Alchip™-MVA Series

- φ4 through φ18 case sizes are fully lined up
- Endurance : 2,000 hours at 85℃
- Suitable to fit for downsized equipment
- Solvent resistant type except 100 to 450Vdc (see PRECAUTIONS AND GUIDELINES)
- **RoHS Compliant**

MVA → MVE P70 (105℃)

◆SPECIFICATIONS

Items	Characteristics
Category Temperature Range	−40 to +85℃
Rated Voltage Range	4 to 450Vdc
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	Rated voltage (Vdc): 4 to 100V / 160 to 450V D55 to JA0: I=0.01CV or 3μA, whichever is greater.(after 2 minutes) / — KE0 to MN0: I=0.03CV or 4μA, whichever is greater.(after 1 minute) / I=0.04CV+100μA max.(after 1 minute) Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃)

Dissipation Factor (tanδ)

Rated voltage (Vdc)		4V	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	400 & 450V
tanδ (Max.)	D55 to JA0	0.42	0.35	0.30	0.26	0.16	0.14	0.12	0.12	0.12	—	—
	KE0 to MN0	—	0.38	0.34	0.30	0.26	0.22	0.18	0.14	0.10	0.20	0.25

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)		4V	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	400 & 450V
D55 to JA0	Z(−25℃)/Z(+20℃)	7	4	3	2	2	2	2	2	3	—	—
	Z(−40℃)/Z(+20℃)	17	10	8	6	4	3	3	3	4	—	—
KE0 to MN0	Z(−25℃)/Z(+20℃)	—	5	4	3	2	2	2	2	2	3	6
	Z(−40℃)/Z(+20℃)	—	12	10	8	5	4	3	3	3	6	10

(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℃.

Size code	D55 to JA0	D55 to JA0	KE0 to MN0
Rated voltage (Vdc)	4V & 6.3V	10 to 100V	6.3 to 450V
Capacitance change	≦±30% 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	

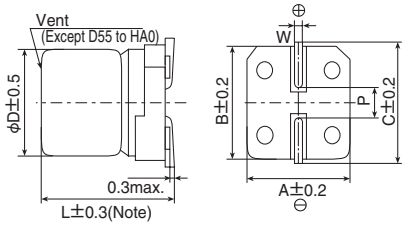
Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 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.

Size code	D55 to JA0	D55 to JA0	KE0 to MN0
Rated voltage	4V & 6.3V	10 to 100V	6.3 to 450V
Capacitance change	≦±30% 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	

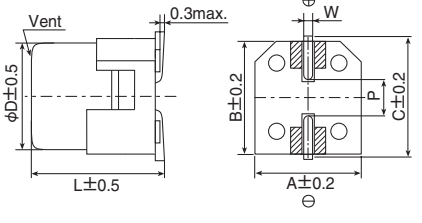
◆DIMENSIONS [mm]

●Terminal Code : A
●Size code : D55 to MN0



Note : L±0.5 for HA0 to MN0

●Terminal Code : G (Vibration resistant structure)
●Size code : LH0 to MN0



▨ : Dummy terminals

Size code	D	L	A	B	C	W	P
D55	4	5.2	4.3	4.3	5.1	0.5 to 0.8	1.0
E55	5	5.2	5.3	5.3	5.9	0.5 to 0.8	1.4
F55	6.3	5.2	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5
KE0	12.5	13.5	13.0	13.0	13.7	1.0 to 1.3	4.2
KG5	12.5	16.0	13.0	13.0	13.7	1.0 to 1.3	4.2
LH0	16	16.5	17.0	17.0	18.0	1.0 to 1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0 to 1.3	6.5
MH0	18	16.5	19.0	19.0	20.0	1.0 to 1.3	6.5
MN0	18	21.5	19.0	19.0	20.0	1.0 to 1.3	6.5

◆MARKING

D55 to JA0
EX) 16V47μF

KE0 to HN0
EX) 25V1,000μF

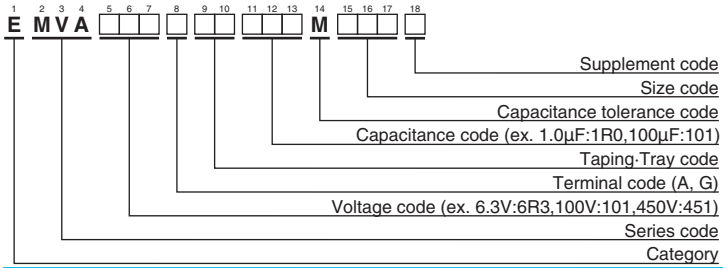
◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Size code	Frequency(Hz) / Capacitance(μF)	120	1k	10k	100k
D55 to JA0	1.0	1.00	1.50	1.75	1.80
	2.2 to 10	1.00	1.30	1.40	1.50
	22 to 1,500	1.00	1.05	1.08	1.08
KE0 to MN0	4.7	1.00	1.75	2.30	2.50
	10 to 68	1.00	1.50	1.75	1.80
	100 to 1,000	1.00	1.30	1.40	1.50
	2,200 to 10,000	1.00	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.

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (surface mount type)"

Alchip™-MVA Series

◆STANDARD RATINGS

is not solvent resistant.

WV (Vdc)	Cap (μF)	Size code	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
4	33	D55	0.42	25	EMVA4R0ADA330MD55G
	47	D55	0.42	30	EMVA4R0ADA470MD55G
	100	E55	0.42	50	EMVA4R0ADA101ME55G
	220	F55	0.42	80	EMVA4R0ADA221MF55G
	330	F80	0.42	135	EMVA4R0ADA331MF80G
	470	F80	0.42	150	EMVA4R0ADA471MF80G
	1,000	HA0	0.42	320	EMVA4R0ADA102MHA0G
6.3	33	D55	0.35	30	EMVA6R3ADA330MD55G
	47	D55	0.35	33	EMVA6R3ADA470MD55G
	100	E55	0.35	55	EMVA6R3ADA101ME55G
	220	F55	0.35	88	EMVA6R3ADA221MF55G
	330	F80	0.35	135	EMVA6R3ADA331MF80G
	470	HA0	0.35	280	EMVA6R3ADA471MHA0G
	680	HA0	0.35	290	EMVA6R3ADA681MHA0G
	820	HA0	0.35	320	EMVA6R3ADA821MHA0G
	1,000	JA0	0.35	430	EMVA6R3ADA102MJA0G
	1,500	JA0	0.35	480	EMVA6R3ADA152MJA0G
	2,200	KE0	0.40	890	EMVA6R3ARA222MKE0S
	3,300	KG5	0.42	1,000	EMVA6R3ARA332MKG5S
	3,300	LH0	0.42	1,200	EMVA6R3□DA332MLH0S
	4,700	LH0	0.44	1,400	EMVA6R3□DA472MLH0S
	6,800	LN0	0.48	1,750	EMVA6R3□DA682MLN0S
	6,800	MH0	0.48	1,700	EMVA6R3□DA682MMH0S
	10,000	MN0	0.56	2,000	EMVA6R3□DA103MMN0S
10	22	D55	0.30	26	EMVA100ADA220MD55G
	33	D55	0.30	30	EMVA100ADA330MD55G
	47	E55	0.30	44	EMVA100ADA470ME55G
	100	F55	0.30	70	EMVA100ADA101MF55G
	150	F55	0.30	79	EMVA100ADA151MF55G
	220	F80	0.30	130	EMVA100ADA221MF80G
	330	HA0	0.30	270	EMVA100ADA331MHA0G
	470	HA0	0.30	280	EMVA100ADA471MHA0G
	1,000	JA0	0.30	430	EMVA100ADA102MJA0G
	2,200	KE0	0.36	960	EMVA100ARA222MKE0S
	3,300	LH0	0.38	1,300	EMVA100□DA332MLH0S
	4,700	LN0	0.40	1,550	EMVA100□DA472MLN0S
	4,700	MH0	0.40	1,600	EMVA100□DA472MMH0S
	6,800	MN0	0.44	1,850	EMVA100□DA682MMN0S
16	22	D55	0.26	26	EMVA160ADA220MD55G
	33	E55	0.26	37	EMVA160ADA330ME55G
	47	E55	0.26	44	EMVA160ADA470ME55G
	100	F55	0.26	70	EMVA160ADA101MF55G
	150	F80	0.26	110	EMVA160ADA151MF80G
	220	F80	0.26	130	EMVA160ADA221MF80G
	330	HA0	0.26	270	EMVA160ADA331MHA0G
	470	HA0	0.26	280	EMVA160ADA471MHA0G
	680	JA0	0.26	380	EMVA160ADA681MJA0G
	1,000	KE0	0.30	710	EMVA160ARA102MKE0S
	2,200	LH0	0.32	1,150	EMVA160□DA222MLH0S
	3,300	LN0	0.34	1,450	EMVA160□DA332MLN0S
	3,300	MH0	0.34	1,450	EMVA160□DA332MMH0S
	4,700	MN0	0.36	1,750	EMVA160□DA472MMN0S
25	10	D55	0.16	24	EMVA250ADA100MD55G
	22	E55	0.16	41	EMVA250ADA220ME55G
	33	E55	0.16	47	EMVA250ADA330ME55G
	47	F55	0.16	60	EMVA250ADA470MF55G
	56	F55	0.16	66	EMVA250ADA560MF55G
	100	F80	0.16	120	EMVA250ADA101MF80G
	150	HA0	0.16	210	EMVA250ADA151MHA0G
	220	HA0	0.16	260	EMVA250ADA221MHA0G
	330	HA0	0.16	300	EMVA250ADA331MHA0G
	470	JA0	0.16	400	EMVA250ADA471MJA0G
	1,000	KE0	0.26	820	EMVA250ARA102MKE0S
	2,200	LN0	0.28	1,450	EMVA250□DA222MLN0S
	2,200	MH0	0.28	1,400	EMVA250□DA222MMH0S
	3,300	MN0	0.30	1,800	EMVA250□DA332MMN0S
35	4.7	D55	0.14	18	EMVA350ADA4R7MD55G
	10	D55	0.14	24	EMVA350ADA100MD55G
	22	E55	0.14	41	EMVA350ADA220ME55G

WV (Vdc)	Cap (μF)	Size code	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
35	33	F55	0.14	54	EMVA350ADA330MF55G
	100	F80	0.14	120	EMVA350ADA101MF80G
	150	HA0	0.14	210	EMVA350ADA151MHA0G
	220	HA0	0.14	260	EMVA350ADA221MHA0G
	330	JA0	0.14	360	EMVA350ADA331MJA0G
	470	KE0	0.22	600	EMVA350ARA471MKE0S
	1,000	LH0	0.22	1,100	EMVA350□DA102MLH0S
	2,200	MN0	0.24	1,700	EMVA350□DA222MMN0S
50	3.3	D55	0.12	15	EMVA500ADA3R3MD55G
	4.7	D55	0.12	18	EMVA500ADA4R7MD55G
	10	E55	0.12	30	EMVA500ADA100ME55G
	22	F55	0.12	47	EMVA500ADA220MF55G
	33	F80	0.12	70	EMVA500ADA330MF80G
	47	F80	0.12	85	EMVA500ADA470MF80G
	100	HA0	0.12	190	EMVA500ADA101MHA0G
	220	JA0	0.12	320	EMVA500ADA221MJA0G
	330	KE0	0.18	600	EMVA500ARA331MKE0S
	470	KG5	0.18	740	EMVA500ARA471MKG5S
	470	LH0	0.18	850	EMVA500□DA471MLH0S
	1,000	LN0	0.18	1,300	EMVA500□DA102MLN0S
	1,000	MN0	0.18	1,400	EMVA500□DA102MMN0S
63	1.0	D55	0.12	8.0	EMVA630ADA1R0MD55G
	2.2	D55	0.12	12	EMVA630ADA2R2MD55G
	3.3	E55	0.12	17	EMVA630ADA3R3ME55G
	4.7	E55	0.12	20	EMVA630ADA4R7ME55G
	10	F55	0.12	32	EMVA630ADA100MF55G
	22	F80	0.12	60	EMVA630ADA220MF80G
	33	HA0	0.12	110	EMVA630ADA330MHA0G
	47	HA0	0.12	130	EMVA630ADA470MHA0G
	56	JA0	0.12	160	EMVA630ADA560MJA0G
	68	JA0	0.12	170	EMVA630ADA680MJA0G
	100	KE0	0.14	380	EMVA630ARA101MKE0S
	220	KE0	0.14	580	EMVA630ARA221MKE0S
	330	KG5	0.14	720	EMVA630ARA331MKG5S
	330	LH0	0.14	820	EMVA630□DA331MLH0S
	470	LH0	0.14	950	EMVA630□DA471MLH0S
	470	MH0	0.14	1,000	EMVA630□DA471MMH0S
100	22	HA0	0.12	90	EMVA101ADA220MHA0G
	33	JA0	0.12	120	EMVA101ADA330MJA0G
	68	KE0	0.10	380	EMVA101ARA680MKE0S
	100	KE0	0.10	440	EMVA101ARA101MKE0S
	220	LN0	0.10	850	EMVA101□DA221MLN0S
	220	MH0	0.10	800	EMVA101□DA221MMH0S
	330	MN0	0.10	1,000	EMVA101□DA331MMN0S
160	47	KG5	0.20	370	EMVA161ARA470MKG5S
	68	LH0	0.20	500	EMVA161□DA680MLH0S
	100	LN0	0.20	590	EMVA161□DA101MLN0S
	100	MH0	0.20	590	EMVA161□DA101MMH0S
200	22	KE0	0.20	240	EMVA201ARA220MKE0S
	33	KG5	0.20	310	EMVA201ARA330MKG5S
	47	LH0	0.20	420	EMVA201□DA470MLH0S
	68	LN0	0.20	510	EMVA201□DA680MLN0S
	68	MH0	0.20	510	EMVA201□DA680MMH0S
	100	MN0	0.20	590	EMVA201□DA101MMN0S
250	10	KE0	0.20	150	EMVA251ARA100MKE0S
	22	KG5	0.20	240	EMVA251ARA220MKG5S
	33	LH0	0.20	340	EMVA251□DA330MLH0S
	47	LN0	0.20	420	EMVA251□DA470MLN0S
	47	MH0	0.20	420	EMVA251□DA470MMH0S
	68	MN0	0.20	490	EMVA251□DA680MMN0S
400	4.7	KE0	0.25	120	EMVA401ARA4R7MKE0S
	10	LH0	0.25	140	EMVA401□DA100MLH0S
	22	LN0	0.25	280	EMVA401□DA220MLN0S
	22	MH0	0.25	280	EMVA401□DA220MMH0S
	33	MN0	0.25	350	EMVA401□DA330MMN0S
450	4.7	KE0	0.25	120	EMVA451ARA4R7MKE0S
	10	LH0	0.25	140	EMVA451□DA100MLH0S
	22	LN0	0.25	280	EMVA451□DA220MLN0S
	33	MN0	0.25	350	EMVA451□DA330MMN0S

□ : Enter the appropriate terminal code.