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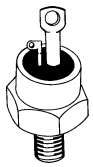
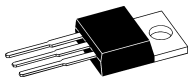
Package style		$I_{T(AV)M}$ A	V_{RRM}/V_{DRM} (V) 800	1200	1400	1600	2200	Type	Page
1 	1	16	●	●				CS 8-...io2	E1 - 2
2 	2	19	●	●				CS 19-...ho1	E1 - 4
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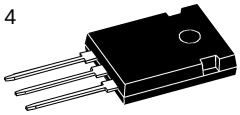
4 	6	21	●					FCC 20-08io *new*	E1 -9
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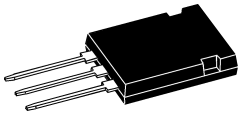
4a ISOPLUS 247™ 	1	32	●	●		●		CS 23	E1 - 15
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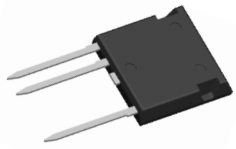
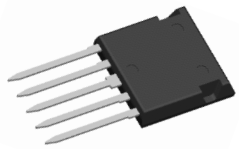
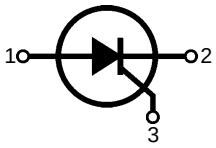
5 ISOPLUS i4-PAC™  6 ISOPLUS i4-PAC™ 	4	48	●	●		●		CS 45-...io1	E1 - 23
	4a					●		CS 45-...io1R *new*	

ISOPLUS... = isolated back surface

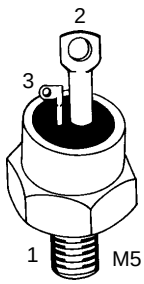
Phase Control Thyristors

V_{RRM} = 800-1200 V
$I_{T(RMS)}$ = 25 A
$I_{T(AV)M}$ = 16 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
900	800	CS 8-08io2
1300	1200	CS 8-12io2



TO-64



1 = Anode, 2 = Cathode, 3 = Gate

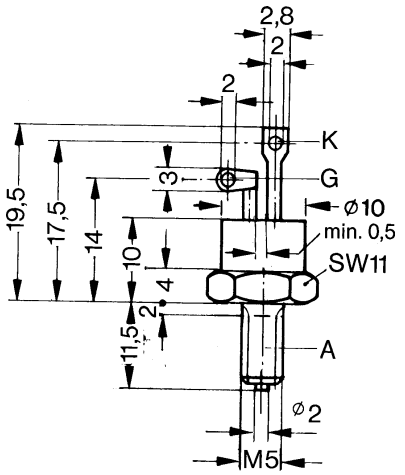
Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		25	A
$I_{T(AV)M}$	T_{case} = 85°C; 180° sine		16	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	250	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	270	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	200	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	220	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	310	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	306	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	200	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	200	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P =200 µs V_D = 2/3 V_{DRM} I_G = 0.2 A di_G/dt = 0.2 A/µs	repetitive, I_T = 48 A	150	A/µs
		non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
$P_{G(AV)}$			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque		2.5	Nm
			22	lb.in.
Weight			6	g

Features
- Thyristor for line frequencies
- International standard package JEDEC TO-64
- Planar glassivated chip
- Long-term stability of blocking currents and voltages

Applications
- Motor control
- Power converter
- AC power controller

Advantages
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	3	mA
V_T	I_T = 33 A; T_{VJ} = 25°C		≤	1.6	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			1.0	V
r_T				18	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	2.5	V
		T_{VJ} = -40°C	≤	3.5	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	30	mA
		T_{VJ} = -40°C	≤	50	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	1	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.09 A; di_G/dt = 0.09 A/µs		≤	100	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	80	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.09 A; di_G/dt = 0.09 A/µs		≤	2	µs
t_q	$T_{VJ} = T_{VJM}$; I_T = 16 A, t_P = 300 µs; di/dt = -20 A/µs V_R = 100 V; dv/dt = 20 V/µs; V_D = 2/3 V_{DRM}		typ.	60	µs
R_{thJC}	DC current			1.5	K/W
R_{thJH}	DC current			2.5	K/W
d_S	Creepage distance on surface			1.55	mm
d_A	Strike distance through air			1.55	mm
a	Max. acceleration, 50 Hz			50	m/s^2

Accessories:
Nut M5 DIN 439/SW8
Lock washer A5 DIN 128

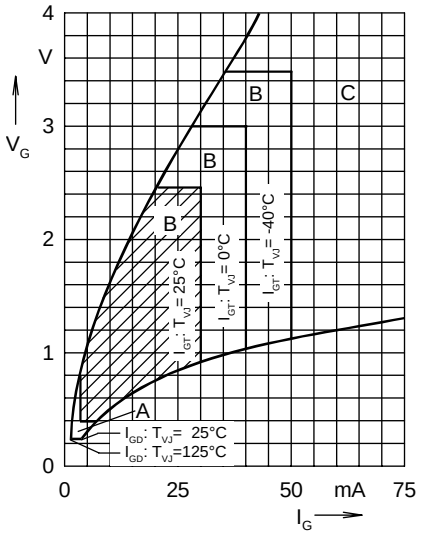


Fig. 1 Gate voltage and gate current
Triggering:
A = no; B = possible; C = safe

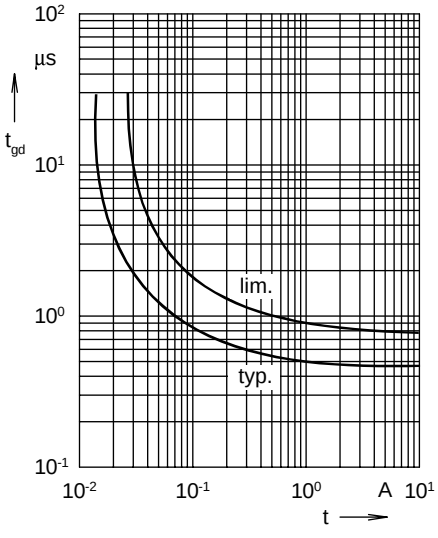


Fig. 2 Gate controlled delay time t_{gd}

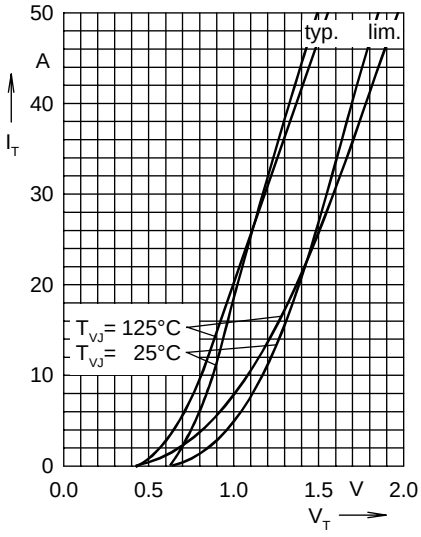


Fig. 3 On-state characteristics

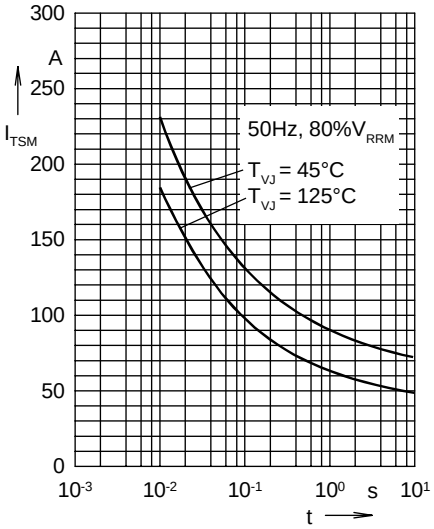


Fig. 4 Surge overload current
I_{TSM}: crest value, t: duration

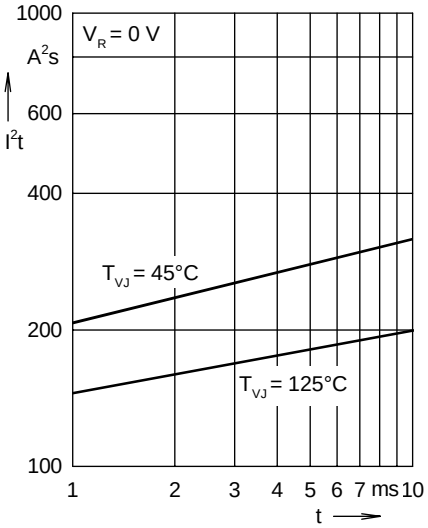


Fig. 5 I^2t versus time (1-10 ms)

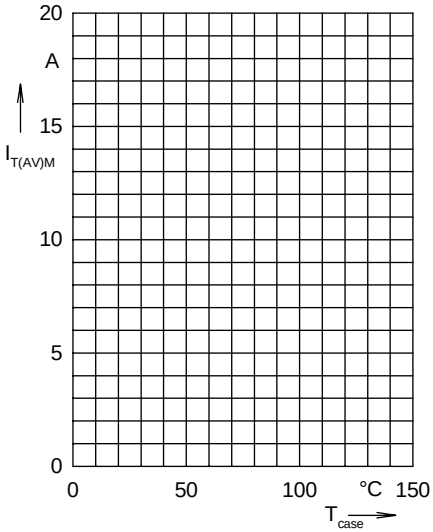


Fig. 6 Maximum forward current at case temperature 180° sine

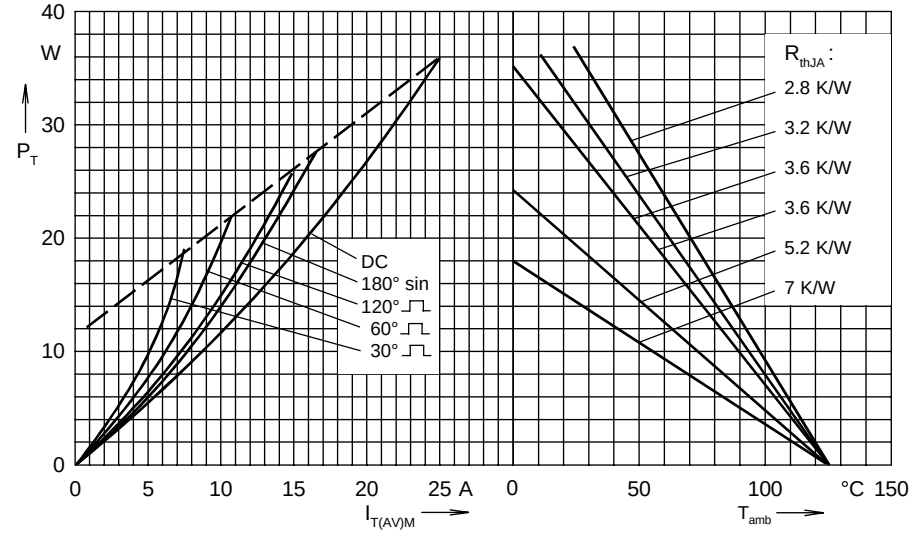


Fig. 7 Power dissipation versus on-state current and ambient temperature

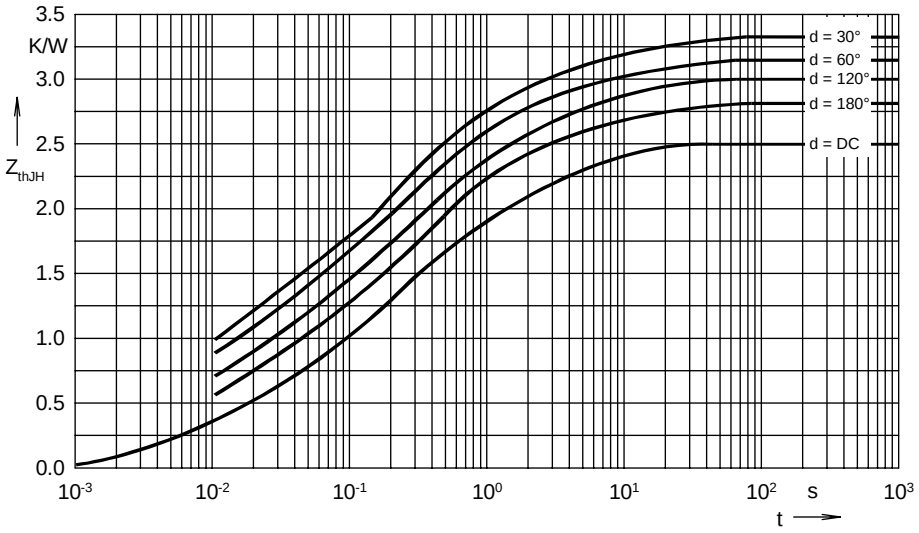


Fig. 8 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d:

d	R_{thJH} (K/W)
DC	2.5
180°	2.79
120°	2.95
60°	3.17
30°	3.32

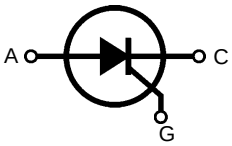
Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.252	0.005
2	0.333	0.0225
3	0.5	0.145
4	0.833	0.43
5	0.416	2.75
6	0.166	23

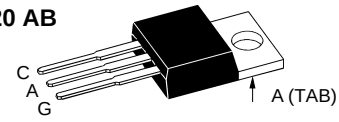
Phase Control Thyristors

V_{RRM} = 800-1200 V
$I_{T(RMS)}$ = 29 A
$I_{T(AV)M}$ = 19 A

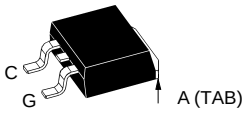
V_{RSM} V_{DSM}	V_{RRM} V_{DRM}	Type	Type
V	V	TO 220	TO 263
800	800	CS 19-08ho1	CS 19-08ho1S
1200	1200	CS 19-12ho1	CS 19-12ho1S



TO-220 AB



TO-263 AA



A = Anode, C = Cathode, G = Gate

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		29	A
$I_{T(AV)M}$	T_C = 85°C; 180° sine		19	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	160	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	180	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	140	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	160	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	128	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	134	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	100	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	105	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$	repetitive, I_T = 20 A	100	A/µs
	f = 50 Hz, t_P = 200 µs			
	V_D = 2/3 V_{DRM}			
	I_G = 0.15 A	non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
	di_G/dt = 0.15 A/µs			
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$;	V_{DR} = 2/3 V_{DRM}	500	V/µs
	R_{GK} = ∞; method 1 (linear voltage rise)			
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	5	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	2,5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque with screw M3; TO220		0.45/4	Nm/lb.in.
	Mounting torque with screw M3.5; TO220		0.55/5	Nm/in.
Weight			2	g

Features

- SCR for frequency up to 400Hz
- International standard package
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage
- Epoxy meets UL 94V-0

Applications

- Motor control
- Power converter
- AC power controller
- Light and temperature control
- SCR for inrush current limiting in power supplies or AC drive

Advantages

- Space and weight savings
- Simple mounting

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

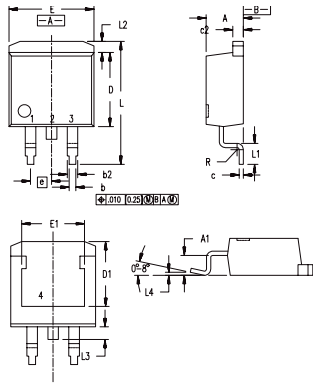
030

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 20 A; T_{VJ} = 25°C		≤	1.6	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.85	V
r_T				27	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	2.5	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	25	mA
		T_{VJ} = -40°C	≤	50	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	3	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.1 A; di_G/dt = 0.1 A/µs		≤	75	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	50	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.1 A; di_G/dt = 0.1 A/µs		≤	2	µs

R_{thJC}	DC current	1.0	K/W
R_{thCK}	DC current	typ 0.25	K/W
a	Max. acceleration, 50 Hz	50	m/s^2

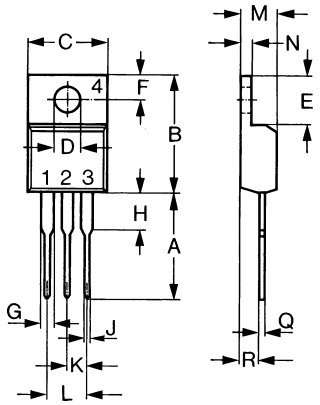
Dimensions in mm (1 mm = 0.0394")

TO 263 AA



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
E	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029

TO 220 AB



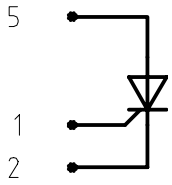
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110

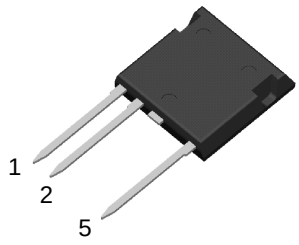
High Voltage Phase Control Thyristor

in High Voltage ISOPLUS i4-PAC™

$V_{DRM} = V_{RRM}$ = 2200 V
$I_{T(AV)}$ = 18 A
I_{TSM} = 200 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
2200	2200	CS 20-22moF1





Thyristors

Symbol	Conditions		Maximum Ratings	
V_{DRM}, V_{RRM}			2200	V
$I_{T(AV)}$	sine 180°; T_C = 90°C		18	A
$I_{T(AV)}$	square; d = 1/3; T_C = 90°C		16	A
I_{TSM}	sine 180°; t = 10 ms; V_R = 0 V; T_{VJ} = 25°C		200	A
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P = 200 µs V_D = 2/3 V_{DRM} I_G = 0.45 A di_G/dt = 0.45 A/µs	repetitive, I_T = 40 A	100	A/µs
		non repetitive, I_T = 20 A	250	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	2500	V/µs

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
V_T	I_T = 20 A; T_{VJ} = 25°C		1.3	1.5	V
	T_{VJ} = 125°C		1.3		V
V_{GT}	V_D = 6 V			2.3	V
I_{GT}				250	mA
V_{GD}	$T_{VJ} = T_{VJM}$; V_D = 2/3 V_{DRM}			0.2	V
I_{GD}				5	mA
I_L	t_P = 10 µs; V_D = 6 V I_G = 0.45 A; di_G/dt = 0.45 A/µs			500	mA
I_H	V_D = 6 V; R_{GK} = ∞			150	mA
t_{gd}	V_D = ½ V_{DRM} I_G = 0.45 A; di_G/dt = 0.45 A/µs			2	µs
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$; T_{VJ} = 25°C			50	µA
	T_{VJ} = 125°C		2		mA
R_{thJC}	DC current			0.92	K/W

Features

- high voltage thyristor
  - for line frequency
  - chip technology for long term stability
- ISOPLUS i4-PAC™ high voltage package
  - isolated back surface
  - enlarged creepage towards heatsink
  - enlarged creepage between high voltage pins
  - application friendly pinout
  - high reliability
  - industry standard outline

Applications

- controlled rectifiers
  - power supplies
  - drives
- AC switches
- capacitor discharge control
  - flash tubes
  - x ray and laser generators

IXYS reserves the right to change limits, test conditions and dimensions.

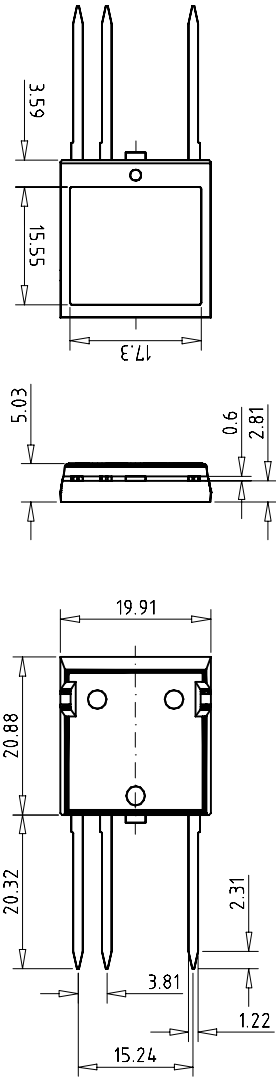
022

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1$ mA; 50/60 Hz	2500	V~
F_C	mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values min.	typ.	max.	
d_S,d_A	A pin - K pin	7			mm
d_S,d_A	pin - backside metal	5.5			mm
R_{thCH}	with heatsink compound		0.15		K/W
Weight			9		g

Dimensions in mm (1 mm = 0.0394")

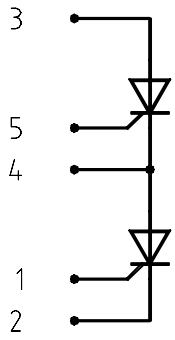


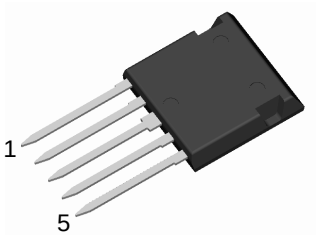
Phase Control Thyristors

-Phaseleg Topology-
in ISOPLUS i4-PAC™

$V_{DRM} = V_{RRM}$ = 800 V
$I_{T(AV)}$ = 21 A
I_{TSM} = 300 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
900	800	FCC 21-08io





Thyristors

Symbol	Conditions		Maximum Ratings	
V_{DRM}, V_{RRM}			800	V
$I_{T(AV)}$	sine 180°; T_C = 90°C		21	A
$I_{T(AV)}$	square; d = 1/3; T_C = 90°C		20	A
I_{TSM}	sine 180°; t = 10 ms; V_R = 0 V; T_{VJ} = 25°C		300	A
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P = 200 µs V_D = 2/3 V_{DRM} I_G = 0.3 A di_G/dt = 0.3 A/µs	repetitive, I_T = 40 A	150	A/µs
		non repetitive, I_T = 30 A	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
V_T	I_T = 30 A; T_{VJ} = 25°C			1.3	V
	T_{VJ} =125°C		1.3		V
V_{GT}	V_D = 6 V			1.4	V
I_{GT}				55	mA
V_{GD}	$T_{VJ} = T_{VJM}$; V_D = 2/3 V_{DRM}			0.2	V
I_{GD}				5	mA
I_L	t_P = 10 µs; V_D = 6 V I_G = 0.3 A; di_G/dt = 0.3 A/µs			150	mA
I_H	V_D = 6 V; R_{GK} = ∞			100	mA
t_{gd}	V_D = ½ $V_{DRM;}$ V_D = 6 V I_G = 0.3 A; di_G/dt = 0.3 A/µs			2	µs
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$; T_{VJ} = 25°C			50	µA
	T_{VJ} = 125°C		0.5		mA
R_{thJC}	DC current			1.0	K/W

Features

- Thyristor
  - for line frequency
  - chip technology for long term stability
- ISOPLUS i4-PAC™ package
  - isolated back surface
  - enlarged creepage towards heatsink
  - application friendly pinout
  - high reliability
  - industry standard outline

Applications

- controlled rectifiers
  - power supplies
  - drives
- AC switches

IXYS reserves the right to change limits, test conditions and dimensions.

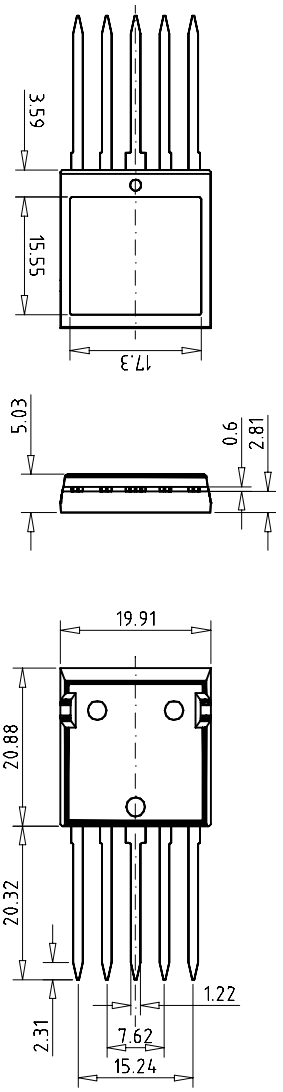
022

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1$ mA; 50/60 Hz	2500	V~
F_C	mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values min.	typ.	max.	
d_S,d_A	pin - pin	1.7			mm
d_S,d_A	pin - backside metal	5.5			mm
R_{thCH}	with heatsink compound		0.15		K/W
Weight			9		g

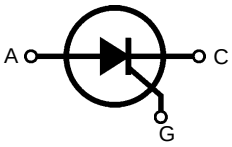
Dimensions in mm (1 mm = 0.0394")



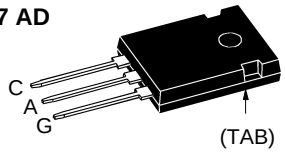
Phase Control Thyristor

V_{RRM} = 1200-1600 V
$I_{T(RMS)}$ = 30 A
$I_{T(AV)M}$ = 19 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1200	1200	CS 20-12io1
1400	1400	CS 20-14io1
1600	1600	CS 20-16io1



TO-247 AD



C = Cathode, A = Anode, G = Gate
TAB = Anode

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		30	A
$I_{T(AV)M}$	T_{case} = 85°C; 180° sine		19	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	200	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	215	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	180	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	195	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	200	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	195	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	162	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	158	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P = 200 µs V_D = 2/3 V_{DRM} I_G = 0.3 A di_G/dt = 0.3 A/µs	repetitive, I_T = 40 A	150	A/µs
		non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque M3		0.8...1.2	Nm
Weight			6	g

Features

- Thyristor for line frequency
- International standard package JEDEC TO-247
- Planar passivated chip
- Long-term stability of blocking currents and voltages
- Epoxy meets UL 94V-0

Applications

- Motor control
- Power converter
- AC power controller
- Switch-mode and resonant mode power supplies
- Light and temperature control

Advantages

- Easy to mount with 1 screw (isolated mounting screw hole)
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

030

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	10	mA
V_T	I_T = 25 A; T_{VJ} = 25°C		≤	2.1	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			1.1	V
r_T				40	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.0	V
		T_{VJ} = -40°C	≤	1.2	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	65	mA
		T_{VJ} = -40°C	≤	80	mA
		T_{VJ} = 125°C	≤	50	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	5	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	150	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	100	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	2	µs
R_{thJC}	DC current			0.62	K/W
R_{thJH}	DC current			0.82	K/W
a	Max. acceleration, 50 Hz			50	m/s^2

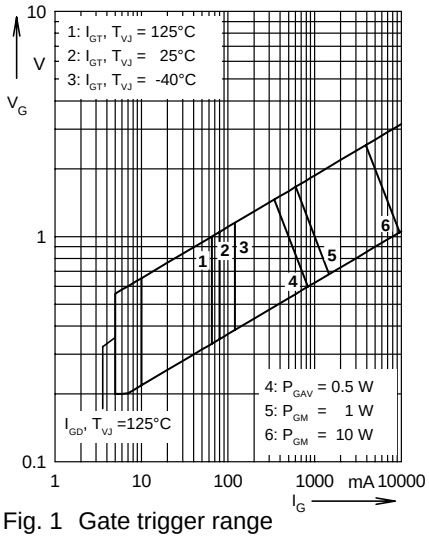


Fig. 1 Gate trigger range

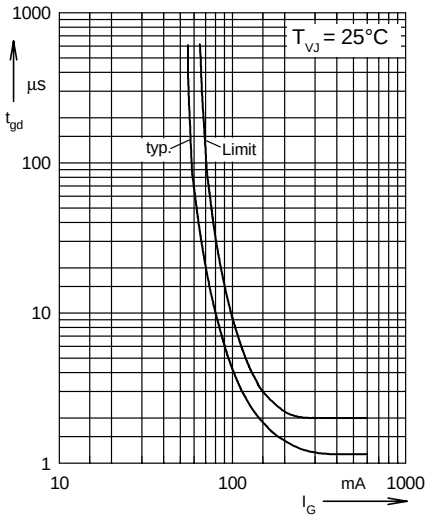
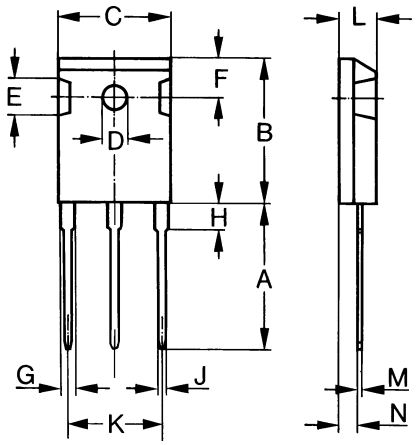


Fig. 2 Gate controlled delay time t_{gd}

TO-247 AD and ISOPLUS 247™



Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D*	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

* ISOPLUS 247™ without hole

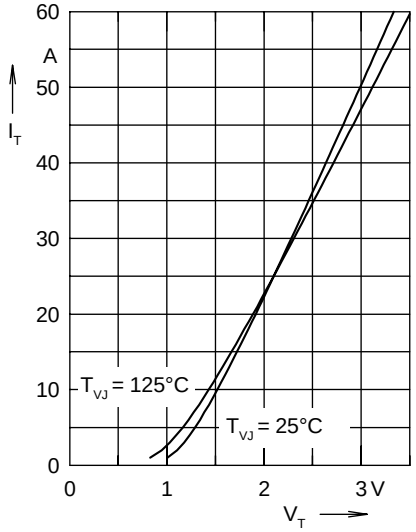


Fig. 3 Forward characteristics

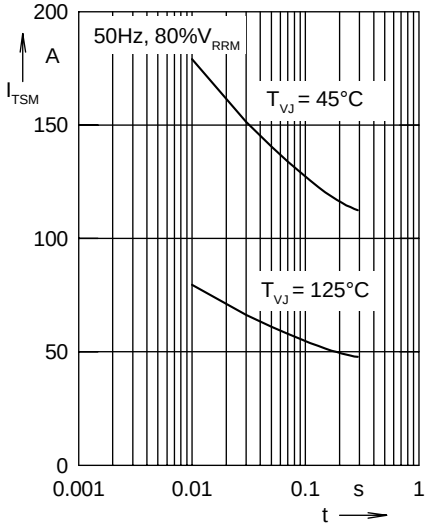


Fig. 4 Surge overload current
I_{TSM}: crest value, t: duration

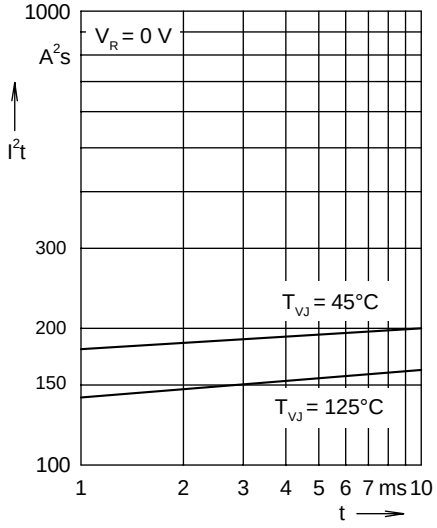


Fig. 5 I^2t versus time (1-10 ms)

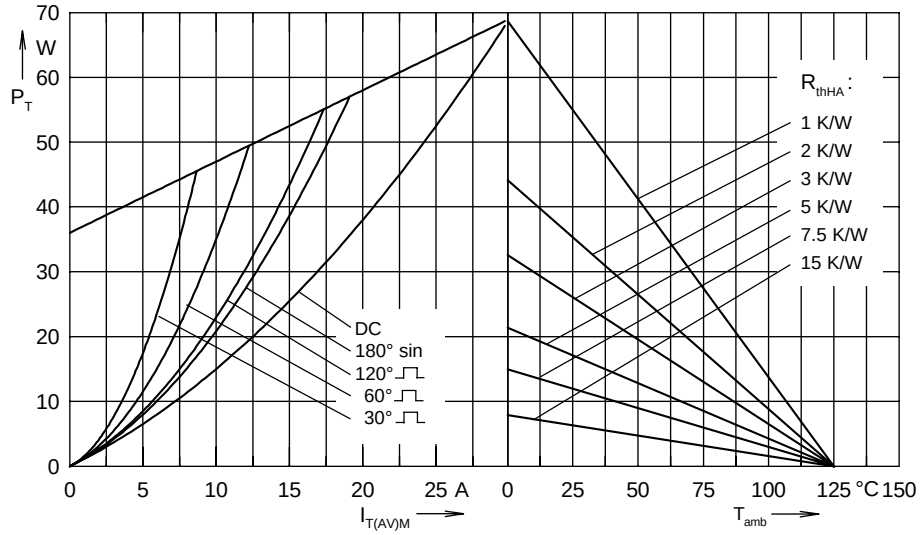


Fig. 6 Power dissipation versus forward current and ambient temperature

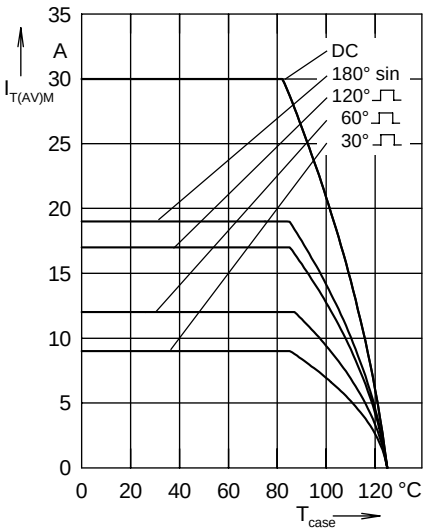


Fig. 7 Max. forward current at case temperature

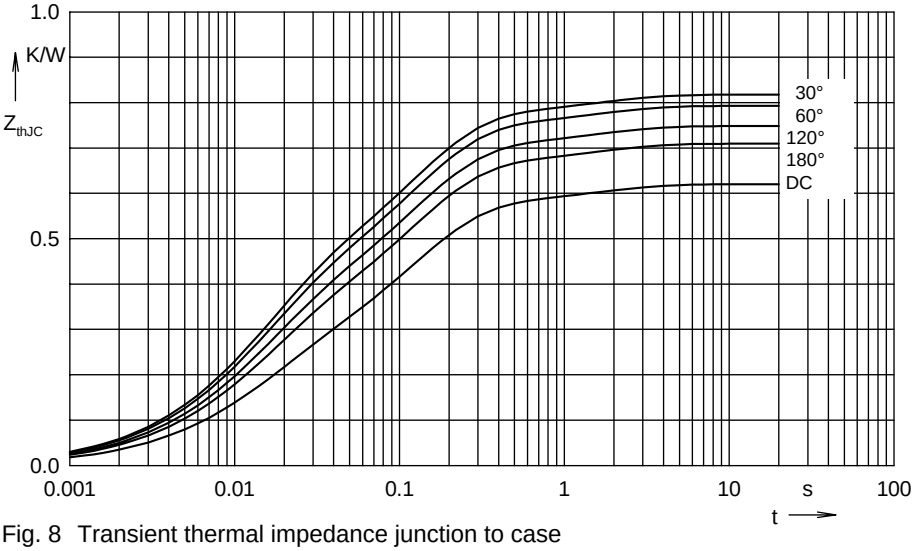


Fig. 8 Transient thermal impedance junction to case

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.62
180°	0.71
120°	0.748
60°	0.793
30°	0.817

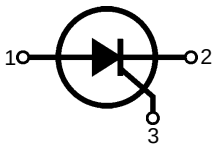
Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.206	0.013
2	0.362	0.118
3	0.052	1.488

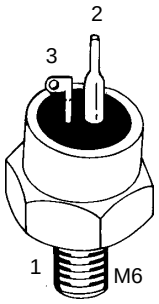
Phase Control Thyristors

V_{RRM} = 800-1600 V
$I_{T(RMS)}$ = 50 A
$I_{T(AV)M}$ = 32 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
900	800	CS 23-08io2
1300	1200	CS 23-12io2
1700	1600	CS 23-16io2



TO-208AA
(TO-48)



1 = Anode, 2 = Cathode, 3 = Gate

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		50	A
$I_{T(AV)M}$	T_{case} = 85°C; 180° sine		25	A
	T_{case} = 69°C; 180° sine		32	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	450	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	480	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	400	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	430	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	1010	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	970	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	800	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	770	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f = 50 Hz, t_P = 200 µs; V_D = 2/3 V_{DRM}; I_G = 0.3 A; di_G/dt = 0.3 A/µs	repetitive, I_T = 75 A	150	A/µs
		non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
$P_{G(AV)}$			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque		2.7-3.3	Nm
			24-29	lb.in.
Weight			12	g

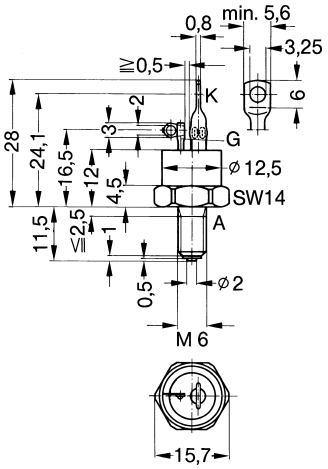
Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Features
- Thyristor for line frequencies
- International standard package JEDEC TO-208AA
- Planar glassivated chip
- Long-term stability of blocking currents and voltages

Applications
- Motor control
- Power converter
- AC power controller

Advantages
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Dimensions in mm (1 mm = 0.0394")



740

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	3	mA
V_T	I_T = 80 A; T_{VJ} = 25°C		≤	1.8	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			1.0	V
r_T				10	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	2.5	V
		T_{VJ} = -40°C	≤	3.5	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	50	mA
		T_{VJ} = -40°C	≤	80	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	1	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.15 A; di_G/dt = 0.15 A/µs		≤	200	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	100	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.15 A; di_G/dt = 0.15 A/µs		≤	2	µs
t_q	$T_{VJ} = T_{VJM}$; I_T = 25 A, t_P = 300 µs; di/dt = -20 A/µs V_R = 100 V; dv/dt = 20 V/µs; V_D = 2/3 V_{DRM}		typ.	60	µs
R_{thJC}	DC current			1.0	K/W
R_{thJH}	DC current			1.61	K/W
d_S	Creepage distance on surface			1.5	mm
d_A	Strike distance through air			1.5	mm
a	Max. acceleration, 50 Hz			50	m/s^2

Accessories:
Nut M6 DIN 439/SW14
Lock washer A6 DIN 128

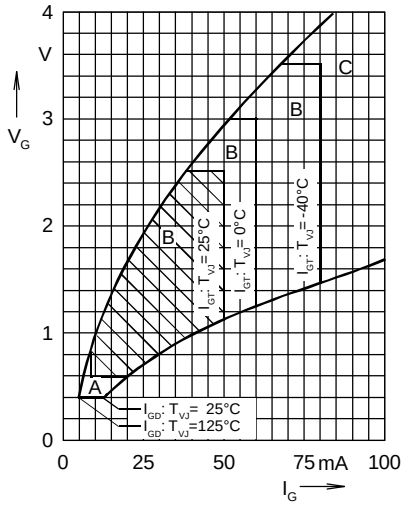


Fig. 1 Gate voltage and gate current
Triggering:
A = no; B = possible; C = safe

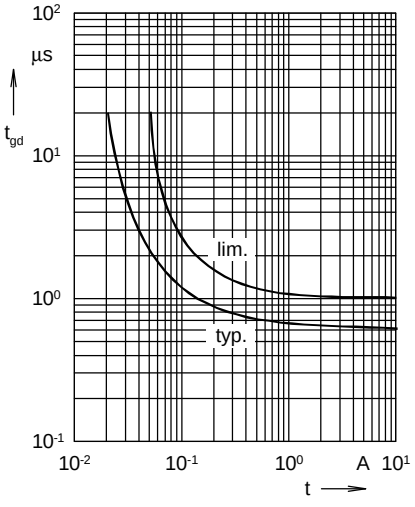


Fig. 2 Gate controlled delay time t_{gd}

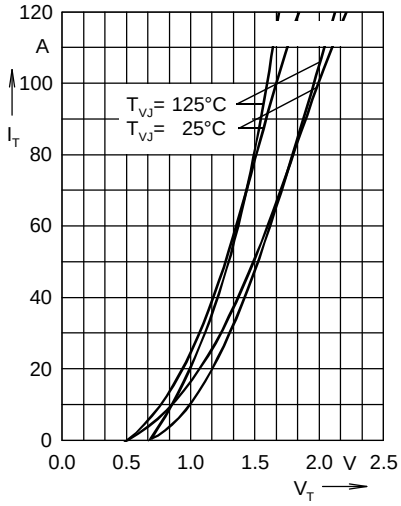


Fig. 3 On-state characteristics

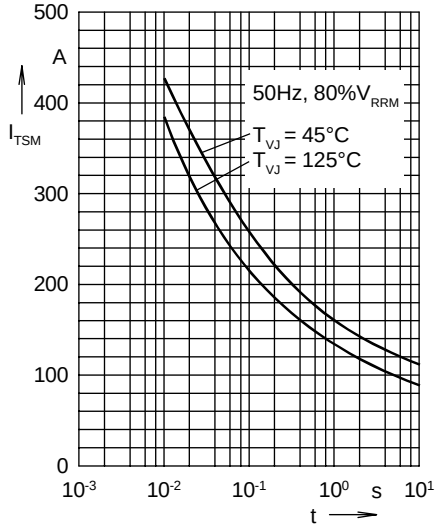


Fig. 4 Surge overload current
I_{TSM}: crest value, t: duration

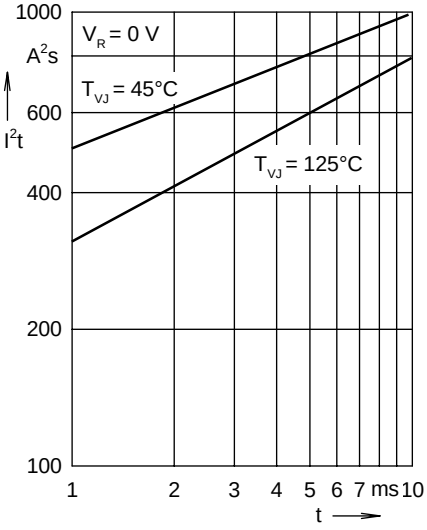


Fig. 5 I^2t versus time (1-10 ms)

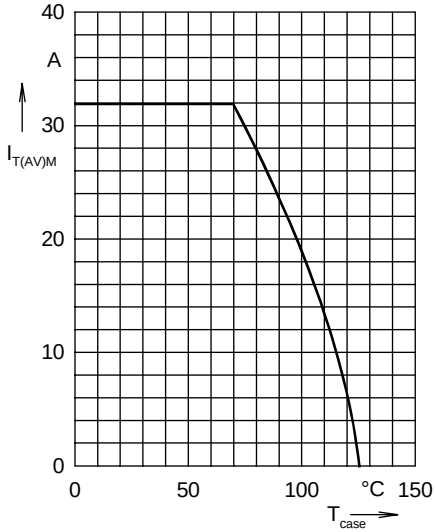


Fig. 6 Maximum forward current at case temperature 180° sine

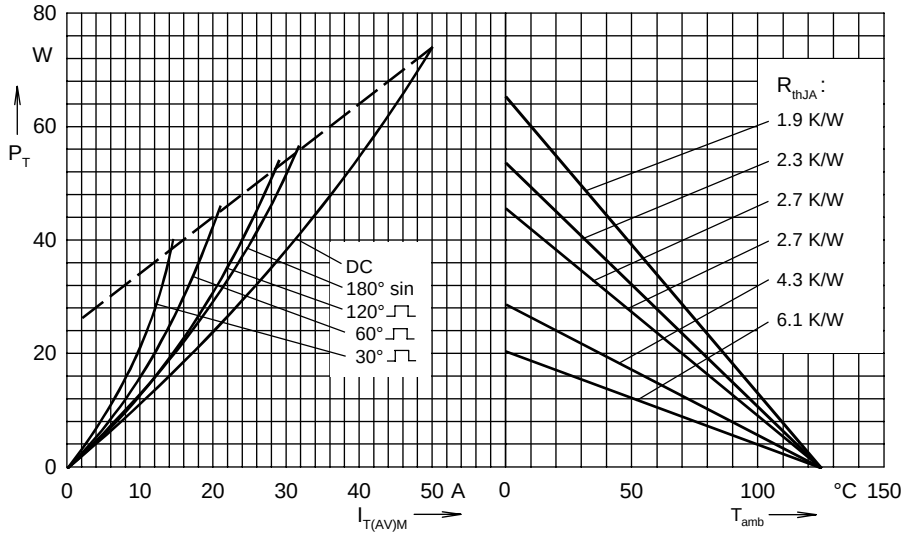


Fig. 7 Power dissipation versus on-state current and ambient temperature

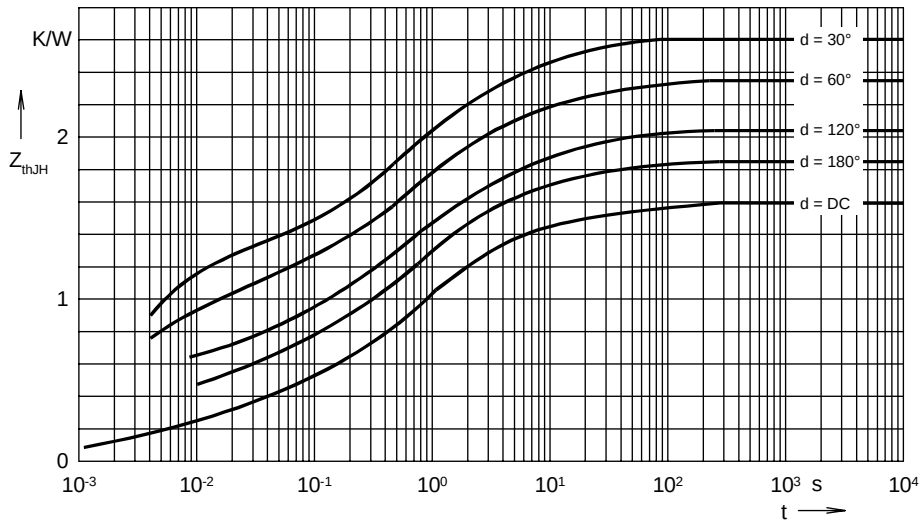


Fig. 8 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d:

d	R_{thJH} (K/W)
DC	1.61
180°	1.85
120°	2.03
60°	2.35
30°	2.60

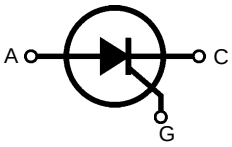
Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.224	0.003
2	0.132	0.028
3	0.321	0.216
4	0.522	1.1
5	0.249	4.2
6	0.162	43.2

Phase Control Thyristor

V_{RRM} = 1200-1600 V
$I_{T(RMS)}$ = 49 A
$I_{T(AV)M}$ = 31 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1200	1200	CS 30-12io1
1400	1400	CS 30-14io1
1600	1600	CS 30-16io1



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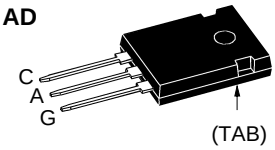


C = Cathode, A = Anode, G = Gate
TAB = Anode

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		49	A
$I_{T(AV)M}$	T_{case} = 85°C; 180° sine		31	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	300	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	320	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	270	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	290	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	450	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	440	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	365	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	355	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P = 200 µs V_D = 2/3 V_{DRM} I_G = 0.3 A di_G/dt = 0.3 A/µs	repetitive, I_T = 40 A	150	A/µs
		non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque M3		0.8...1.2	Nm
Weight			6	g

Features

- Thyristor for line frequency
- International standard package JEDEC TO-247
- Planar passivated chip
- Long-term stability of blocking currents and voltages
- Epoxy meets UL 94V-0

Applications

- Motor control
- Power converter
- AC power controller
- Switch-mode and resonant mode power supplies
- Light and temperature control

Advantages

- Easy to mount with 1 screw (isolated mounting screw hole)
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

030

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 45 A; T_{VJ} = 25°C		≤	1.6	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.9	V
r_T				15	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.0	V
		T_{VJ} = -40°C	≤	1.2	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	65	mA
		T_{VJ} = -40°C	≤	80	mA
		T_{VJ} = 125°C	≤	50	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	5	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	150	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	100	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	2	µs
R_{thJC}	DC current			0.62	K/W
R_{thJH}	DC current			0.82	K/W
a	Max. acceleration, 50 Hz			50	m/s^2

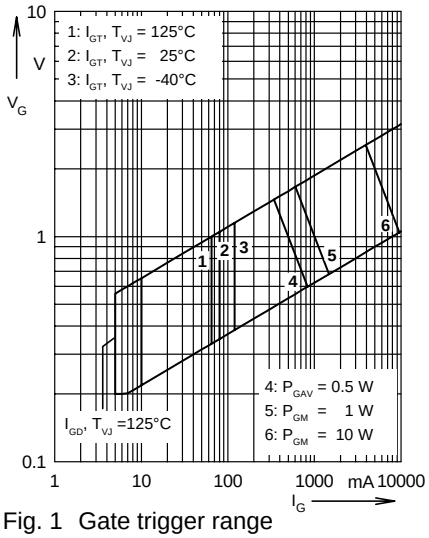


Fig. 1 Gate trigger range

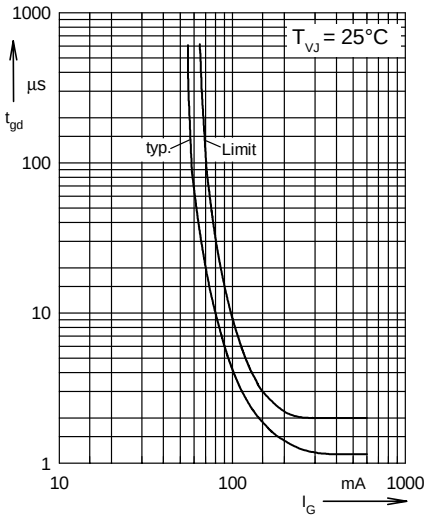
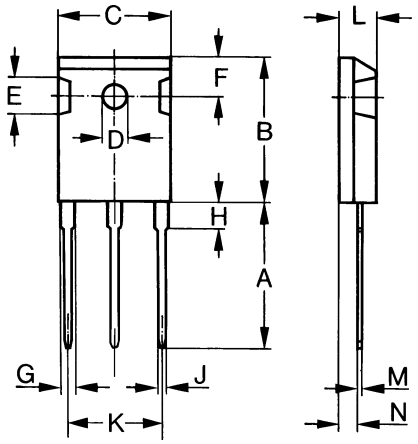


Fig. 2 Gate controlled delay time t_{gd}

TO-247 AD and ISOPLUS 247™



Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D*	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

* ISOPLUS 247™ without hole

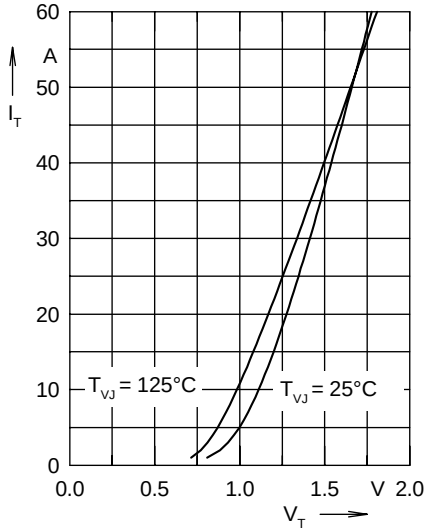


Fig. 3 Forward characteristics

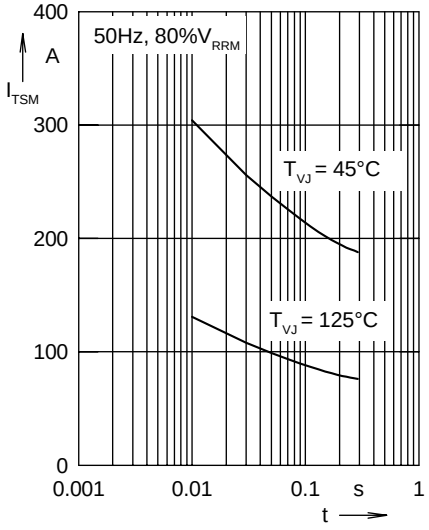


Fig. 4 Surge overload current
I_{TSM}: crest value, t: duration

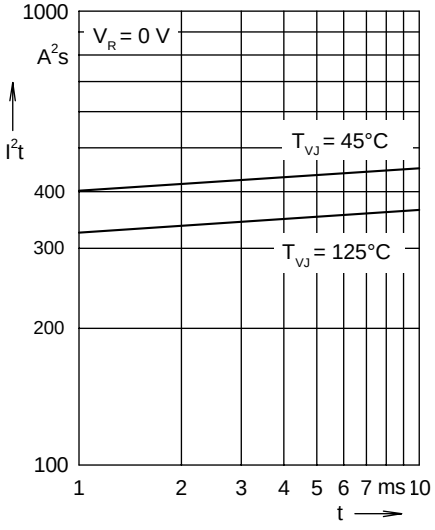


Fig. 5 I^2t versus time (1-10 ms)

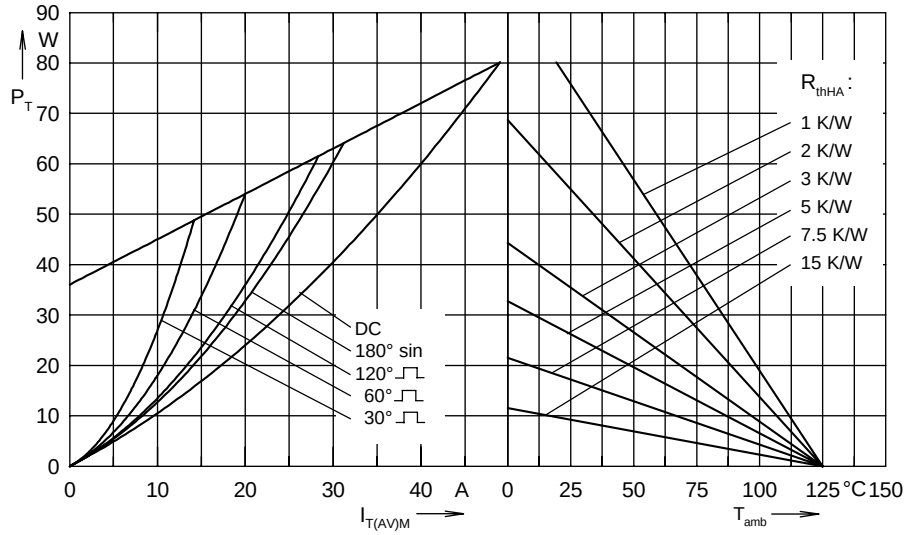


Fig. 6 Power dissipation versus forward current and ambient temperature

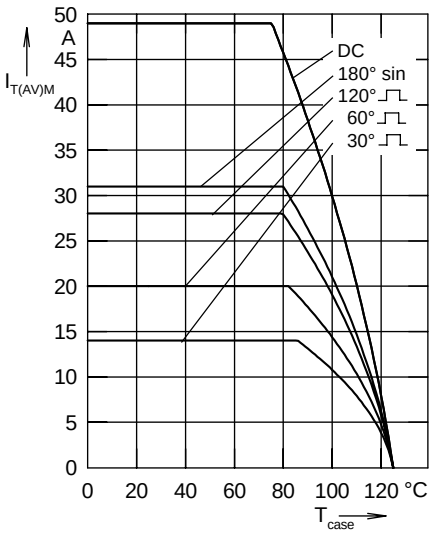


Fig. 7 Max. forward current at case temperature

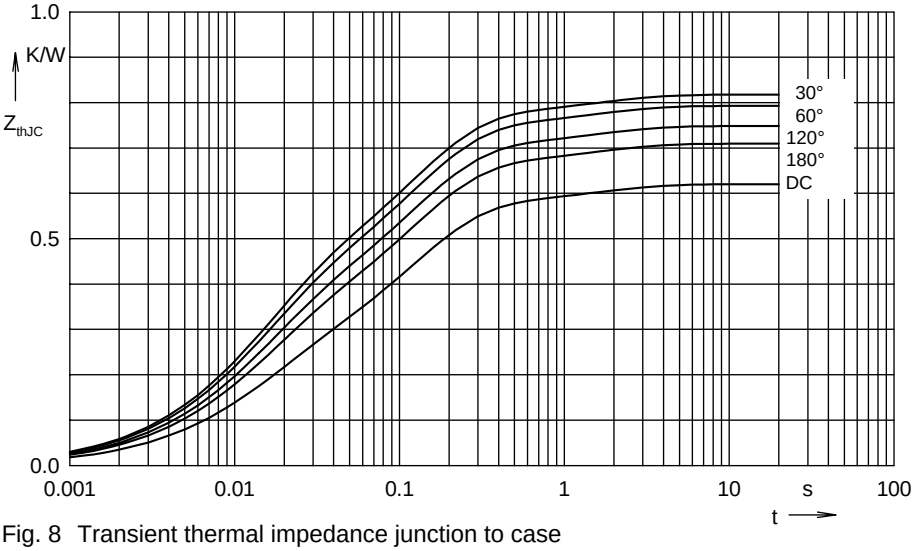


Fig. 8 Transient thermal impedance junction to case

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.62
180°	0.71
120°	0.748
60°	0.793
30°	0.817

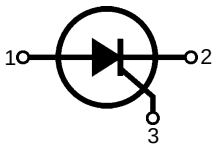
Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.206	0.013
2	0.362	0.118
3	0.052	1.488

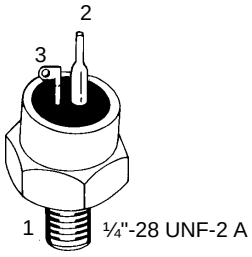
Phase Control Thyristors

V_{RRM} = 800-1400 V
$I_{T(RMS)}$ = 120 A
$I_{T(AV)M}$ = 69 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
900	800	CS 35-08io4
1300	1200	CS 35-12io4
1500	1400	CS 35-14io4



TO-208AC
(TO-65)



1 = Anode, 2 = Cathode, 3 = Gate

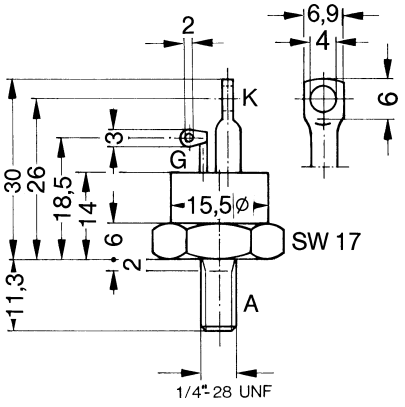
Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		120	A
$I_{T(AV)M}$	T_{case} = 85°C; 180° sine		63	A
	T_{case} = 80°C; 180° sine		69	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	1200	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1340	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	1100	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1250	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	7200	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	7550	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	6050	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	6500	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f = 50 Hz, t_P = 200 µs; V_D = 2/3 V_{DRM}; I_G = 0.5 A; di_G/dt = 0.5 A/µs	repetitive, I_T = 150 A	150	A/µs
		non repetitive, $I_T = I_{T(AV)M}$	400	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 500 µs	5	W
$P_{G(AV)}$			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
M_d	Mounting torque		2.5	Nm
			22	lb.in.
Weight			20	g

Features
- Thyristor for line frequencies
- International standard package JEDEC TO-208AC
- Planar glassivated chip
- Long-term stability of blocking currents and voltages

Applications
- Motor control
- Power converter
- AC power controller

Advantages
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	10	mA
V_T	I_T = 150 A; T_{VJ} = 25°C		≤	1.5	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.85	V
r_T				3.5	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	1.9	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	200	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	1	mA
I_L	T_{VJ} = 25°C; t_P = 30 µs I_G = 0.1 A; di_G/dt = 0.1 A/µs		≤	100	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	80	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.1 A; di_G/dt = 0.1 A/µs		≤	2	µs
t_q	$T_{VJ} = T_{VJM}$; I_T = 50 A, t_P = 200 µs; di/dt = -10 A/µs V_R = 100 V; dv/dt = 10 V/µs; V_D = 2/3 V_{DRM}		typ.	100	µs
R_{thJC}	DC current			0.4	K/W
R_{thJH}	DC current			0.6	K/W
d_S	Creepage distance on surface			1.7	mm
d_A	Strike distance through air			1.7	mm
a	Max. acceleration, 50 Hz			50	m/s^2

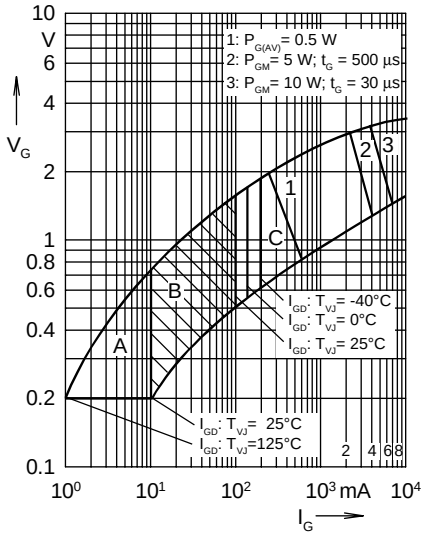


Fig. 1 Gate trigger range
Triggering:
A = no; B = possible, C = safe

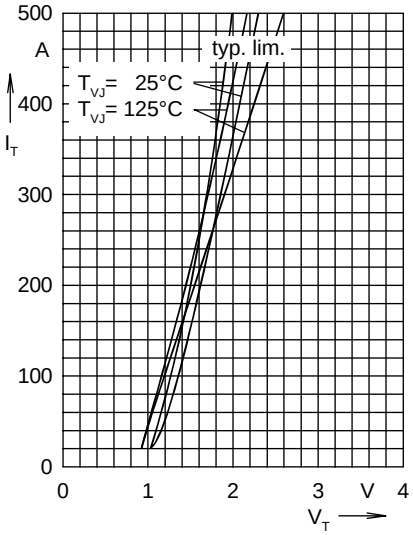


Fig. 2 On-state characteristics

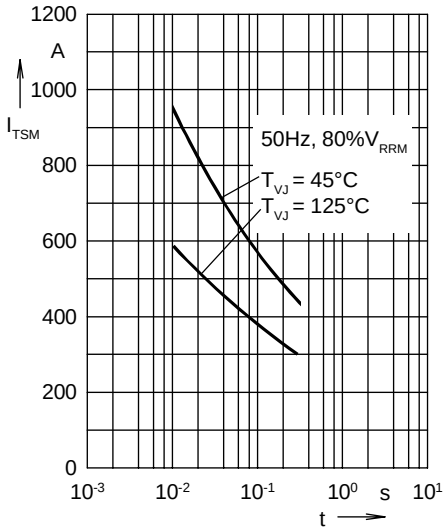


Fig. 3 Surge overload current
I_{TSM}: crest value, t: duration

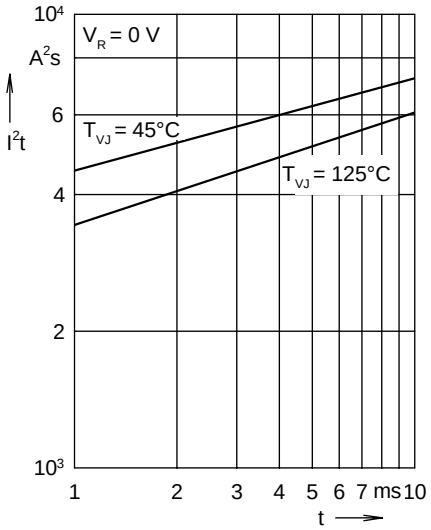


Fig. 4 I^2t versus time (1-10 ms)

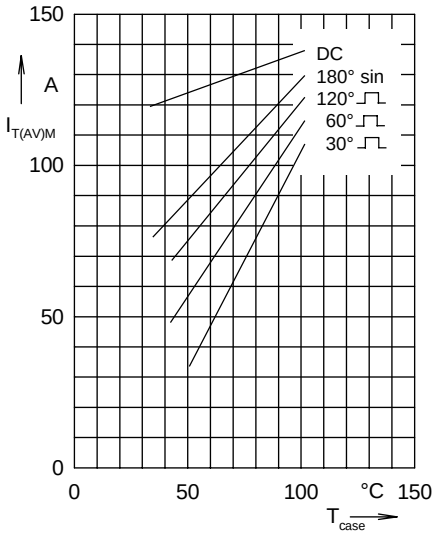


Fig. 5 Maximum forward current at case temperature

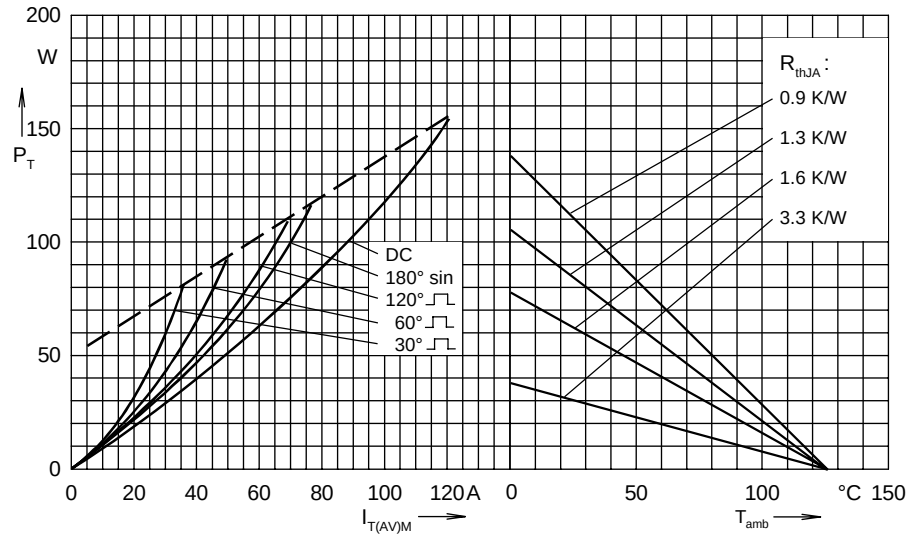


Fig. 6 Power dissipation versus on-state current and ambient temperature

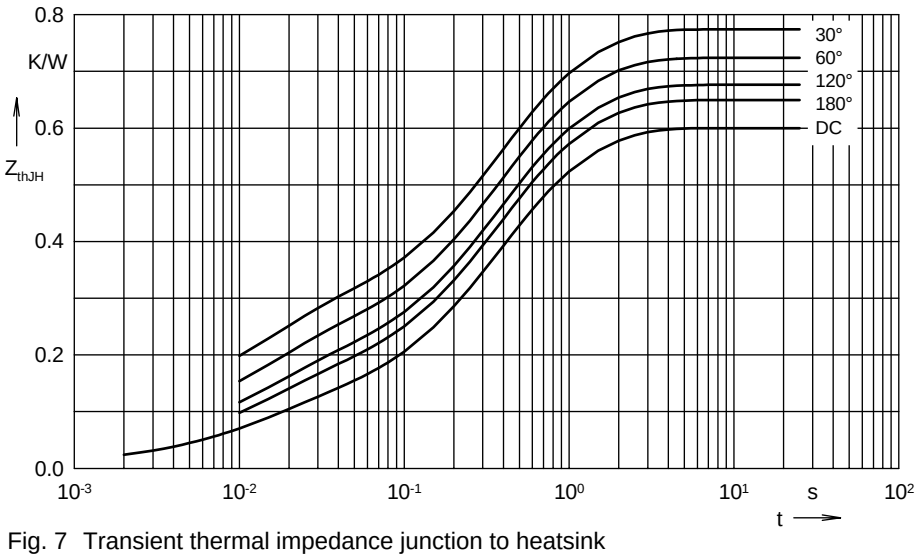


Fig. 7 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d:

d	R_{thJH} (K/W)
DC	0.6
180°	0.65
120°	0.677
60°	0.725
30°	0.775

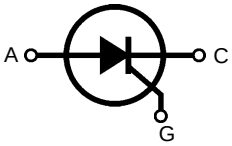
Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.01	0.001
2	0.09	0.013
3	0.30	0.3
4	0.20	0.9

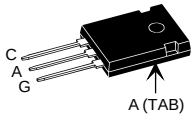
Phase Control Thyristor

V_{RRM} = 800-1600 V
$I_{T(RMS)}$ = 75 A
$I_{T(AV)M}$ = 48 A

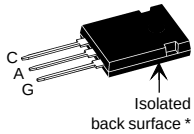
V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type	
900	800	CS 45-08io1	
1300	1200	CS 45-12io1	
1700	1600	CS 45-16io1	CS 45-16io1R



TO-247 AD
Version io1



ISOPLUS 247™
Version io1R



* Patent pending

C = Cathode, A = Anode, G = Gate

Symbol	Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		75	A
$I_{T(AV)M}$	T_C = 75°C; 180° sine		48	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	520	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	560	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	460	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	500	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	1350	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	1300	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	1050	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	1030	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f = 50 Hz, t_P = 200 µs	repetitive, I_T = 40 A	150	A/µs
	$V_D = {}^2/_3 V_{DRM}$; I_G = 0.3 A; di_G/dt = 0.3 A/µs	non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = {}^2/_3 V_{DRM}$	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
$P_{G(AV)}$			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+140	°C
T_{VJM}			140	°C
T_{stg}			-40...+125	°C
M_d	Version io1:	mounting torque M3	0.8...1.2	Nm
F_C	Version io1R:	mounting force with clip	20...120	N
V_{ISOL} *	50/60 Hz, RMS, t = 1 minute, leads-to-tab		2500	V~
Weight			6	g

* Verson io1R only

Features

- Thyristor for line frequency
- International standard package JEDEC TO-247
- Planar passivated chip
- Long-term stability of blocking currents and voltages
- Version AR isolated and UL registered E153432
- Epoxy meets UL 94V-0

Applications

- Motor control
- Power converter
- AC power controller
- Switch-mode and resonant mode power supplies
- Light and temperature control

Advantages

- Easy to mount with 1 screw (isolated mounting screw hole)
- Space and weight savings
- Simple mounting
- Improved temperature and power cycling

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

030

Symbol	Conditions			Characteristic Values	
I_R, I_D	T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}		≤	5	mA
V_T	I_T = 80 A; T_{VJ} = 25°C		≤	1.64	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.85	V
r_T				11	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	1.6	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	200	mA
V_{GD}	T_{VJ} = T_{VJM};	V_D = $^2/_3$ V_{DRM}	≤	0.2	V
I_{GD}			≤	10	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	150	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	100	mA
t_{gd}	T_{VJ} = 25°C; V_D = ½ V_{DRM} I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	2	µs
R_{thJC}	DC current			0.62	K/W
R_{thJH}	DC current			0.82	K/W
a	Max. acceleration, 50 Hz			50	m/s^2

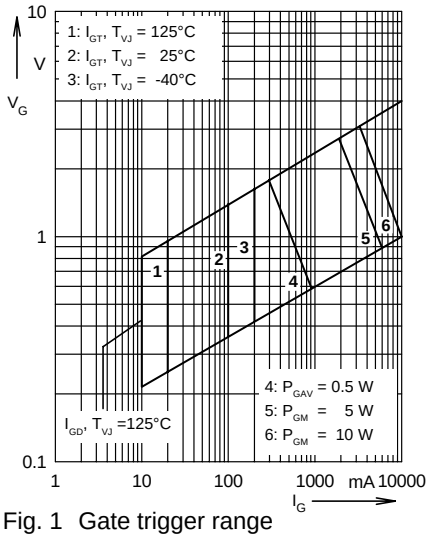


Fig. 1 Gate trigger range

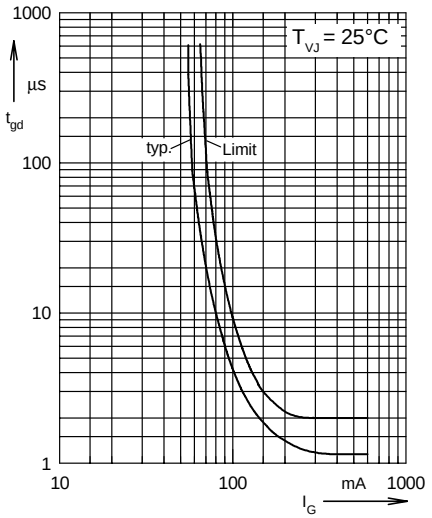
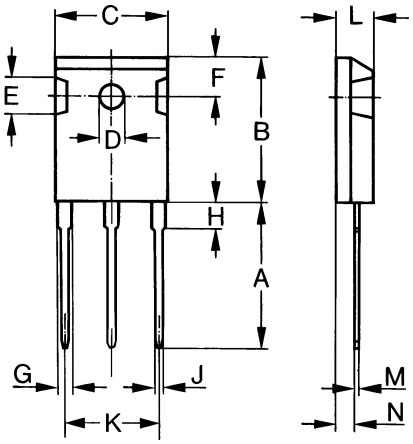


Fig. 2 Gate controlled delay time t_{gd}

TO-247 AD and ISOPLUS 247™



Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D*	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

* ISOPLUS 247™ without hole

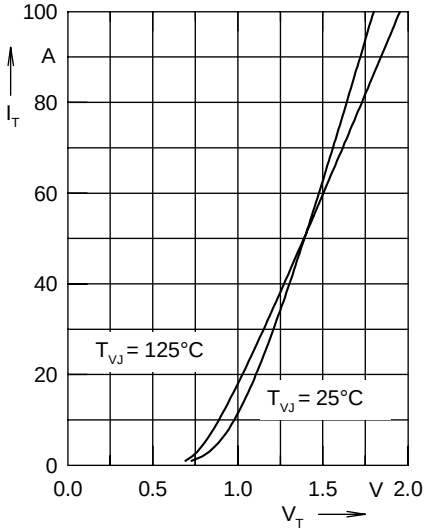


Fig. 3 Forward characteristics

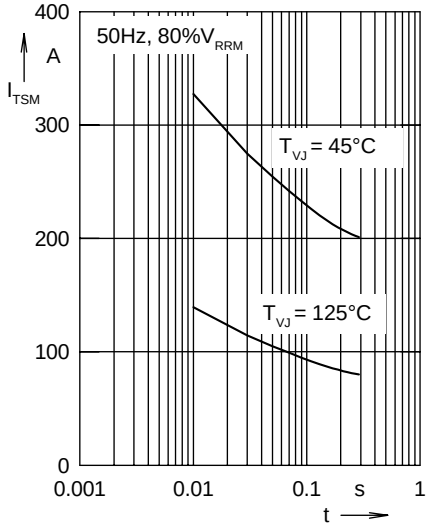


Fig. 4 Surge overload current
I_{TSM}: crest value, t: duration

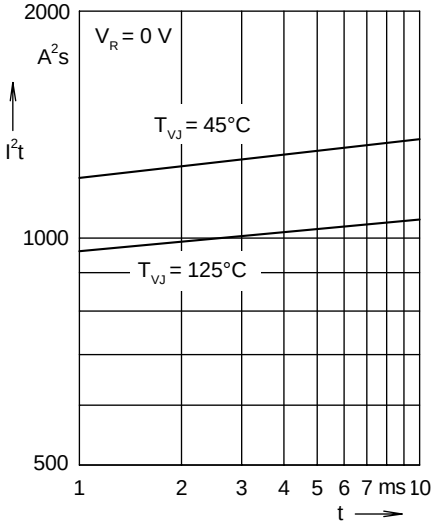


Fig. 5 I^2t versus time (1-10 ms)

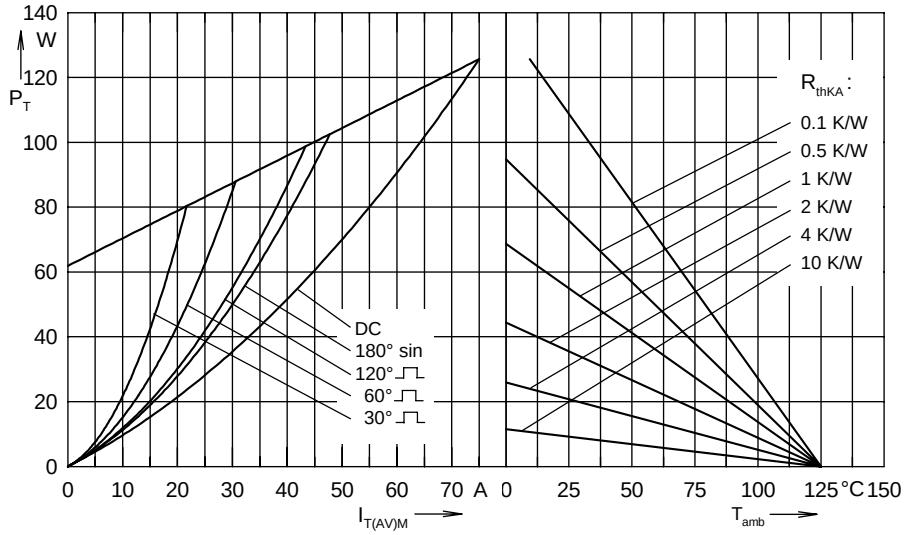


Fig. 6 Power dissipation versus forward current and ambient temperature

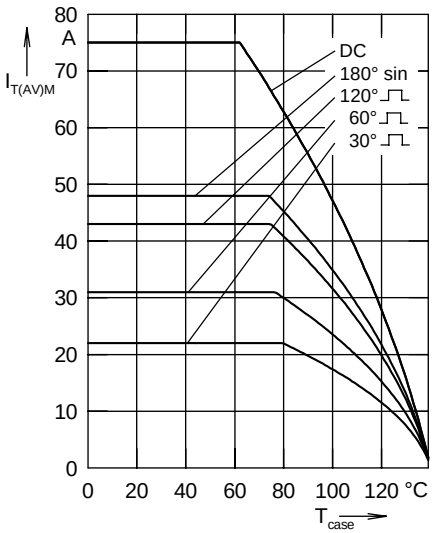


Fig. 7 Max. forward current at case temperature

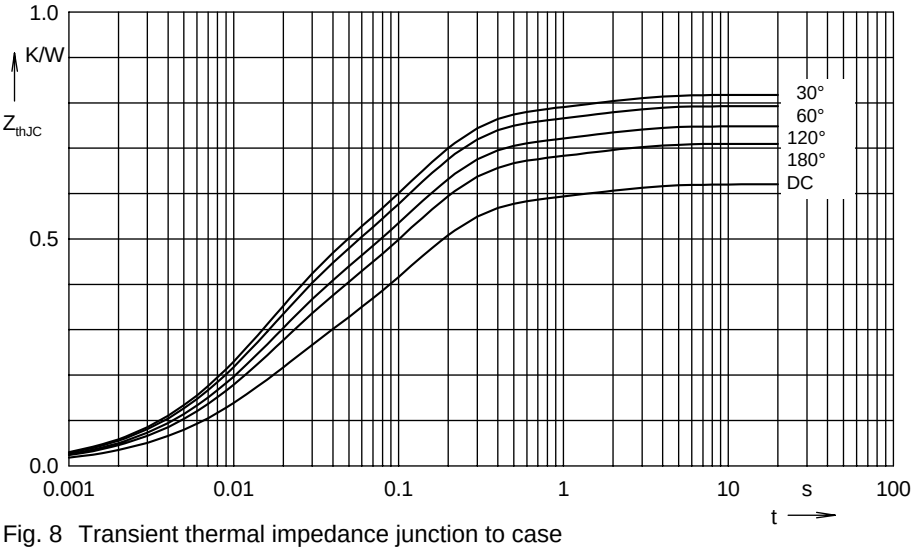


Fig. 8 Transient thermal impedance junction to case

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.62
180°	0.71
120°	0.748
60°	0.793
30°	0.817

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.206	0.013
2	0.362	0.118
3	0.052	1.488