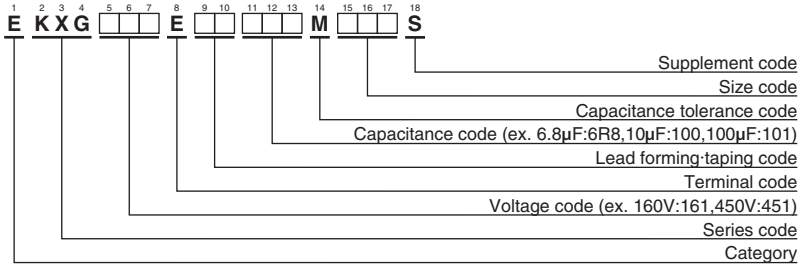
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
6.8 to 82	1.00	1.75	2.25	2.50
100 to 330	1.00	1.67	2.05	2.25

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KXG Series

◆STANDARD RATINGS

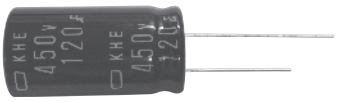
WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current(mArms/105℃)		Part No.
				120Hz	100kHz	
160	10	10×16	0.20	125	315	EKXG161E□□100MJ16S
	22	10×20	0.20	200	500	EKXG161E□□220MJ20S
	33	10×20	0.20	250	625	EKXG161E□□330MJ20S
	47	10×20	0.20	300	750	EKXG161E□□470MJ20S
	68	12.5×20	0.20	470	1,175	EKXG161E□□680MK20S
	82	12.5×20	0.20	510	1,275	EKXG161E□□820MK20S
	100	12.5×25	0.20	620	1,395	EKXG161E□□101MK25S
	100	16×20	0.20	630	1,420	EKXG161E□□101ML20S
	150	16×20	0.20	770	1,735	EKXG161E□□151ML20S
	220	16×25	0.20	1,020	2,295	EKXG161E□□221ML25S
	330	18×31.5	0.20	1,390	3,130	EKXG161E□□331MMN3S
200	10	10×16	0.20	125	315	EKXG201E□□100MJ16S
	22	10×20	0.20	200	500	EKXG201E□□220MJ20S
	33	10×20	0.20	260	650	EKXG201E□□330MJ20S
	47	12.5×20	0.20	390	975	EKXG201E□□470MK20S
	68	12.5×20	0.20	470	1,175	EKXG201E□□680MK20S
	82	16×20	0.20	550	1,375	EKXG201E□□820ML20S
	100	16×20	0.20	630	1,420	EKXG201E□□101ML20S
	150	16×25	0.20	840	1,890	EKXG201E□□151ML25S
	220	18×25	0.20	1,050	2,365	EKXG201E□□221MM25S
	330	18×35.5	0.20	1,430	3,220	EKXG201E□□331MMP1S
250	10	10×20	0.20	140	350	EKXG251E□□100MJ20S
	22	10×20	0.20	200	500	EKXG251E□□220MJ20S
	33	12.5×20	0.20	320	800	EKXG251E□□330MK20S
	47	12.5×20	0.20	390	975	EKXG251E□□470MK20S
	68	16×20	0.20	520	1,300	EKXG251E□□680ML20S
	82	16×20	0.20	550	1,375	EKXG251E□□820ML20S
	100	16×25	0.20	680	1,530	EKXG251E□□101ML25S
	150	18×25	0.20	860	1,935	EKXG251E□□151MM25S
	220	18×31.5	0.20	1,130	2,545	EKXG251E□□221MMN3S
350	6.8	10×16	0.24	110	275	EKXG351E□□6R8MJ16S
	10	10×20	0.24	140	350	EKXG351E□□100MJ20S
	22	12.5×20	0.24	260	650	EKXG351E□□220MK20S
	33	16×20	0.24	360	900	EKXG351E□□330ML20S
	47	16×20	0.24	430	1,075	EKXG351E□□470ML20S
	68	16×25	0.24	560	1,400	EKXG351E□□680ML25S
	68	18×20	0.24	550	1,375	EKXG351E□□680MM20S
	82	18×25	0.24	610	1,525	EKXG351E□□820MM25S
	100	18×25	0.24	700	1,575	EKXG351E□□101MM25S
	120	18×31.5	0.24	830	1,865	EKXG351E□□121MMN3S
	150	18×35.5	0.24	960	2,160	EKXG351E□□151MMP1S
400	6.8	10×16	0.24	110	275	EKXG401E□□6R8MJ16S
	10	10×20	0.24	140	350	EKXG401E□□100MJ20S
	15	12.5×20	0.24	220	550	EKXG401E□□150MK20S
	22	12.5×20	0.24	260	650	EKXG401E□□220MK20S
	33	16×20	0.24	360	900	EKXG401E□□330ML20S
	47	16×25	0.24	470	1,175	EKXG401E□□470ML25S
	47	18×20	0.24	450	1,125	EKXG401E□□470MM20S
	68	18×25	0.24	585	1,465	EKXG401E□□680MM25S
	82	18×25	0.24	610	1,525	EKXG401E□□820MM25S
	100	18×31.5	0.24	765	1,720	EKXG401E□□101MMN3S
	120	18×35.5	0.24	865	1,945	EKXG401E□□121MMP1S
	150	18×40	0.24	985	2,215	EKXG401E□□151MM40S
450	6.8	10×20	0.24	110	275	EKXG451E□□6R8MJ20S
	10	12.5×20	0.24	180	450	EKXG451E□□100MK20S
	15	12.5×25	0.24	240	600	EKXG451E□□150MK25S
	22	16×20	0.24	290	725	EKXG451E□□220ML20S
	33	16×25	0.24	390	975	EKXG451E□□330ML25S
	33	18×20	0.24	380	950	EKXG451E□□330MM20S
	47	18×25	0.24	480	1,200	EKXG451E□□470MM25S
	68	18×31.5	0.24	630	1,575	EKXG451E□□680MMN3S
	82	18×35.5	0.24	715	1,785	EKXG451E□□820MMP1S
	100	18×40	0.24	800	1,800	EKXG451E□□101MM40S

□□ : Enter the appropriate lead forming or taping code.

KHE Series

- Ideal for low profile power supply applications
- Downsize, high ripple design
- Rated voltage range : 400 to 450Vdc, Capacitance range : 27 to 120μF
- Endurance with ripple current : 2,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

KHE
↑ Downsized
PAG P174



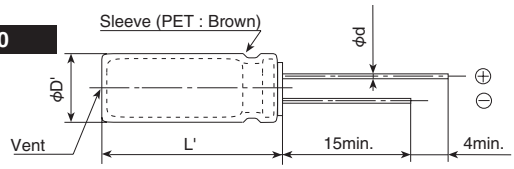
◆SPECIFICATIONS

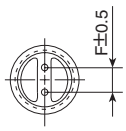
Items	Characteristics				
Category Temperature Range	−40 to +105℃ (400Vdc) −25 to+105℃ (420, 450Vdc)				
Rated Voltage Range	400 to 450Vdc				
Capacitance Tolerance	±20% (M)				(at 20℃, 120Hz)
Leakage Current		After 1 minute	After 5 minutes		
	CV≦1,000	I=0.1CV+40	I=0.03CV+15		
	CV>1,000	I=0.04CV+100	I=0.02CV+25		
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)				(at 20℃)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	400V	420V	450V	
	tanδ (Max.)	0.15	0.20	0.20	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	400V	420V	450V	
	Z(−25℃)/Z(+20℃)	5	6	6	
	Z(−40℃)/Z(+20℃)	6	—	—	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105℃.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦500% of the initial specified value			

◆DIMENSIONS [mm]

●Terminal Code : E

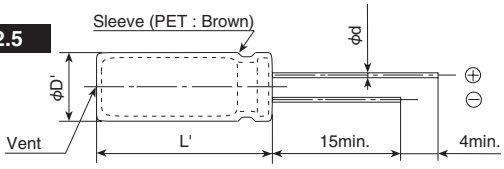
φ10

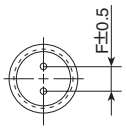




Gas escape end seal

≧φ12.5





φD	10	12.5	14.5	16	18
φd	0.6	0.6	0.8	0.8	0.8
F	5.0	5.0	7.5	7.5	7.5
φD'	φD+0.5 max.				
L'	L+2.0 max.				

◆PART NUMBERING SYSTEM

1	2 3 4	5 6 7	8	9 10	11 12 13	14	15 16 17	18
E	KHE	□□□	E	□□	□□□	M	□□□	S

Supplement code
Size code
Capacitance tolerance code
Capacitance code (ex. 47μF:470,100μF:101)
Lead forming·taping code
Terminal code
Voltage code (ex. 400V:401,450V:451)
Series code
Category

Please refer to "Product code guide (radial lead type)"

KHE Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
400	33	10×30	0.15	335	EKHE401E□□330MJ30S
	39	10×35	0.15	385	EKHE401E□□390MJ35S
	47	10×40	0.15	445	EKHE401E□□470MJ40S
	56	10×45	0.15	505	EKHE401E□□560MJ45S
	56	12.5×30	0.15	480	EKHE401E□□560MK30S
	68	12.5×35	0.15	560	EKHE401E□□680MK35S
	82	12.5×40	0.15	640	EKHE401E□□820MK40S
	82	14.5×31.5	0.15	625	EKHE401E□□820MUN3S
	100	12.5×45	0.15	730	EKHE401E□□101MK45S
	100	14.5×35	0.15	715	EKHE401E□□101MU35S
	100	16×31.5	0.15	720	EKHE401E□□101MLN3S
	120	14.5×40	0.15	810	EKHE401E□□121MU40S
	120	16×35	0.15	810	EKHE401E□□121ML35S
	120	18×31.5	0.15	815	EKHE401E□□121MMN3S
420	33	10×30	0.20	335	EKHE421E□□330MJ30S
	39	10×35	0.20	385	EKHE421E□□390MJ35S
	47	10×40	0.20	445	EKHE421E□□470MJ40S
	56	10×50	0.20	520	EKHE421E□□560MJ50S
	56	12.5×30	0.20	480	EKHE421E□□560MK30S
	68	12.5×35	0.20	560	EKHE421E□□680MK35S
	82	12.5×40	0.20	640	EKHE421E□□820MK40S
	82	14.5×31.5	0.20	625	EKHE421E□□820MUN3S
	100	12.5×50	0.20	750	EKHE421E□□101MK50S
	100	14.5×40	0.20	740	EKHE421E□□101MU40S
	100	16×31.5	0.20	720	EKHE421E□□101MLN3S
	120	14.5×45	0.20	835	EKHE421E□□121MU45S
	120	16×35	0.20	810	EKHE421E□□121ML35S
	120	18×31.5	0.20	815	EKHE421E□□121MMN3S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
450	27	10×30	0.20	305	EKHE451E□□270MJ30S
	33	10×35	0.20	355	EKHE451E□□330MJ35S
	39	10×40	0.20	405	EKHE451E□□390MJ40S
	47	10×45	0.20	460	EKHE451E□□470MJ45S
	47	12.5×30	0.20	440	EKHE451E□□470MK30S
	56	12.5×35	0.20	505	EKHE451E□□560MK35S
	68	12.5×40	0.20	580	EKHE451E□□680MK40S
	68	14.5×31.5	0.20	570	EKHE451E□□680MUN3S
	82	12.5×45	0.20	660	EKHE451E□□820MK45S
	82	14.5×35	0.20	650	EKHE451E□□820MU35S
	82	16×31.5	0.20	655	EKHE451E□□820MLN3S
	100	14.5×40	0.20	740	EKHE451E□□101MU40S
	100	16×35	0.20	740	EKHE451E□□101ML35S
	120	18×31.5	0.20	815	EKHE451E□□121MMN3S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
27 to 82	1.00	1.50	1.75	1.80
100 to 120	1.00	1.30	1.40	1.50

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

PAG Series

- Downsize, high ripple design (φ10 to 18)
- Rated voltage range : 200 to 450Vdc, Capacitance range : 18 to 560μF
- Endurance with ripple current : 2,000 hours at 105℃
- Ideal for low profile power supply applications
- Non solvent resistant type
- **RoHS Compliant**

PAG
Downsized
Higher ripple
KMG P129

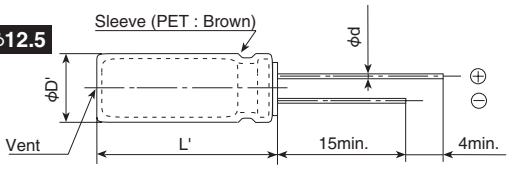
◆SPECIFICATIONS

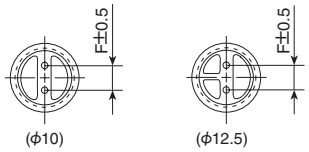
Items	Characteristics					
Category Temperature Range	−40 to +105℃ (200, 400Vdc) −25 to+105℃ (420, 450Vdc)					
Rated Voltage Range	200 to 450Vdc					
Capacitance Tolerance	±20% (M)					(at 20℃, 120Hz)
Leakage Current		After 1 minute		After 5 minutes		
	CV≦1,000	I=0.1CV+40		I=0.03CV+15		
	CV>1,000	I=0.04CV+100		I=0.02CV+25		
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)					(at 20℃)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	200V	400V	420V	450V	
	tanδ (Max.)	0.12	0.15	0.20	0.20	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	200V	400V	420V	450V	
	Z(−25℃)/Z(+20℃)	3	5	6	6	
	Z(−40℃)/Z(+20℃)	6	6	—	—	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105℃.					
	Capacitance change	≦±20% of the initial value				
	D.F. (tanδ)	≦200% of the initial specified value				
	Leakage current	≦The initial specified value				
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.					
	Capacitance change	≦±20% of the initial value				
	D.F. (tanδ)	≦200% of the initial specified value				
	Leakage current	≦500% of the initial specified value				

◆DIMENSIONS [mm]

●Terminal Code : E

φ10 & φ12.5

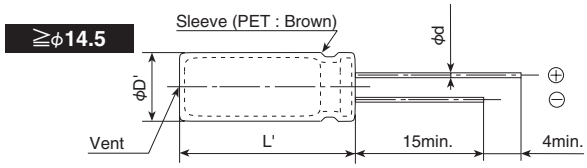


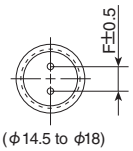


Gas escape end seal

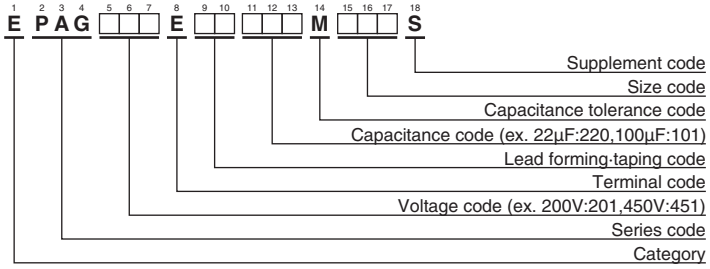
φD	10	12.5	14.5	16	18
φd	0.6	0.6	0.8	0.8	0.8
F	5.0	5.0	7.5	7.5	7.5
φD'	φD+0.5 max.				
L'	L+2.0 max.				

≧φ14.5





◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

PAG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
200	82	10×30	0.12	440	EPAG201E□□820MJ30S
	100	10×35	0.12	510	EPAG201E□□101MJ35S
	120	10×40	0.12	590	EPAG201E□□121MJ40S
	150	12.5×30	0.12	650	EPAG201E□□151MK30S
	180	12.5×35	0.12	750	EPAG201E□□181MK35S
	220	12.5×40	0.12	830	EPAG201E□□221MK40S
	220	14.5×30	0.12	830	EPAG201E□□221MU30S
	270	14.5×35	0.12	960	EPAG201E□□271MU35S
	270	16×30	0.12	960	EPAG201E□□271ML30S
	330	16×35	0.12	1,100	EPAG201E□□331ML35S
	330	18×30	0.12	1,100	EPAG201E□□331MM30S
	390	16×40	0.12	1,240	EPAG201E□□391ML40S
	390	18×35	0.12	1,240	EPAG201E□□391MM35S
	470	18×40	0.12	1,390	EPAG201E□□471MM40S
	560	18×45	0.12	1,560	EPAG201E□□561MM45S
400	27	10×30	0.15	260	EPAG401E□□270MJ30S
	33	10×35	0.15	300	EPAG401E□□330MJ35S
	39	10×40	0.15	340	EPAG401E□□390MJ40S
	47	12.5×30	0.15	370	EPAG401E□□470MK30S
	56	12.5×35	0.15	420	EPAG401E□□560MK35S
	68	12.5×40	0.15	480	EPAG401E□□680MK40S
	68	14.5×30	0.15	480	EPAG401E□□680MU30S
	82	14.5×35	0.15	530	EPAG401E□□820MU35S
	100	14.5×40	0.15	580	EPAG401E□□101MU40S
	100	16×30	0.15	580	EPAG401E□□101ML30S
	120	16×35	0.15	670	EPAG401E□□121ML35S
	120	18×30	0.15	670	EPAG401E□□121MM30S
	150	16×40	0.15	770	EPAG401E□□151ML40S
	150	18×35	0.15	770	EPAG401E□□151MM35S
	180	18×40	0.15	880	EPAG401E□□181MM40S
	220	18×45	0.15	1,000	EPAG401E□□221MM45S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
420	22	10×30	0.20	230	EPAG421E□□220MJ30S
	27	10×35	0.20	270	EPAG421E□□270MJ35S
	33	10×40	0.20	310	EPAG421E□□330MJ40S
	39	12.5×30	0.20	330	EPAG421E□□390MK30S
	47	12.5×35	0.20	390	EPAG421E□□470MK35S
	56	12.5×40	0.20	430	EPAG421E□□560MK40S
	56	14.5×30	0.20	430	EPAG421E□□560MU30S
	68	14.5×35	0.20	510	EPAG421E□□680MU35S
	68	16×30	0.20	510	EPAG421E□□680ML30S
	82	14.5×40	0.20	570	EPAG421E□□820MU40S
	82	16×35	0.20	570	EPAG421E□□820ML35S
	100	16×40	0.20	610	EPAG421E□□101ML40S
	100	18×30	0.20	610	EPAG421E□□101MM30S
	120	18×35	0.20	690	EPAG421E□□121MM35S
	150	18×40	0.20	790	EPAG421E□□151MM40S
450	18	10×30	0.20	210	EPAG451E□□180MJ30S
	22	10×35	0.20	240	EPAG451E□□220MJ35S
	27	10×40	0.20	280	EPAG451E□□270MJ40S
	33	12.5×30	0.20	310	EPAG451E□□330MK30S
	39	12.5×35	0.20	350	EPAG451E□□390MK35S
	47	12.5×40	0.20	390	EPAG451E□□470MK40S
	47	14.5×30	0.20	390	EPAG451E□□470MU30S
	56	14.5×35	0.20	440	EPAG451E□□560MU35S
	56	16×30	0.20	440	EPAG451E□□560ML30S
	68	14.5×40	0.20	500	EPAG451E□□680MU40S
	68	16×35	0.20	500	EPAG451E□□680ML35S
	82	16×40	0.20	550	EPAG451E□□820ML40S
	82	18×30	0.20	550	EPAG451E□□820MM30S
	100	18×35	0.20	650	EPAG451E□□101MM35S
	120	18×40	0.20	740	EPAG451E□□121MM40S
	150	18×45	0.20	810	EPAG451E□□151MM45S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
18 to 82	1.00	1.50	1.75	1.80
100 to 560	1.00	1.30	1.40	1.50

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KLJ Upgrade! Series

- Doesn't spark with DC over voltage
- Endurance with ripple current : 2,000 hours at 105℃
- Non solvent resistant type
- ESR value prescribed
- **RoHS Compliant**

Doesn't spark with DC over voltage!

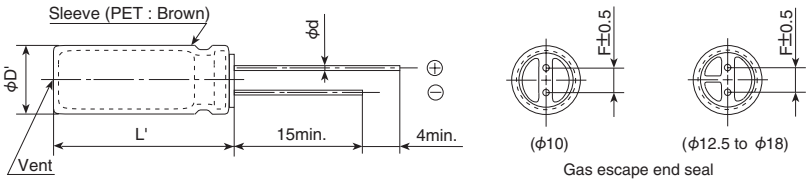
KLJ
↑ Downsized
KLG P178

◆SPECIFICATIONS

Items	Characteristics				
Category Temperature Range	−25 to +105℃				
Rated Voltage Range	200 to 450Vdc				
Capacitance Tolerance	±20% (M)				(at 20℃, 120Hz)
Leakage Current	I=0.04CV+100 Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)				(at 20℃ after 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	200V	400V	450V	
	tanδ (Max.)	0.20	0.24	0.24	(at 20℃ ,120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	200V	400V	450V	
	Z(−25℃)/Z(+20℃)	4	6	6	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105℃.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.				
	Capacitance change	≦±20% of the initial value			
	D.F. (tanδ)	≦200% of the initial specified value			
	Leakage current	≦500% of the initial specified value			

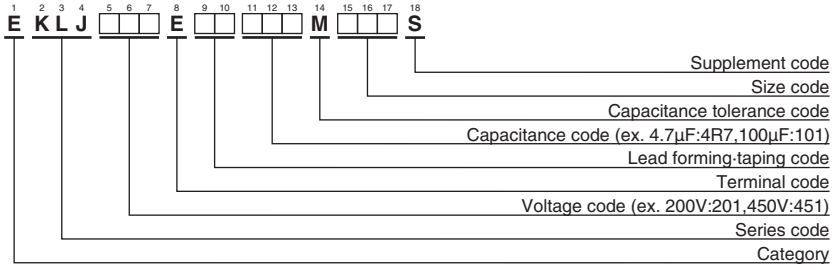
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	300	1k	10k	50k	100k
4.7 to 10μF	1.00	1.35	1.75	2.30	2.50	2.70
15 to 47μF	1.00	1.25	1.50	1.75	1.80	1.85
56 to 330μF	1.00	1.15	1.30	1.40	1.50	1.60

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KLJ Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	ESR (Ωmax/20℃, 100kHz)	Rated ripple current (mArms/105℃, 120Hz)	Part No.
200	33	10×20	0.20	1.8	165	EKLJ201E□□330MJ20S
	39	10×25	0.20	1.4	200	EKLJ201E□□390MJ25S
	56	12.5×20	0.20	1.0	265	EKLJ201E□□560MK20S
	82	12.5×25	0.20	0.72	350	EKLJ201E□□820MK25S
	100	16×20	0.20	0.63	390	EKLJ201E□□101ML20S
	120	16×25	0.20	0.44	465	EKLJ201E□□121ML25S
	150	18×20	0.20	0.31	505	EKLJ201E□□151MM20S
	180	16×31.5	0.20	0.36	615	EKLJ201E□□181MLN3S
	180	18×25	0.20	0.30	585	EKLJ201E□□181MM25S
	220	16×35.5	0.20	0.30	695	EKLJ201E□□221MLP1S
	220	18×31.5	0.20	0.28	700	EKLJ201E□□221MMN3S
	270	18×35.5	0.20	0.24	805	EKLJ201E□□271MMP1S
	330	18×40	0.20	0.21	900	EKLJ201E□□331MM40S
400	4.7	10×12.5	0.24	8.4	36	EKLJ401E□□4R7MJC5S
	10	10×16	0.24	5.7	64	EKLJ401E□□100MJ16S
	15	10×20	0.24	4.0	105	EKLJ401E□□150MJ20S
	18	10×25	0.24	3.2	110	EKLJ401E□□180MJ25S
	22	12.5×20	0.24	2.7	165	EKLJ401E□□220MK20S
	27	12.5×25	0.24	1.9	200	EKLJ401E□□270MK25S
	33	16×20	0.24	1.5	225	EKLJ401E□□330ML20S
	39	18×20	0.24	1.2	255	EKLJ401E□□390MM20S
	39	18×25	0.24	0.72	270	EKLJ401E□□390MM25S
	47	16×25	0.24	1.1	290	EKLJ401E□□470ML25S
	47	18×20	0.24	1.2	280	EKLJ401E□□470MM20S
	56	16×31.5	0.24	0.84	340	EKLJ401E□□560MLN3S
	68	16×35.5	0.24	0.72	385	EKLJ401E□□680MLP1S
	68	18×25	0.24	0.88	360	EKLJ401E□□680MM25S
	82	16×40	0.24	0.65	435	EKLJ401E□□820ML40S
	82	18×31.5	0.24	0.64	425	EKLJ401E□□820MMN3S
	100	18×35.5	0.24	0.54	490	EKLJ401E□□101MMP1S
	120	18×40	0.24	0.49	540	EKLJ401E□□121MM40S
450	39	16×25	0.24	1.4	265	EKLJ451E□□390ML25S
	39	18×20	0.24	1.4	255	EKLJ451E□□390MM20S
	47	16×25	0.24	1.3	290	EKLJ451E□□470ML25S
	47	18×25	0.24	1.2	320	EKLJ451E□□470MM25S
	56	16×31.5	0.24	1.1	340	EKLJ451E□□560MLN3S
	68	16×35.5	0.24	0.86	420	EKLJ451E□□680MLP1S
	82	16×40	0.24	0.79	435	EKLJ451E□□820ML40S
	82	18×31.5	0.24	0.78	425	EKLJ451E□□820MMN3S
	100	18×40	0.24	0.67	490	EKLJ451E□□101MM40S
	110	18×40	0.24	0.59	540	EKLJ451E□□111MM40S
	120	18×45	0.24	0.58	570	EKLJ451E□□121MM45S

□□ : Enter the appropriate lead forming or taping code.

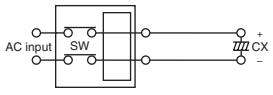
◆DC OVERVOLTAGE TEST CONDITIONS

The vent will operate and the capacitor shall become an open circuit without burning materials when the following excess DC voltage is applied.

●Test DC voltage

Rated voltage	Nominal capacitance	Current limit	Test DC voltage
200Vdc	＜330μF	4A	300/375Vdc
	330μF	5A	
400Vdc	＜100μF	2A	500/600Vdc
	100μF≦C≦120μF	4A	
450Vdc	＜100μF	2A	550/675Vdc
	100μF≦C≦120μF	4A	

●Test circuit

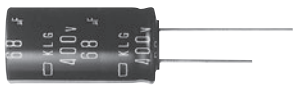


Constant DC voltage/current power supply

KLG Series

- Doesn't spark with DC over voltage
- Endurance with ripple current : 2,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

KLJ P176
↑ Downsized
KLG

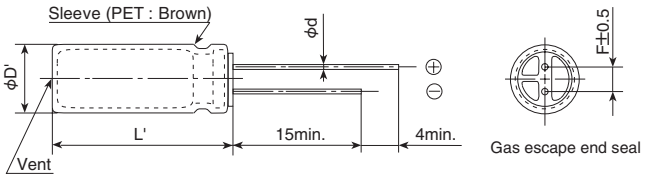


◆SPECIFICATIONS

Items	Characteristics			
Category Temperature Range	−25 to +105℃			
Rated Voltage Range	200 & 400Vdc			
Capacitance Tolerance	±20% (M)			(at 20℃, 120Hz)
Leakage Current	I=0.04CV+100 Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)			(at 20℃ after 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	200V	400V	
	tanδ (Max.)	0.20	0.24	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	200V	400V	
	Z(−25℃)/Z(+20℃)	4	6	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 105℃.			
	Capacitance change	≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value		
	Leakage current	≦The initial specified value		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.			
	Capacitance change	≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value		
	Leakage current	≦500% of the initial specified value		

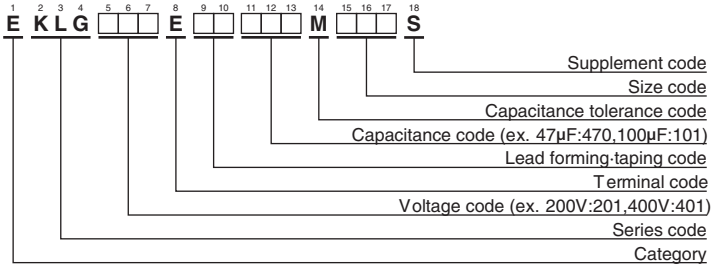
◆DIMENSIONS [mm]

●Terminal Code : E



φD	16	18
φd	0.8	
F	7.5	
φD'	φD+0.5max.	
L'	L+1.5max.	

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

KLG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
200	82	16×20	0.20	230	EKLG201E□□820ML20S
	100	16×25	0.20	425	EKLG201E□□101ML25S
	100	18×20	0.20	250	EKLG201E□□101MM20S
	120	16×31.5	0.20	500	EKLG201E□□121MLN3S
	120	18×25	0.20	475	EKLG201E□□121MM25S
	130	18×20	0.20	285	EKLG201E□□131MM20S
	150	16×31.5	0.20	560	EKLG201E□□151MLN3S
	150	18×20	0.20	315	EKLG201E□□151MM20S
	150	18×25	0.20	530	EKLG201E□□151MM25S
	180	16×40	0.20	645	EKLG201E□□181ML40S
	180	18×31.5	0.20	630	EKLG201E□□181MMN3S
	220	18×35.5	0.20	725	EKLG201E□□221MMP1S
	220	18×40	0.20	735	EKLG201E□□221MM40S
	270	18×45	0.20	830	EKLG201E□□271MM45S
	330	18×45	0.20	920	EKLG201E□□331MM45S

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,120Hz)	Part No.
400	22	16×20	0.24	145	EKLG401E□□220ML20S
	22	16×25	0.24	200	EKLG401E□□220ML25S
	33	16×25	0.24	220	EKLG401E□□330ML25S
	33	18×20	0.24	225	EKLG401E□□330MM20S
	39	16×31.5	0.24	245	EKLG401E□□390MLN3S
	39	18×25	0.24	250	EKLG401E□□390MM25S
	47	16×31.5	0.24	275	EKLG401E□□470MLN3S
	47	18×25	0.24	280	EKLG401E□□470MM25S
	56	16×40	0.24	350	EKLG401E□□560ML40S
	56	18×31.5	0.24	315	EKLG401E□□560MMN3S
	68	18×35.5	0.24	350	EKLG401E□□680MMP1S
	82	18×40	0.24	395	EKLG401E□□820MM40S
	100	18×40	0.24	450	EKLG401E□□101MM40S

□□ : Enter the appropriate lead forming or taping code.

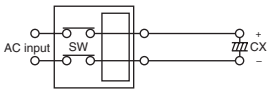
◆DC OVERVOLTAGE TEST CONDITIONS

The vent will operate and the capacitor shall become an open circuit without burning materials when the following excess DC voltage is applied.

●Test DC voltage

Rated voltage	Nominal capacitance	Current limit	Test DC voltage
200Vdc	＜330μF	4A	300/375Vdc
	330μF	5A	
400Vdc	＜100μF	2A	500/600Vdc
	100μF	4A	

●Test circuit



Constant DC voltage/current power supply

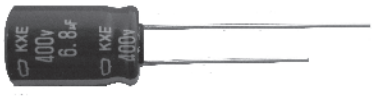
◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	300	1k	10k	50k	100k
22 to 47μF	1.00	1.25	1.50	1.75	1.80	1.85
56 to 330μF	1.00	1.15	1.30	1.40	1.50	1.60

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise.
When long life performance is required in actual use, the rms ripple current has to be reduced.

KXE New! Series



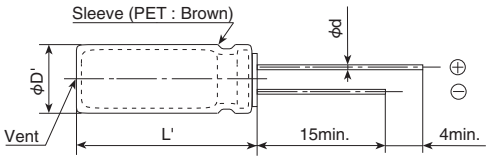
- For LED light circuits and other long life applications
- Endurance with ripple current : 10,000 to 12,000 hours at 105℃
- Non solvent resistant type
- **RoHS Compliant**

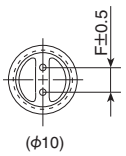
◆SPECIFICATIONS

Items	Characteristics			
Category Temperature Range	−40 to +105℃			
Rated Voltage Range	160 to 400Vdc			
Capacitance Tolerance	±20% (M)			(at 20℃, 120Hz)
Leakage Current		After 1 minute	After 5 minutes	
	CV≦1,000	I=0.1CV+40	I=0.03CV+15	
	CV>1,000	I=0.04CV+100	I=0.02CV+25	
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)			(at 20℃)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	160 to 400V		
	tanδ (Max.)	0.24		(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	160 to 400V		
	Z(−25℃)/Z(+20℃)	4		
	Z(−40℃)/Z(+20℃)	6		(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 12,000 hours (10,000 hours for φ10×12.5L) at 105℃.			
	Capacitance change	≦±30% of the initial value		
	D.F. (tanδ)	≦300% of the initial specified value		
	Leakage current	≦The initial specified value		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.			
	Capacitance change	≦±30% of the initial value		
	D.F. (tanδ)	≦300% of the initial specified value		
	Leakage current	≦500% of the initial specified value		

◆DIMENSIONS [mm]

●Terminal Code : E





Gas escape end seal

φD	10
φd	0.6
F	5.0
φD'	φD+0.5max.
L'	L+1.5max.

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
E	K	X	E				E						M				S

- Supplement code
- Size code
- Capacitance tolerance code
- Capacitance code (ex. 6.8μF:6R8,33μF:330)
- Lead forming·taping code
- Terminal code
- Voltage code (ex. 160V:161,400V:401)
- Series code
- Category

Please refer to "Product code guide (radial lead type)"

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
3.3 to 33	1.00	1.75	2.25	2.50

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

KXE New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current(mArms/105℃)		Part No.
				120Hz	100kHz	
160	15	10×12.5	0.24	80	200	EKXE161E□□150MJC5S
	22	10×12.5	0.24	95	237	EKXE161E□□220MJC5S
	27	10×16	0.24	105	262	EKXE161E□□270MJ16S
	33	10×16	0.24	130	325	EKXE161E□□330MJ16S
200	12	10×12.5	0.24	70	175	EKXE201E□□120MJC5S
	15	10×16	0.24	90	225	EKXE201E□□150MJ16S
	18	10×12.5	0.24	85	212	EKXE201E□□180MJC5S
	27	10×16	0.24	120	300	EKXE201E□□270MJ16S
400	3.3	10×12.5	0.24	60	150	EKXE401E□□3R3MJC5S
	4.7	10×16	0.24	90	225	EKXE401E□□4R7MJ16S
	5.6	10×16	0.24	100	250	EKXE401E□□5R6MJ16S
	6.8	10×12.5	0.24	85	212	EKXE401E□□6R8MJC5S
	6.8	10×16	0.24	115	287	EKXE401E□□6R8MJ16S

□□ : Enter the appropriate lead forming or taping code.

LE Series

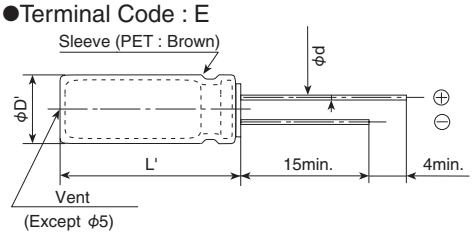
- Suitable for long life and high reliability products
- Downsize and long life
- Endurance with ripple current : 10,000 hours at 105℃
- Case size range : φ5×11L to φ8×11.5L
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

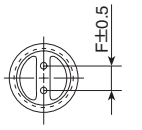
◆SPECIFICATION

Items	Characteristics								
Category Temperature Range	−25 to +105℃								
Rated Voltage Range	10 to 100Vdc								
Capacitance Tolerance	±20% (M)								(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)								(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	63V	100V	
	tanδ (Max.)	0.45	0.35	0.30	0.22	0.19	0.17	0.15	(at 20℃,120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	63V	100V	
	Z(−25℃)/Z(20℃)	8	6	4	4	3	3	3	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 10,000 hours at 105℃.								
	Capacitance change	≦±25% of the initial value							
	D.F. (tanδ)	≦300% of the initial specified value							
	Leakage current	≦The initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.								
	Capacitance change	≦±25% of the initial value							
	D.F. (tanδ)	≦300% of the initial specified value							
	Leakage current	≦The initial specified value							

◆DIMENSIONS [mm]

●Terminal Code : E

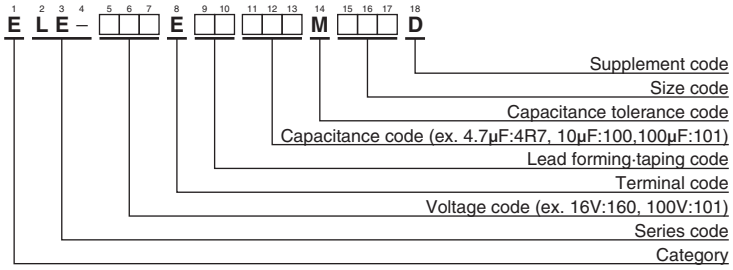




Gas escape end seal

φD	5	6.3	8
φd	0.5	0.5	0.6
F	2.0	2.5	3.5
φD'	φD+0.5max.		
L'	L+1.5max.		

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

LE Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105℃,100kHz)	Part No.
10	100	5×11	0.45	130	ELE-100E□□101ME11D
	220	6.3×11	0.45	210	ELE-100E□□221MF11D
	330	8×11.5	0.45	330	ELE-100E□□331MHB5D
16	47	5×11	0.35	130	ELE-160E□□470ME11D
	100	6.3×11	0.35	210	ELE-160E□□101MF11D
	220	8×11.5	0.35	330	ELE-160E□□221MHB5D
25	33	5×11	0.30	130	ELE-250E□□330ME11D
	47	5×11	0.30	130	ELE-250E□□470ME11D
	100	6.3×11	0.30	210	ELE-250E□□101MF11D
35	33	5×11	0.22	130	ELE-350E□□330ME11D
	47	6.3×11	0.22	210	ELE-350E□□470MF11D
	100	8×11.5	0.22	330	ELE-350E□□101MHB5D
50	1.0	5×11	0.19	25	ELE-500E□□1R0ME11D
	2.2	5×11	0.19	35	ELE-500E□□2R2ME11D
	3.3	5×11	0.19	70	ELE-500E□□3R3ME11D
	4.7	5×11	0.19	80	ELE-500E□□4R7ME11D
	10	5×11	0.19	90	ELE-500E□□100ME11D
	22	5×11	0.19	110	ELE-500E□□220ME11D
	33	6.3×11	0.19	190	ELE-500E□□330MF11D
	47	6.3×11	0.19	190	ELE-500E□□470MF11D
	100	8×11.5	0.19	270	ELE-500E□□101MHB5D
63	10	5×11	0.17	80	ELE-630E□□100ME11D
	22	6.3×11	0.17	170	ELE-630E□□220MF11D
	33	6.3×11	0.17	170	ELE-630E□□330MF11D
	47	8×11.5	0.17	240	ELE-630E□□470MHB5D
100	1.0	5×11	0.15	40	ELE-101E□□1R0ME11D
	2.2	5×11	0.15	50	ELE-101E□□2R2ME11D
	3.3	5×11	0.15	60	ELE-101E□□3R3ME11D
	4.7	5×11	0.15	70	ELE-101E□□4R7ME11D
	10	6.3×11	0.15	150	ELE-101E□□100MF11D
	22	8×11.5	0.15	230	ELE-101E□□220MHB5D

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
1.0 to 10	0.42	0.60	0.80	1.00
22 to 33	0.55	0.75	0.90	1.00
47 to 330	0.70	0.85	0.95	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

FL Series

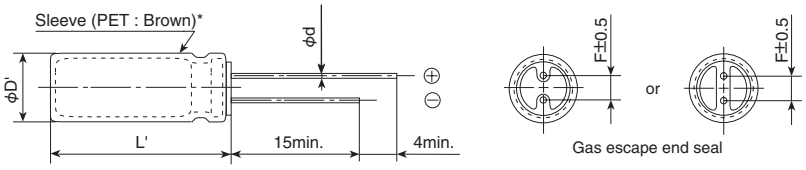
- Long life and high reliability for φ4×5L to φ8×7L mm range
- Endurance with ripple current : 3,000 hours at 105℃
- Suitable for long life and high reliability products
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−40 to +105℃							
Rated Voltage Range	6.3 to 50Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	6.3V	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.50	0.40	0.35	0.30	0.25	0.25	(at 20℃, 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 3,000 hours at 105℃.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±20% of the initial value						
	D.F. (tanδ)	≦200% of the initial specified value						
	Leakage current	≦The initial specified value						

◆DIMENSIONS [mm]

●Terminal Code : E



* φ8×5L : Coating case

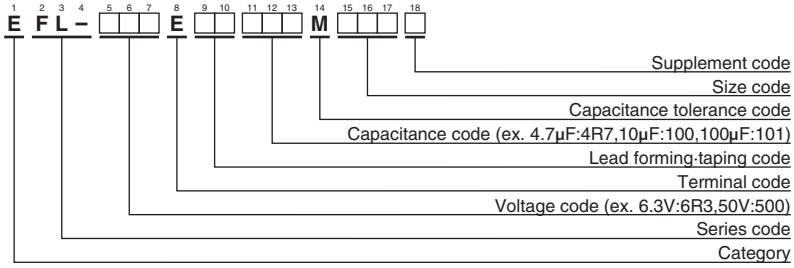
5mm Height

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	2.5
φD'	φD+0.5max.			
L'	L+1.0max.			

7mm Height

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	3.5
φD'	φD+0.5max.			
L'	L+1.0max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

FL Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Impedance (Ωmax/20℃, 100kHz)	Rated ripple current (mArms/105℃,100kHz)	Part No.
6.3	33	4×5	0.50	5.4	37	EFL-6R3E□□330MD05D
	47	4×7	0.50	4.5	44	EFL-6R3E□□470MD07D
	56	5×5	0.50	3.1	57	EFL-6R3E□□560ME05D
	82	5×7	0.50	2.5	70	EFL-6R3E□□820ME07D
	100	6.3×5	0.50	1.7	82	EFL-6R3E□□101MF05D
	150	6.3×7	0.50	1.3	116	EFL-6R3E□□151MF07D
	220	8×5	0.50	1.5	110	EFL-6R3E□□221MH05G
	270	8×7	0.50	0.90	162	EFL-6R3E□□271MH07D
10	22	4×5	0.40	5.4	37	EFL-100E□□220MD05D
	33	4×7	0.40	4.5	44	EFL-100E□□330MD07D
	33	5×5	0.40	3.1	57	EFL-100E□□330ME05D
	47	5×7	0.40	2.5	70	EFL-100E□□470ME07D
	68	6.3×5	0.40	1.7	82	EFL-100E□□680MF05D
	100	6.3×7	0.40	1.3	116	EFL-100E□□101MF07D
	150	8×5	0.40	1.5	110	EFL-100E□□151MH05G
	220	8×7	0.40	0.90	162	EFL-100E□□221MH07D
16	15	4×5	0.35	5.4	37	EFL-160E□□150MD05D
	22	4×7	0.35	4.5	44	EFL-160E□□220MD07D
	22	5×5	0.35	3.1	57	EFL-160E□□220ME05D
	33	5×7	0.35	2.5	70	EFL-160E□□330ME07D
	47	6.3×5	0.35	1.7	82	EFL-160E□□470MF05D
	68	6.3×7	0.35	1.3	116	EFL-160E□□680MF07D
	100	8×5	0.35	1.5	110	EFL-160E□□101MH05G
	150	8×7	0.35	0.90	162	EFL-160E□□151MH07D
25	10	4×5	0.30	5.4	37	EFL-250E□□100MD05D
	15	4×7	0.30	4.5	44	EFL-250E□□150MD07D
	15	5×5	0.30	3.1	57	EFL-250E□□150ME05D
	22	5×7	0.30	2.5	70	EFL-250E□□220ME07D
	33	6.3×5	0.30	1.7	82	EFL-250E□□330MF05D
	56	6.3×7	0.30	1.3	116	EFL-250E□□560MF07D
	68	8×5	0.30	1.5	110	EFL-250E□□680MH05G
	100	8×7	0.30	0.90	162	EFL-250E□□101MH07D
35	4.7	4×5	0.25	5.4	37	EFL-350E□□4R7MD05D
	6.8	4×7	0.25	4.5	44	EFL-350E□□6R8MD07D
	10	5×5	0.25	3.1	57	EFL-350E□□100ME05D
	10	5×7	0.25	2.5	70	EFL-350E□□100ME07D
	22	6.3×5	0.25	1.7	82	EFL-350E□□220MF05D
	22	6.3×7	0.25	1.3	116	EFL-350E□□220MF07D
	33	8×5	0.25	1.5	110	EFL-350E□□330MH05G
	47	8×7	0.25	0.90	162	EFL-350E□□470MH07D
50	1.0	4×5	0.25	19	18	EFL-500E□□1R0MD05D
	2.2	4×5	0.25	14	22	EFL-500E□□2R2MD05D
	3.3	4×5	0.25	11	26	EFL-500E□□3R3MD05D
	4.7	4×7	0.25	9.0	30	EFL-500E□□4R7MD07D
	4.7	5×5	0.25	6.0	40	EFL-500E□□4R7ME05D
	6.8	5×7	0.25	4.8	50	EFL-500E□□6R8ME07D
	10	6.3×5	0.25	2.9	63	EFL-500E□□100MF05D
	15	6.3×7	0.25	2.2	90	EFL-500E□□150MF07D
	22	8×5	0.25	2.6	84	EFL-500E□□220MH05G
	22	8×7	0.25	1.6	120	EFL-500E□□220MH07D

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

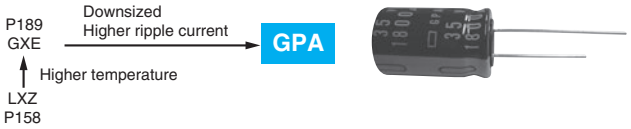
●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
to 3.3	0.20	0.66	0.90	1.00
4.7 to 6.8	0.35	0.70	0.90	1.00
10 to 150	0.40	0.75	0.90	1.00
220 to 270	0.50	0.85	0.94	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

GPA Upgrade! Series

- Guaranteed short time at 150℃
- Downsized, low impedance and high-ripple current version of GXE series
- Specified ESR after endurance test
- For high ripple current automotive applications. (Direct fuel injection and electric power steering etc.)
- Endurance with ripple current : 3,000 to 5,000 hours at 125℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

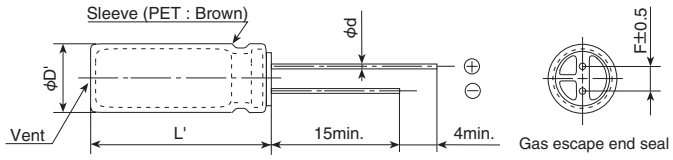


◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−40 to +125℃							
Rated Voltage Range	25 to 100Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							(at 20℃, 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	25V	35V	50V	63V	80V	100V	
	tanδ (Max.)	0.14	0.12	0.10	0.10	0.08	0.08	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	25V	35V	50V	63V	80V	100V	
	Z(−25℃)/Z(+20℃)	2	2	2	2	2	2	
	Z(−40℃)/Z(+20℃)	4	4	4	4	4	4	(at 120Hz)
Endurance 1	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours (3,000 hours for 25L and less) at 125℃.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						
Endurance 2	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the test condition that the rated voltage is applied for 100 hours at 150℃ and DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 4,500 hours (2,500 hours for 25L and less) at 125℃.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 125℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						

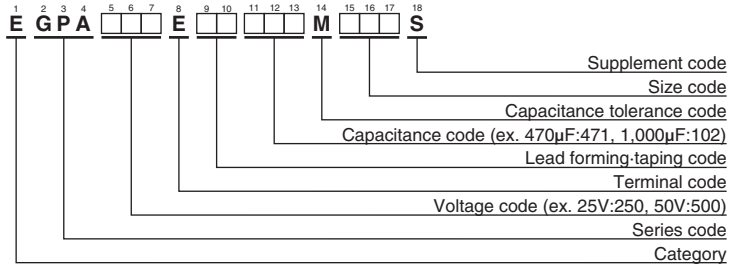
◆DIMENSIONS [mm]

●Terminal Code : E



φD	12.5	14.5	16	18
φd	0.6	0.8	0.8	0.8
F	5.0	7.5	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

GPA Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	ESR (Initial) (Ω max/100kHz)		ESR (End of Life) (Ω max/100kHz)		Rated ripple current (mArms/125℃,100kHz)	Part No.
			20℃	-40℃	20℃	-40℃		
25	1,200	12.5×20	0.044	0.22	0.18	2.2	1,820	EGPA250E□□122MK20S
	1,500	14.5×20	0.037	0.19	0.11	1.3	2,100	EGPA250E□□152MU20S
	1,800	12.5×25	0.033	0.17	0.13	1.6	2,280	EGPA250E□□182MK25S
	1,800	16×20	0.034	0.17	0.10	1.3	2,280	EGPA250E□□182ML20S
	2,200	12.5×30	0.029	0.13	0.11	1.3	2,560	EGPA250E□□222MK30S
	2,200	14.5×25	0.028	0.14	0.080	0.90	2,620	EGPA250E□□222MU25S
	2,700	12.5×35	0.024	0.11	0.090	0.80	2,970	EGPA250E□□272MK35S
	2,700	14.5×30	0.023	0.10	0.070	0.70	3,060	EGPA250E□□272MU30S
	2,700	16×25	0.026	0.13	0.080	1.1	2,860	EGPA250E□□272ML25S
	2,700	18×20	0.032	0.16	0.090	0.60	2,490	EGPA250E□□272MM20S
	3,300	12.5×40	0.021	0.095	0.080	0.50	3,340	EGPA250E□□332MK40S
	3,300	14.5×35	0.021	0.095	0.060	0.70	3,380	EGPA250E□□332MU35S
	3,300	16×30	0.023	0.10	0.070	0.90	3,160	EGPA250E□□332ML30S
	3,900	16×35	0.020	0.090	0.060	0.70	3,590	EGPA250E□□392ML35S
	3,900	18×25	0.024	0.12	0.070	0.50	3,010	EGPA250E□□392MM25S
	4,700	14.5×40	0.018	0.081	0.050	0.50	3,730	EGPA250E□□472MU40S
	4,700	18×30	0.022	0.099	0.080	0.60	3,390	EGPA250E□□472MM30S
	5,600	16×40	0.017	0.077	0.040	0.60	3,970	EGPA250E□□562ML40S
	5,600	18×35	0.019	0.086	0.070	0.50	3,840	EGPA250E□□562MM35S
	6,800	18×40	0.016	0.072	0.030	0.40	4,230	EGPA250E□□682MM40S
35	680	12.5×20	0.044	0.22	0.18	2.2	1,820	EGPA350E□□681MK20S
	1,000	12.5×25	0.033	0.17	0.13	1.6	2,280	EGPA350E□□102MK25S
	1,000	14.5×20	0.037	0.19	0.11	1.3	2,100	EGPA350E□□102MU20S
	1,200	12.5×30	0.029	0.13	0.11	1.3	2,560	EGPA350E□□122MK30S
	1,200	16×20	0.034	0.17	0.10	1.3	2,280	EGPA350E□□122ML20S
	1,200	14.5×25	0.028	0.14	0.080	0.90	2,620	EGPA350E□□122MU25S
	1,500	12.5×35	0.024	0.11	0.090	0.80	2,970	EGPA350E□□152MK35S
	1,500	14.5×30	0.023	0.10	0.070	0.70	3,060	EGPA350E□□152MU30S
	1,500	18×20	0.032	0.16	0.090	0.60	2,490	EGPA350E□□152MM20S
	1,800	12.5×40	0.021	0.095	0.080	0.50	3,340	EGPA350E□□182MK40S
	1,800	16×25	0.026	0.13	0.080	1.1	2,860	EGPA350E□□182ML25S
	2,200	14.5×35	0.021	0.095	0.060	0.70	3,380	EGPA350E□□222MU35S
	2,200	16×30	0.023	0.10	0.070	0.90	3,160	EGPA350E□□222ML30S
	2,200	18×25	0.024	0.12	0.070	0.50	3,010	EGPA350E□□222MM25S
	2,700	14.5×40	0.018	0.081	0.050	0.50	3,730	EGPA350E□□272MU40S
	2,700	16×35	0.020	0.090	0.060	0.70	3,590	EGPA350E□□272ML35S
	2,700	18×30	0.022	0.099	0.080	0.60	3,390	EGPA350E□□272MM30S
	3,300	16×40	0.017	0.077	0.040	0.60	3,970	EGPA350E□□332ML40S
	3,300	18×35	0.019	0.086	0.070	0.50	3,840	EGPA350E□□332MM35S
	4,700	18×40	0.016	0.072	0.030	0.40	4,230	EGPA350E□□472MM40S
50	470	12.5×20	0.065	0.33	0.18	2.2	1,500	EGPA500E□□471MK20S
	560	14.5×20	0.055	0.28	0.11	1.3	1,740	EGPA500E□□561MU20S
	680	12.5×25	0.048	0.24	0.13	1.6	1,900	EGPA500E□□681MK25S
	680	16×20	0.043	0.22	0.10	1.3	2,040	EGPA500E□□681ML20S
	820	12.5×30	0.041	0.18	0.11	1.3	2,150	EGPA500E□□821MK30S
	820	14.5×25	0.040	0.20	0.080	0.90	2,190	EGPA500E□□821MU25S
	1,000	12.5×35	0.034	0.15	0.090	0.80	2,510	EGPA500E□□102MK35S
	1,000	14.5×30	0.036	0.16	0.070	0.70	2,470	EGPA500E□□102MU30S
	1,000	16×25	0.031	0.16	0.080	1.1	2,620	EGPA500E□□102ML25S
	1,000	18×20	0.039	0.20	0.090	0.60	2,240	EGPA500E□□102MM20S
	1,200	12.5×40	0.028	0.13	0.080	0.50	2,870	EGPA500E□□122MK40S
	1,200	14.5×35	0.029	0.13	0.060	0.70	2,840	EGPA500E□□122MU35S
	1,200	16×30	0.027	0.13	0.070	0.90	2,940	EGPA500E□□122ML30S
	1,200	18×25	0.029	0.15	0.070	0.50	2,750	EGPA500E□□122MM25S
	1,500	16×35	0.023	0.10	0.060	0.70	3,300	EGPA500E□□152ML35S
	1,800	14.5×40	0.024	0.11	0.050	0.50	3,230	EGPA500E□□182MU40S
	1,800	18×30	0.026	0.12	0.080	0.60	3,140	EGPA500E□□182MM30S
	2,200	16×40	0.020	0.090	0.040	0.60	3,720	EGPA500E□□222ML40S
	2,200	18×35	0.022	0.10	0.070	0.50	3,510	EGPA500E□□222MM35S
	2,700	18×40	0.018	0.080	0.030	0.40	3,940	EGPA500E□□272MM40S

□□ : Enter the appropriate lead forming or taping code.

GPA Upgrade! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	ESR (Initial) (Ω max/100kHz)		ESR (End of Life) (Ω max/100kHz)		Rated ripple current (mArms/125℃,100kHz)	Part No.
			20℃	-40℃	20℃	-40℃		
63	470	16×20	0.085	0.58	0.19	3.0	1,790	EGPA630E□□471ML20S
	680	16×25	0.061	0.48	0.14	2.0	2,030	EGPA630E□□681ML25S
	680	18×20	0.070	0.49	0.19	3.0	1,910	EGPA630E□□681MM20S
	820	16×30	0.053	0.41	0.090	1.3	2,330	EGPA630E□□821ML30S
	1,000	16×35	0.044	0.33	0.070	0.90	2,580	EGPA630E□□102ML35S
	1,000	18×25	0.049	0.34	0.14	2.0	2,280	EGPA630E□□102MM25S
	1,200	16×40	0.036	0.26	0.060	0.80	2,900	EGPA630E□□122ML40S
	1,200	18×30	0.041	0.26	0.090	1.3	2,580	EGPA630E□□122MM30S
	1,500	18×35	0.035	0.21	0.070	0.90	2,890	EGPA630E□□152MM35S
	1,800	18×40	0.030	0.18	0.060	0.80	3,210	EGPA630E□□182MM40S
80	330	16×20	0.085	0.58	0.19	3.0	1,790	EGPA800E□□331ML20S
	470	16×25	0.061	0.48	0.14	2.0	2,030	EGPA800E□□471ML25S
	470	18×20	0.070	0.49	0.19	3.0	1,910	EGPA800E□□471MM20S
	560	16×30	0.053	0.41	0.090	1.3	2,330	EGPA800E□□561ML30S
	560	18×25	0.049	0.34	0.14	2.0	2,280	EGPA800E□□561MM25S
	680	16×35	0.044	0.33	0.070	0.90	2,580	EGPA800E□□681ML35S
	680	18×30	0.041	0.26	0.090	1.3	2,580	EGPA800E□□681MM30S
	820	16×40	0.036	0.26	0.060	0.80	2,900	EGPA800E□□821ML40S
	820	18×35	0.035	0.21	0.070	0.90	2,890	EGPA800E□□821MM35S
	1,200	18×40	0.030	0.18	0.060	0.80	3,210	EGPA800E□□122MM40S
100	200	16×20	0.11	0.88	0.25	3.9	1,580	EGPA101E□□201ML20S
	270	18×20	0.091	0.73	0.22	3.9	1,690	EGPA101E□□271MM20S
	300	16×25	0.079	0.72	0.18	2.7	1,990	EGPA101E□□301ML25S
	360	16×30	0.068	0.62	0.13	1.9	2,250	EGPA101E□□361ML30S
	390	18×25	0.064	0.50	0.15	2.7	2,110	EGPA101E□□391MM25S
	470	16×35	0.056	0.50	0.090	1.3	2,500	EGPA101E□□471ML35S
	510	18×30	0.054	0.39	0.13	1.9	2,410	EGPA101E□□511MM30S
	560	16×40	0.046	0.39	0.080	1.1	2,700	EGPA101E□□561ML40S
	620	18×35	0.044	0.32	0.090	1.3	2,690	EGPA101E□□621MM35S
	750	18×40	0.039	0.27	0.080	1.1	2,880	EGPA101E□□751MM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
200	0.40	0.82	0.93	1.00
270 to 560	0.50	0.85	0.94	1.00
620 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 6,800	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

Please contact us for lifetime estimation.

GXE Series

- For automobile modules and other high temperature applications
- Downsize, long life, low impedance and better low temperature characteristics
- Endurance with ripple current : 2,000 to 5,000 hours at 125℃
- Solvent resistant type except 63 to 450V (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

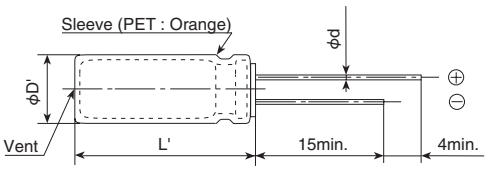
GXE → Downsized, Higher ripple current → GPA P186

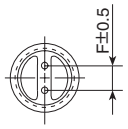
◆SPECIFICATIONS

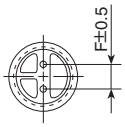
Items	Characteristics
Category Temperature Range	−40 to +125℃ (10 to 250Vdc) −25 to +125℃ (350 to 450Vdc)
Rated Voltage Range	10 to 450Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	10 to 100Vdc: I=0.03CV or 4μA, whichever is greater. 160 to 450Vdc: CV≦1,000 I=0.1CV+40; CV>1,000 I=0.04CV+100. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃, 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc): 10V 16V 25V 35V 50V 63V 80V 100V 160 to 250V 350 to 450V tanδ (Max.): 0.20 0.16 0.14 0.12 0.10 0.10 0.08 0.08 0.20 0.24 When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc): 10V 16V 25V 35V 50V 63V 80V 100V 160 to 250V 350 to 450V Z(−25℃)/Z(+20℃): 3 2 2 2 2 2 2 2 3 6 Z(−40℃)/Z(+20℃): 6 4 4 4 4 4 4 4 6 — (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified time at 125℃. Time: φ8 : 2,000hours φ10 : 3,000hours φ12.5 & φ16 : 5,000hours / 2,000hours Capacitance change: ≦±30% of the initial value / ≦±20% of the initial value D.F. (tanδ): ≦300% of the initial specified value / ≦200% of the initial specified value Leakage current: ≦The initial specified value / ≦The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours (500 hours for 350 to 450Vdc) at 125℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. Capacitance change: ≦±30% of the initial value / ≦±20% of the initial value D.F. (tanδ): ≦300% of the initial specified value / ≦200% of the initial specified value Leakage current: ≦The initial specified value / ≦500% of the initial specified value

◆DIMENSIONS [mm]

●Terminal Code : E



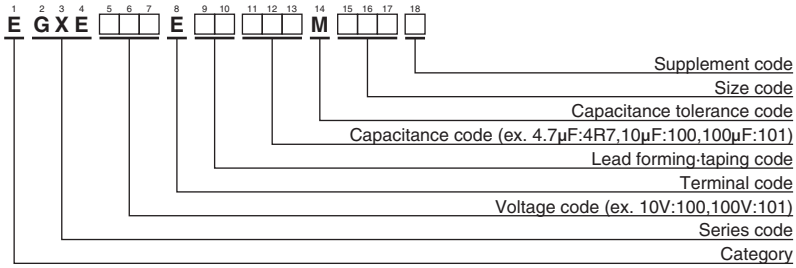




Gas escape end seal

φD	8	10	12.5	16
φd	0.6	0.6	0.6	0.8
F	3.5	5.0	5.0	7.5
φD'	φD+0.5max.			
L'	L+2.0max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

GXE Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/ 20℃, 100kHz)	Rated ripple current (mArms/ 125℃, Note1)	Part No.
10	220	8× 12	0.32	340	EGXE100E□□221MH12D
	330	10× 12.5	0.15	620	EGXE100E□□331MJC5S
	470	10× 12.5	0.15	620	EGXE100E□□471MJC5S
	1,000	10× 20	0.075	950	EGXE100E□□102MJ20S
	2,200	12.5× 25	0.040	1,350	EGXE100E□□222MK25S
	3,300	16× 25	0.031	1,620	EGXE100E□□332ML25S
	4,700	16× 31.5	0.025	1,860	EGXE100E□□472MLN3S
16	100	8× 12	0.32	340	EGXE160E□□101MH12D
	220	10× 12.5	0.15	620	EGXE160E□□221MJC5S
	330	10× 12.5	0.15	620	EGXE160E□□331MJC5S
	470	10× 16	0.094	790	EGXE160E□□471MJ16S
	1,000	12.5× 20	0.058	1,080	EGXE160E□□102MK20S
	2,200	16× 25	0.031	1,620	EGXE160E□□222ML25S
	3,300	16× 31.5	0.025	1,860	EGXE160E□□332MLN3S
25	100	8× 12	0.32	340	EGXE250E□□101MH12D
	220	10× 12.5	0.15	620	EGXE250E□□221MJC5S
	330	10× 16	0.094	790	EGXE250E□□331MJ16S
	470	10× 20	0.075	950	EGXE250E□□471MJ20S
	1,000	12.5× 25	0.040	1,350	EGXE250E□□102MK25S
	2,200	16× 31.5	0.025	1,860	EGXE250E□□222MLN3S
35	100	8× 12	0.32	340	EGXE350E□□101MH12D
	100	10× 12.5	0.15	620	EGXE350E□□101MJC5S
	220	10× 16	0.094	790	EGXE350E□□221MJ16S
	330	10× 20	0.075	950	EGXE350E□□331MJ20S
	470	12.5× 20	0.058	1,080	EGXE350E□□471MK20S
	1,000	16× 25	0.031	1,620	EGXE350E□□102ML25S
50	10	8× 12	0.75	180	EGXE500E□□100MH12D
	22	8× 12	0.50	250	EGXE500E□□220MH12D
	33	8× 12	0.50	280	EGXE500E□□330MH12D
	47	8× 12	0.50	280	EGXE500E□□470MH12D
	100	10× 12.5	0.20	520	EGXE500E□□101MJC5S
	220	10× 20	0.098	880	EGXE500E□□221MJ20S
	330	12.5× 20	0.081	990	EGXE500E□□331MK20S
	470	12.5× 25	0.059	1,150	EGXE500E□□471MK25S
	1,000	16× 31.5	0.032	1,590	EGXE500E□□102MLN3S
63	33	8× 12	1.5	150	EGXE630E□□330MH12D
	47	10× 12.5	0.59	530	EGXE630E□□470MJC5S
	100	10× 16	0.41	690	EGXE630E□□101MJ16S
	220	12.5× 20	0.16	1,050	EGXE630E□□221MK20S
	330	12.5× 25	0.12	1,290	EGXE630E□□331MK25S
	470	12.5× 30	0.097	1,460	EGXE630E□□471MK30S
	1,000	16× 31.5	0.059	1,850	EGXE630E□□102MLN3S
80	22	8× 12	1.5	150	EGXE800E□□220MH12D
	33	10× 12.5	0.8	480	EGXE800E□□330MJC5S
80	47	10×12.5	0.80	480	EGXE800E□□470MJC5S
	100	10×20	0.39	790	EGXE800E□□101MJ20S
	220	12.5×25	0.18	1,240	EGXE800E□□221MK25S
	330	12.5×30	0.16	1,390	EGXE800E□□331MK30S
	470	16×25	0.11	1,500	EGXE800E□□471ML25S
100	4.7	8×12	2.0	130	EGXE101E□□4R7MH12D
	10	8×12	1.5	150	EGXE101E□□100MH12D
	22	10×12.5	0.80	480	EGXE101E□□220MJC5S
	33	10×12.5	0.80	480	EGXE101E□□330MJC5S
	47	10×16	0.55	630	EGXE101E□□470MJ16S
	100	12.5×20	0.25	990	EGXE101E□□101MK20S
	220	16×25	0.11	1,500	EGXE101E□□221ML25S
	330	16×31.5	0.079	1,790	EGXE101E□□331MLN3S
160	22	10×20	—	115	EGXE161E□□220MJ20S
	33	10×25	—	154	EGXE161E□□330MJ25S
	47	12.5×20	—	187	EGXE161E□□470MK20S
	68	12.5×25	—	245	EGXE161E□□680MK25S
	100	16×25	—	329	EGXE161E□□101ML25S
	150	16×31.5	—	434	EGXE161E□□151MLN3S
200	10	10×20	—	78	EGXE201E□□100MJ20S
	22	10×25	—	126	EGXE201E□□220MJ25S
	33	12.5×20	—	157	EGXE201E□□330MK20S
	47	12.5×25	—	204	EGXE201E□□470MK25S
	68	16×20	—	250	EGXE201E□□680ML20S
	100	16×25	—	329	EGXE201E□□101ML25S
250	10	10×20	—	78	EGXE251E□□100MJ20S
	22	12.5×20	—	128	EGXE251E□□220MK20S
	33	12.5×25	—	171	EGXE251E□□330MK25S
	47	16×25	—	225	EGXE251E□□470ML25S
	68	16×31.5	—	292	EGXE251E□□680MLN3S
350	4.7	10×20	—	53	EGXE351E□□4R7MJ20S
	10	10×25	—	85	EGXE351E□□100MJ25S
	22	12.5×25	—	139	EGXE351E□□220MK25S
	33	16×25	—	189	EGXE351E□□330ML25S
	47	16×31.5	—	243	EGXE351E□□470MLN3S
400	4.7	10×20	—	53	EGXE401E□□4R7MJ20S
	10	10×25	—	86	EGXE401E□□100MJ25S
	22	12.5×30	—	142	EGXE401E□□220MK30S
	33	16×25	—	189	EGXE401E□□330ML25S
	47	16×31.5	—	243	EGXE401E□□470MLN3S
450	4.7	10×25	—	58	EGXE451E□□4R7MJ25S
	10	12.5×20	—	86	EGXE451E□□100MK20S
	22	16×25	—	154	EGXE451E□□220ML25S
	33	16×31.5	—	203	EGXE451E□□330MLN3S

□□ : Enter the appropriate lead forming or taping code.

(Note1) Ripple current frequency

10 to 100V = 100kHz

160 to 450V = 120Hz

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(10 to 100Vdc)

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
4.7 to 100	0.40	0.75	0.90	1.00
220 to 470	0.50	0.85	0.94	1.00
1,000	0.60	0.87	0.95	1.00
2,200 to 3,300	0.75	0.90	0.95	1.00
4,700	0.85	0.95	0.98	1.00

(160 to 450Vdc)

Capacitance (μF) \ Frequency (Hz)	50	120	300	1k	10k	100k
4.7 to 33	0.75	1.00	1.25	1.50	1.75	1.80
47 to 150	0.80	1.00	1.15	1.30	1.40	1.50

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

GXL Series

- Long-Life version of GXE series
- For automobile modules and other high temperature applications
- Endurance with ripple current : 5,000 hours at 125℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

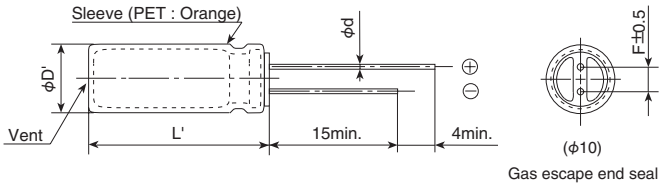
GXL
↑ Longer life
GXE P189

◆SPECIFICATIONS

Items	Characteristics						
Category Temperature Range	−40 to +125℃						
Rated Voltage Range	10 to 50Vdc						
Capacitance Tolerance	±20% (M)						(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)						(at 20℃, 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.20	0.16	0.14	0.12	0.10	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	
	Z(−25℃)/Z(+20℃)	3	2	2	2	2	
	Z(−40℃)/Z(+20℃)	6	4	4	4	4	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours at 125℃.						
	Capacitance change	≦±30% of the initial value					
	D.F. (tanδ)	≦300% of the initial specified value					
	Leakage current	≦The initial specified value					
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 125℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Capacitance change	≦±30% of the initial value					
	D.F. (tanδ)	≦300% of the initial specified value					
	Leakage current	≦The initial specified value					

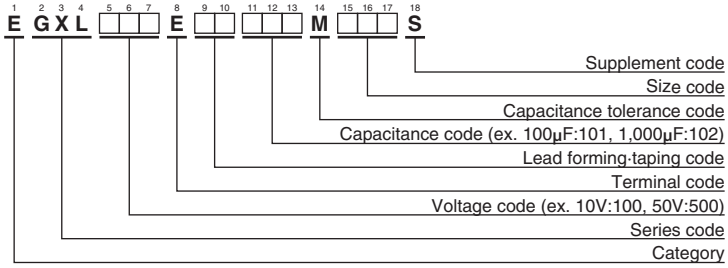
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10
φd	0.6
F	5.0
φD'	φD+0.5max.
L'	L+1.5max.

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

GXL Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/20℃, 100kHz)	Rated ripple current (mArms/125℃, 100kHz)	Part No.
10	330	10×12.5	0.17	800	EGXL100E□□331MJC5S
	470	10×12.5	0.17	800	EGXL100E□□471MJC5S
	1,000	10×20	0.094	1,300	EGXL100E□□102MJ20S
16	220	10×12.5	0.17	800	EGXL160E□□221MJC5S
	330	10×12.5	0.17	800	EGXL160E□□331MJC5S
	470	10×16	0.12	1,050	EGXL160E□□471MJ16S
25	220	10×12.5	0.17	800	EGXL250E□□221MJC5S
	330	10×16	0.12	1,050	EGXL250E□□331MJ16S
	470	10×20	0.094	1,300	EGXL250E□□471MJ20S
35	100	10×12.5	0.17	800	EGXL350E□□101MJC5S
	220	10×16	0.12	1,050	EGXL350E□□221MJ16S
	330	10×20	0.094	1,300	EGXL350E□□331MJ20S
50	100	10×12.5	0.30	590	EGXL500E□□101MJC5S
	220	10×20	0.19	970	EGXL500E□□221MJ20S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
100	0.40	0.75	0.90	1.00
220 to 470	0.50	0.85	0.94	1.00
1,000	0.60	0.87	0.95	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

GPD New! Series

- Guaranteed short time at 150℃
- Downsized and high-ripple current version of GPA series
- For automobile modules and other high temperature applications
- Endurance with ripple current : 2,000 to 3,000 hours at 125℃ to 135℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

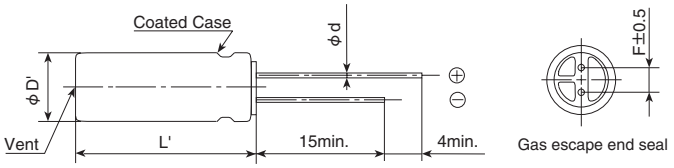
GPA P186 → Downsized, Higher ripple current → **GPD**

◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	−40 to +135℃							
Rated Voltage Range	25 to 100Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)							(at 20℃, 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	25V	35V	50V	63V	80V	100V	
	tanδ (Max.)	0.14	0.12	0.10	0.10	0.08	0.08	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.							(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	25V	35V	50V	63V	80V	100V	
	Z(−25℃)/Z(+20℃)	2	2	2	2	2	2	
	Z(−40℃)/Z(+20℃)	4	4	4	4	4	4	(at 120Hz)
Endurance 1	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 125℃ or 135℃.							
	Time	125℃ 3,000hours 135℃ 25 to 50Vdc : 3,000hours 63 to 100Vdc : 2,000hours						
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						
Endurance 2	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the test condition that the rated voltage is applied for 100 hours at 150℃ and DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 125℃ or 135℃.							
	Time	125℃ 2,500hours 135℃ 25 to 50Vdc : 2,500hours 63 to 100Vdc : 1,500hours						
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 125℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tanδ)	≦300% of the initial specified value						
	Leakage current	≦The initial specified value						

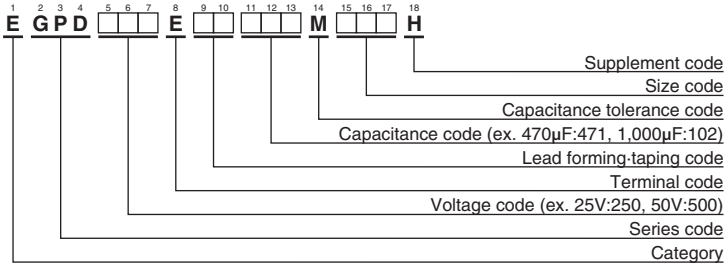
◆DIMENSIONS [mm]

●Terminal Code : E



φD	12.5	14.5	16	18
φd	0.6	0.8	0.8	0.8
F	5.0	7.5	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

GPD New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	ESR (Ω max/100kHz)		Rated ripple current (mArms/100kHz)		Part No.
			20℃	-40℃	125℃	135℃	
25	2,000	12.5×20	0.042	0.48	2,760	1,690	EGPD250E□□202MK20H
	2,700	14.5×20	0.038	0.37	2,990	1,830	EGPD250E□□272MU20H
	3,000	12.5×25	0.033	0.30	3,480	2,010	EGPD250E□□302MK25H
	3,300	16×20	0.035	0.27	3,040	1,860	EGPD250E□□332ML20H
	3,600	12.5×30	0.028	0.24	4,490	2,900	EGPD250E□□362MK30H
	3,900	14.5×25	0.030	0.28	4,120	2,780	EGPD250E□□392MU25H
	4,300	18×20	0.034	0.22	3,250	1,870	EGPD250E□□432MM20H
	4,700	12.5×35	0.025	0.21	5,140	3,190	EGPD250E□□472MK35H
	4,700	16×25	0.028	0.22	4,260	2,870	EGPD250E□□472ML25H
	5,100	12.5×40	0.024	0.19	5,810	3,470	EGPD250E□□512MK40H
	5,100	14.5×30	0.025	0.24	4,880	3,150	EGPD250E□□512MU30H
	5,600	14.5×35	0.023	0.20	5,420	3,360	EGPD250E□□562MU35H
	5,600	16×30	0.023	0.18	5,480	3,400	EGPD250E□□562ML30H
	6,200	18×25	0.027	0.19	4,500	2,900	EGPD250E□□622MM25H
	6,800	14.5×40	0.022	0.16	6,240	3,730	EGPD250E□□682MU40H
	7,500	16×35	0.020	0.14	6,070	3,630	EGPD250E□□752ML35H
	7,500	18×30	0.022	0.16	5,600	3,470	EGPD250E□□752MM30H
	9,100	16×40	0.019	0.12	6,810	3,930	EGPD250E□□912ML40H
	10,000	18×35	0.019	0.12	6,280	3,750	EGPD250E□□103MM35H
	12,000	18×40	0.018	0.10	7,070	4,080	EGPD250E□□123MM40H
35	1,300	12.5×20	0.042	0.48	2,760	1,690	EGPD350E□□132MK20H
	1,600	14.5×20	0.038	0.37	2,990	1,830	EGPD350E□□162MU20H
	1,800	12.5×25	0.033	0.30	3,480	2,010	EGPD350E□□182MK25H
	2,000	16×20	0.035	0.27	3,040	1,860	EGPD350E□□202ML20H
	2,200	12.5×30	0.028	0.24	4,490	2,900	EGPD350E□□222MK30H
	2,400	14.5×25	0.030	0.28	4,120	2,780	EGPD350E□□242MU25H
	2,400	18×20	0.034	0.22	3,250	1,870	EGPD350E□□242MM20H
	2,700	12.5×35	0.025	0.21	5,140	3,190	EGPD350E□□272MK35H
	3,000	14.5×30	0.025	0.24	4,880	3,150	EGPD350E□□302MU30H
	3,000	16×25	0.028	0.22	4,260	2,870	EGPD350E□□302ML25H
	3,300	12.5×40	0.024	0.19	5,810	3,470	EGPD350E□□332MK40H
	3,300	14.5×35	0.023	0.20	5,420	3,360	EGPD350E□□332MU35H
	3,600	16×30	0.023	0.18	5,480	3,400	EGPD350E□□362ML30H
	3,900	18×25	0.027	0.19	4,500	2,900	EGPD350E□□392MM25H
	4,300	14.5×40	0.022	0.16	6,240	3,730	EGPD350E□□432MU40H
	4,300	16×35	0.020	0.14	6,070	3,630	EGPD350E□□432ML35H
	4,700	18×30	0.022	0.16	5,600	3,470	EGPD350E□□472MM30H
	5,600	16×40	0.019	0.12	6,810	3,930	EGPD350E□□562ML40H
	6,200	18×35	0.019	0.12	6,280	3,750	EGPD350E□□622MM35H
	7,500	18×40	0.018	0.10	7,070	4,080	EGPD350E□□752MM40H
50	620	12.5×20	0.073	0.88	2,400	1,470	EGPD500E□□621MK20H
	750	14.5×20	0.063	0.73	2,760	1,590	EGPD500E□□751MU20H
	820	12.5×25	0.058	0.67	3,350	2,260	EGPD500E□□821MK25H
	1,000	16×20	0.050	0.55	2,960	1,870	EGPD500E□□102ML20H
	1,100	12.5×30	0.048	0.52	4,220	2,520	EGPD500E□□112MK30H
	1,100	14.5×25	0.048	0.52	3,750	2,420	EGPD500E□□112MU25H
	1,300	12.5×35	0.042	0.44	4,810	2,780	EGPD500E□□132MK35H
	1,300	16×25	0.042	0.44	4,040	2,500	EGPD500E□□132ML25H
	1,300	18×20	0.042	0.44	3,130	2,110	EGPD500E□□132MM20H
	1,500	14.5×30	0.038	0.39	4,590	2,740	EGPD500E□□152MU30H
	1,600	12.5×40	0.037	0.36	5,240	3,020	EGPD500E□□162MK40H
	1,600	14.5×35	0.035	0.36	5,060	2,920	EGPD500E□□162MU35H
	1,600	16×30	0.035	0.36	5,130	2,960	EGPD500E□□162ML30H
	1,800	18×25	0.033	0.32	4,230	2,530	EGPD500E□□182MM25H
	2,200	14.5×40	0.029	0.27	5,630	3,250	EGPD500E□□222MU40H
	2,200	16×35	0.029	0.27	5,480	3,160	EGPD500E□□222ML35H
	2,400	18×30	0.028	0.25	5,240	3,020	EGPD500E□□242MM30H
	2,700	16×40	0.025	0.22	5,930	3,420	EGPD500E□□272ML40H
	3,000	18×35	0.024	0.20	5,870	3,390	EGPD500E□□302MM35H
	3,600	18×40	0.023	0.16	6,420	3,700	EGPD500E□□362MM40H
63	390	12.5×20	0.072	0.56	1,640	1,420	EGPD630E□□391MK20H
	560	12.5×25	0.052	0.39	2,520	2,050	EGPD630E□□561MK25H
	560	14.5×20	0.061	0.40	1,790	1,550	EGPD630E□□561MU20H
	680	16×20	0.053	0.34	2,140	1,910	EGPD630E□□681ML20H
	750	12.5×30	0.042	0.30	3,110	2,630	EGPD630E□□751MK30H
	750	14.5×25	0.047	0.30	2,650	2,160	EGPD630E□□751MU25H
	910	12.5×35	0.035	0.25	3,760	2,970	EGPD630E□□911MK35H
	910	18×20	0.044	0.26	2,350	2,100	EGPD630E□□911MM20H

□□ : Enter the appropriate lead forming or taping code.

GPD New! Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	ESR (Ω max/100kHz)		Rated ripple current (mArms/100kHz)		Part No.
			20℃	-40℃	125℃	135℃	
63	1,000	14.5×30	0.037	0.23	3,360	2,840	EGPD630E□□102MU30H
	1,000	16×25	0.038	0.23	2,940	2,680	EGPD630E□□102ML25H
	1,100	12.5×40	0.031	0.22	4,610	3,260	EGPD630E□□112MK40H
	1,200	14.5×35	0.033	0.20	3,860	3,050	EGPD630E□□122MU35H
	1,200	16×30	0.034	0.20	3,860	3,050	EGPD630E□□122ML30H
	1,300	18×25	0.033	0.19	3,080	2,810	EGPD630E□□132MM25H
	1,500	14.5×40	0.028	0.16	4,930	3,490	EGPD630E□□152MU40H
	1,600	16×35	0.027	0.15	4,590	3,420	EGPD630E□□162ML35H
	1,600	18×30	0.028	0.15	4,080	3,220	EGPD630E□□162MM30H
	1,800	16×40	0.025	0.14	5,190	3,670	EGPD630E□□182ML40H
	2,200	18×35	0.022	0.12	5,220	3,690	EGPD630E□□222MM35H
	2,400	18×40	0.021	0.11	5,660	3,820	EGPD630E□□242MM40H
80	270	12.5×20	0.072	0.56	1,640	1,420	EGPD800E□□271MK20H
	360	14.5×20	0.061	0.40	1,790	1,550	EGPD800E□□361MU20H
	390	12.5×25	0.052	0.39	2,520	2,050	EGPD800E□□391MK25H
	470	16×20	0.053	0.34	2,140	1,910	EGPD800E□□471ML20H
	510	12.5×30	0.042	0.30	3,110	2,630	EGPD800E□□511MK30H
	510	14.5×25	0.047	0.30	2,650	2,160	EGPD800E□□511MU25H
	620	12.5×35	0.035	0.25	3,760	2,970	EGPD800E□□621MK35H
	620	18×20	0.044	0.26	2,350	2,100	EGPD800E□□621MM20H
	680	14.5×30	0.037	0.23	3,360	2,840	EGPD800E□□681MU30H
	680	16×25	0.038	0.23	2,940	2,680	EGPD800E□□681ML25H
	750	12.5×40	0.031	0.22	4,610	3,260	EGPD800E□□751MK40H
	750	14.5×35	0.033	0.20	3,860	3,050	EGPD800E□□751MU35H
	750	16×30	0.034	0.20	3,860	3,050	EGPD800E□□751ML30H
	820	18×25	0.033	0.19	3,080	2,810	EGPD800E□□821MM25H
	1,000	14.5×40	0.028	0.16	4,930	3,490	EGPD800E□□102MU40H
	1,000	16×35	0.027	0.15	4,590	3,420	EGPD800E□□102ML35H
	1,100	18×30	0.028	0.15	4,080	3,220	EGPD800E□□112MM30H
	1,300	16×40	0.025	0.14	5,190	3,670	EGPD800E□□132ML40H
	1,300	18×35	0.022	0.12	5,220	3,690	EGPD800E□□132MM35H
	1,600	18×40	0.021	0.11	5,660	3,820	EGPD800E□□162MM40H
100	160	12.5×20	0.090	0.75	1,580	1,410	EGPD101E□□161MK20H
	200	14.5×20	0.083	0.61	1,660	1,480	EGPD101E□□201MU20H
	220	12.5×25	0.068	0.55	2,140	1,960	EGPD101E□□221MK25H
	270	16×20	0.067	0.47	2,050	1,670	EGPD101E□□271ML20H
	300	12.5×30	0.052	0.41	2,950	2,330	EGPD101E□□301MK30H
	300	14.5×25	0.058	0.42	2,300	2,100	EGPD101E□□301MU25H
	360	12.5×35	0.045	0.35	3,530	2,630	EGPD101E□□361MK35H
	360	18×20	0.061	0.35	2,270	1,860	EGPD101E□□361MM20H
	390	14.5×30	0.047	0.33	3,120	2,460	EGPD101E□□391MU30H
	390	16×25	0.048	0.33	2,790	2,360	EGPD101E□□391ML25H
	430	12.5×40	0.038	0.29	4,140	2,920	EGPD101E□□431MK40H
	430	14.5×35	0.043	0.30	3,510	2,620	EGPD101E□□431MU35H
	470	16×30	0.041	0.27	3,440	2,720	EGPD101E□□471ML30H
	510	18×25	0.045	0.25	2,920	2,470	EGPD101E□□511MM25H
	560	14.5×40	0.034	0.23	4,330	3,060	EGPD101E□□561MU40H
	560	16×35	0.036	0.23	4,190	2,960	EGPD101E□□561ML35H
	620	18×30	0.037	0.20	3,920	2,920	EGPD101E□□621MM30H
	750	16×40	0.028	0.18	5,020	3,380	EGPD101E□□751ML40H
	820	18×35	0.030	0.16	4,710	3,330	EGPD101E□□821MM35H
	910	18×40	0.026	0.14	5,280	3,560	EGPD101E□□911MM40H

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	10k	100k
160 to 200	0.40	0.75	0.90	1.00
220 to 620	0.50	0.85	0.94	1.00
680 to 2,000	0.60	0.87	0.95	1.00
2,200 to 4,300	0.75	0.90	0.95	1.00
4,700 to 12,000	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

Please contact us for lifetime estimation.

GXH Series

- For automobile modules and other high temperature applications
- Endurance with ripple current : 1,500 to 2,000 hours at 135℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

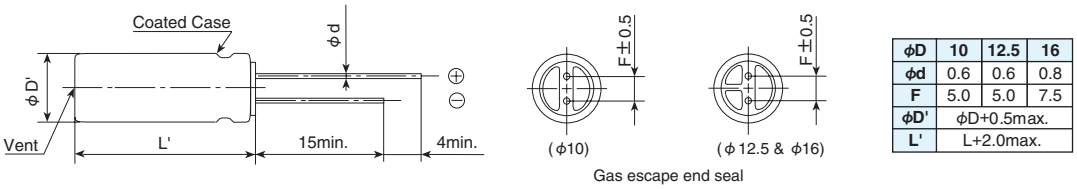
GXE P189 ← Higher temperature — GXH

◆SPECIFICATIONS

Items	Characteristics						
Category Temperature Range	−40 to +135℃						
Rated Voltage Range	10 to 50Vdc						
Capacitance Tolerance	±20% (M)						(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)						(at 20℃, 1 minute)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	
	tanδ (Max.)	0.20	0.16	0.14	0.12	0.10	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.						(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	10V	16V	25V	35V	50V	
	Z(−25℃)/Z(+20℃)	3	2	2	2	2	
	Z(−40℃)/Z(+20℃)	6	4	4	4	4	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified time at 135℃.						
	Time	φ10 : 1,500hours φ12.5 & φ16 : 2,000hours					
	Capacitance change	≦±30% of the initial value					
	D.F. (tanδ)	≦300% of the initial specified value					
	Leakage current	≦The initial specified value					
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 135℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Capacitance change	≦±30% of the initial value					
	D.F. (tanδ)	≦300% of the initial specified value					
	Leakage current	≦The initial specified value					

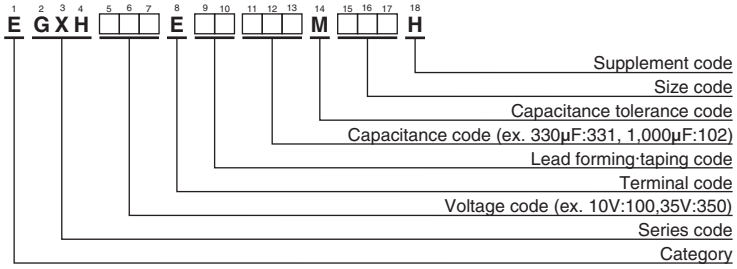
◆DIMENSIONS [mm]

●Terminal Code : E



φD	10	12.5	16
φd	0.6	0.6	0.8
F	5.0	5.0	7.5
φD'	φD+0.5max.		
L'	L+2.0max.		

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

GXH Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Case size φD× L(mm)	Impedance (Ωmax/20℃, 100kHz)	Rated ripple current (mArms/135℃, 100kHz)	Part No.
10	330	10×12.5	0.15	620	EGXH100E□□331MJC5H
	470	10×12.5	0.15	620	EGXH100E□□471MJC5H
	1,000	10×20	0.075	950	EGXH100E□□102MJ20H
	2,200	12.5×25	0.040	1,350	EGXH100E□□222MK25H
	3,300	16×25	0.031	1,620	EGXH100E□□332ML25H
	4,700	16×31.5	0.025	1,860	EGXH100E□□472MLN3H
16	220	10×12.5	0.15	620	EGXH160E□□221MJC5H
	330	10×12.5	0.15	620	EGXH160E□□331MJC5H
	470	10×16	0.094	790	EGXH160E□□471MJ16H
	1,000	12.5×20	0.058	1,080	EGXH160E□□102MK20H
	2,200	16×25	0.031	1,620	EGXH160E□□222ML25H
	3,300	16×31.5	0.025	1,860	EGXH160E□□332MLN3H
25	220	10×12.5	0.15	620	EGXH250E□□221MJC5H
	330	10×16	0.094	790	EGXH250E□□331MJ16H
	470	10×20	0.075	950	EGXH250E□□471MJ20H
	1,000	12.5×25	0.040	1,350	EGXH250E□□102MK25H
	2,200	16×31.5	0.025	1,860	EGXH250E□□222MLN3H
35	100	10×12.5	0.15	620	EGXH350E□□101MJC5H
	220	10×16	0.094	790	EGXH350E□□221MJ16H
	330	10×20	0.075	950	EGXH350E□□331MJ20H
	470	12.5×20	0.058	1,080	EGXH350E□□471MK20H
	1,000	16×25	0.031	1,620	EGXH350E□□102ML25H
50	100	10×12.5	0.20	520	EGXH500E□□101MJC5H
	220	10×20	0.098	880	EGXH500E□□221MJ20H
	330	12.5×20	0.081	990	EGXH500E□□331MK20H
	470	12.5×25	0.059	1,150	EGXH500E□□471MK25H
	1,000	16×31.5	0.032	1,590	EGXH500E□□102MLN3H

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
100	0.40	0.75	0.90	1.00
220 to 470	0.50	0.85	0.94	1.00
1,000	0.60	0.87	0.95	1.00
2,200 to 3,300	0.75	0.90	0.95	1.00
4,700	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

LBG Series

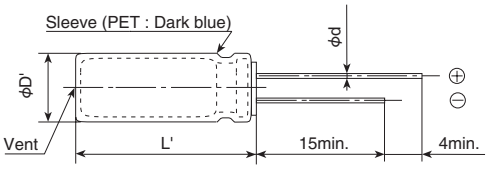
- For airbag application
- High capacitance, low impedance, and good low temperature behavior
- Endurance with ripple current : 5,000 hours at 105℃
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

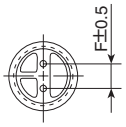
◆SPECIFICATIONS

Items	Characteristics			
Category Temperature Range	−55 to +105℃			
Rated Voltage Range	25 & 35Vdc			
Capacitance Range	1,000 to 11,000μF			(at 20℃, 120Hz)
Capacitance Tolerance	0 to +30% (A)			(at 20℃, 120Hz)
Leakage Current	I=0.01CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)			(at 20℃ after 2 minutes)
Dissipation Factor (tanδ)	Rated voltage (Vdc)	25V	35V	
	tanδ (Max.)	0.20	0.16	
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase.			(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	25V	35V	
	Z(−55℃)/Z(+20℃)	3	3	
	Impedance at -40℃ and 20℃ 100kHz in the STANDARD RATINGS			(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours at 105℃.			
	Capacitance change	≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value		
	Leakage current	≦The initial specified value		
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.			
	Capacitance change	≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value		
	Leakage current	≦The initial specified value		

◆DIMENSIONS [mm]

●Terminal Code : E





Gas escape end seal

φD	12.5	14.5	16	18
φd	0.6	0.8	0.8	0.8
F	5.0	7.5	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
E	L	B	G				E						A				S

- Supplement code
- Size code
- Capacitance tolerance code
- Capacitance code (ex. 1,000μF:102, 11,000μF:113)
- Lead forming·taping code
- Terminal code
- Voltage code (ex. 16V:160, 35V:350)
- Series code
- Category

Please refer to "Product code guide (radial lead type)"

LBG Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/100kHz)		Rated ripple current (mArms/105℃,100kHz)	Part No.
			20℃	-40℃		
25	1,700	12.5×20	0.057	0.29	1,700	ELBG250E□□172AK20S
	2,400	12.5×25	0.045	0.23	2,000	ELBG250E□□242AK25S
	2,400	14.5×20	0.051	0.26	2,000	ELBG250E□□242AU20S
	2,800	12.5×30	0.039	0.20	2,300	ELBG250E□□282AK30S
	3,000	16×20	0.044	0.22	2,250	ELBG250E□□302AL20S
	3,400	14.5×25	0.041	0.21	2,400	ELBG250E□□342AU25S
	3,500	12.5×35	0.033	0.17	2,700	ELBG250E□□352AK35S
	4,200	16×25	0.033	0.17	2,600	ELBG250E□□422AL25S
	4,200	18×20	0.042	0.21	2,500	ELBG250E□□422AM20S
	4,500	12.5×40	0.027	0.14	3,100	ELBG250E□□452AK40S
	4,600	14.5×31.5	0.032	0.16	2,700	ELBG250E□□462AUN3S
	5,400	14.5×35.5	0.028	0.14	3,100	ELBG250E□□542AUP1S
	5,600	16×31.5	0.026	0.13	3,200	ELBG250E□□562ALN3S
	6,000	18×25	0.030	0.15	2,800	ELBG250E□□602AM25S
	6,400	14.5×40	0.025	0.13	3,400	ELBG250E□□642AU40S
	6,600	16×35.5	0.023	0.12	3,500	ELBG250E□□662ALP1S
	7,800	16×40	0.021	0.11	3,800	ELBG250E□□782AL40S
	7,900	18×31.5	0.024	0.12	3,500	ELBG250E□□792AMN3S
	9,200	18×35.5	0.022	0.11	3,700	ELBG250E□□922AMP1S
	11,000	18×40	0.020	0.10	4,000	ELBG250E□□113AM40S
35	1,000	12.5×20	0.057	0.29	1,700	ELBG350E□□102AK20S
	1,400	12.5×25	0.045	0.23	2,000	ELBG350E□□142AK25S
	1,400	14.5×20	0.051	0.26	2,000	ELBG350E□□142AU20S
	1,600	12.5×30	0.039	0.20	2,300	ELBG350E□□162AK30S
	1,800	16×20	0.044	0.22	2,250	ELBG350E□□182AL20S
	2,000	14.5×25	0.041	0.21	2,400	ELBG350E□□202AU25S
	2,100	12.5×35	0.033	0.17	2,700	ELBG350E□□212AK35S
	2,500	16×25	0.033	0.17	2,600	ELBG350E□□252AL25S
	2,500	18×20	0.042	0.21	2,500	ELBG350E□□252AM20S
	2,700	12.5×40	0.027	0.14	3,100	ELBG350E□□272AK40S
	2,800	14.5×31.5	0.032	0.16	2,700	ELBG350E□□282AUN3S
	3,200	14.5×35.5	0.028	0.14	3,100	ELBG350E□□322AUP1S
	3,400	16×31.5	0.026	0.13	3,200	ELBG350E□□342ALN3S
	3,600	18×25	0.030	0.15	2,800	ELBG350E□□362AM25S
	3,800	14.5×40	0.025	0.13	3,400	ELBG350E□□382AU40S
	4,000	16×35.5	0.023	0.12	3,500	ELBG350E□□402ALP1S
	4,700	16×40	0.021	0.11	3,800	ELBG350E□□472AL40S
	4,800	18×31.5	0.024	0.12	3,500	ELBG350E□□482AMN3S
	5,600	18×35.5	0.022	0.11	3,700	ELBG350E□□562AMP1S
	6,700	18×40	0.020	0.10	4,000	ELBG350E□□672AM40S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance (μF) \ Frequency (Hz)	120	1k	10k	100k
1,000 to 2,000	0.60	0.87	0.95	1.00
2,100 to 3,800	0.75	0.90	0.95	1.00
4,000 to 11,000	0.85	0.95	0.98	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

PH Series

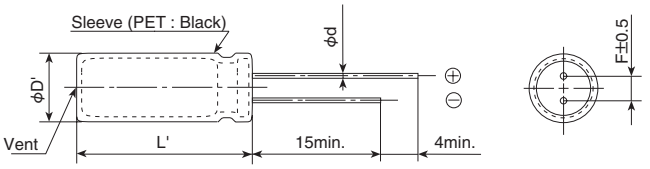
RoHS Compliant

◆SPECIFICATIONS

Items	Characteristics	
Category Temperature Range	−20 to +65℃	
Rated Voltage Range	300, 315, 330Vdc	
Capacitance Tolerance	−10 to +20% (V)	(at 20℃, 120Hz)
Leakage Current	I=1×C Where, I : Max. leakage current (μA), C : Nominal capacitance (μF)	(at 20℃ after 5 minutes)
Dissipation Factor (tanδ)	0.06max.	(at 20℃, 120Hz)
Charge and Discharge Characteristics	The following specifications shall be satisfied when the capacitors are restored to 20℃ after charge and discharge are repeated 5,000 times at room temperature (5 to 35℃). Discharge resistance or Xenon tube : 0.7 to 1.0Ω.	
	Capacitance change	≦±10% of the initial value
	D.F. (tanδ)	≦150% of the initial specified value
	Leakage current	≦150% of the initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 65℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.	
	Capacitance change	≦±10% of the initial value
	D.F. (tanδ)	≦150% of the initial specified value
	Leakage current	≦150% of the initial specified value

◆DIMENSIONS [mm]

●Terminal Code : E



φD	6.0 to 7.5	8.0 to 8.5	9.0 to 9.5	10.0 to 14.0	14.5 to 18.0
φd	0.5	0.6	0.6	0.6	0.8
F	2.5	3.5	4	5	7.5
φD'	φD+0.5max.				
L'	L+1.0max.				

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
E	P	H	−				E										S

Supplement code
Size code (L code)
Size code (φD code)
Nominal capacitance code (ex. 50μF:500,100μF:101)
Lead forming·taping code
Terminal code
Rated voltage code (ex. 315V:3B1,330V:331)
Series code
Category

Please refer to "Product code guide (radial lead type)"

●Size Code

φD code (14th, 15th)

φD(mm)	φD code	
	14th	15th
6.0	6	0
6.5	6	5
7.0	7	0
7.5	7	5
8.0	8	0
8.5	8	5
9.0	9	0
9.5	9	5
10.0	A	0
10.5	A	5
11.0	B	0
11.5	B	5
12.0	C	0
12.5	C	5
13.0	D	0
13.5	D	5
14.0	E	0
14.5	E	5
15.0	F	0
15.5	F	5
16.0	G	0
16.5	G	5
17.0	H	0
17.5	H	5
18.0	J	0

L code (16th, 17th)

L(mm)	L code	
	16th	17th
15.0	1	5
16.0	1	6
17.0	1	7
18.0	1	8
19.0	1	9
20.0	2	0
21.0	2	1
22.0	2	2
23.0	2	3
24.0	2	4
25.0	2	5
26.0	2	6
27.0	2	7
28.0	2	8
29.0	2	9
30.0	3	0
31.0	3	1
32.0	3	2
33.0	3	3
34.0	3	4
35.0	3	5
36.0	3	6
37.0	3	7
38.0	3	8
39.0	3	9
40.0	4	0
41.0	4	1
42.0	4	2
43.0	4	3
44.0	4	4
45.0	4	5

PH Series

◆RATINGS (REFERENCE)

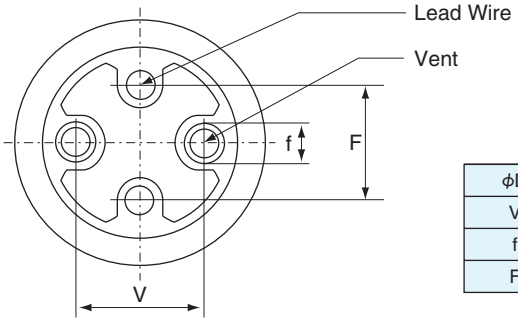
WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Part No.
315	86	10×30	0.06	EPH-3B1E□□860A030S
	122	10×40	0.06	EPH-3B1E□□121A040S
	144	12.5×30	0.06	EPH-3B1E□□1E1C530S
	209	12.5×40	0.06	EPH-3B1E□□211C540S
330	80	10×30	0.06	EPH-331E□□800A030S
	114	10×40	0.06	EPH-331E□□1B1A040S
	137	12.5×30	0.06	EPH-331E□□1D1C530S
	194	12.5×40	0.06	EPH-331E□□1K1C540S

□□ : Enter the appropriate lead forming or taping code.

●Products of vents on the sealing rubber

DIMENSIONS[mm]

<In the case of diameter 10mm>



φD	10
V	(4.6)
f	(1.8)
F	5±0.5

Products of vent on rubber type, please make clearance about 1mm minimum between rubber and board. If it is difficult to make clearance 1mm minimum between rubber and board, please arrange gas escaping hole on the board (same position and 40% minimum diameter from the vent).
The products of dual vents on rubber, requires placement one or two gas escaping hole on the board.

●Products of a vent on the case

Please make the following open space over the vent so that the vent can operate correctly.

Case diameter	Clearance
φ6 to 16mm	2mm minimum
φ16.5mm and up	3mm minimum

Above part numbers are only reference.
Please consult with us about detail specifications (rated voltage, capacitance, case size, type of rubber, etc...).