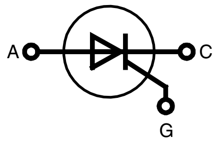
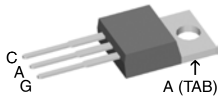
Phase Control Thyristor

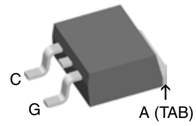
V_{RRM} = 800/1200 V
$I_{T(RMS)}$ = 29 A
$I_{T(AV)M}$ = 19 A

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type TO-220	Type 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	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	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
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f = 50 Hz; t_p = 200 µs	repetitive, I_T = 20 A	100	A/µs
	$V_D = {}^2/_3\, V_{DRM}$ I_G = 0.15 A di_G/dt = 0.15 A/µs	non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_D = {}^2/_3\, V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)		500	V/µs
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; TO-220		0.45	Nm
	Mounting torque with screw M3.5; TO-220		0.55	Nm
Weight	typ.		2	g

Data according to IEC 60747

Features

- SCR for frequency up to 400 Hz
- 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

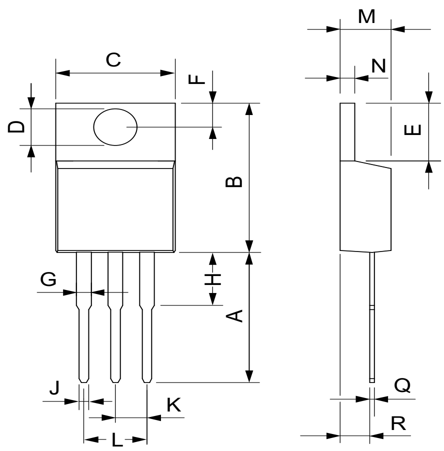
Advantages

- Space and weight savings
- Simple mounting

IXYS reserves the right to change limits, test conditions and dimensions. 20071212a

Symbol	Conditions		Characteristic Values		
			typ.	max.	
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$;	$T_{VJ} = T_{VJM}$		5	mA
V_T	I_T = 20 A;	T_{VJ} = 25°C		1.6	V
V_{T0}	For power-loss calculations only			0.85	V
r_T		T_{VJ} = 125°C		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		28	mA
		T_{VJ} = -40°C		50	mA
V_{GD}	V_D = $^2/_3$ V_{DRM};	$T_{VJ} = T_{VJM}$		0.2	V
I_{GD}				3	mA
I_L	t_p = 10 µs; I_G = 0.1 A; di_G/dt = 0.1 A/µs	T_{VJ} = 25°C		75	mA
I_H	V_D = 6 V; R_{GK} = ∞;	T_{VJ} = 25°C		50	mA
t_{gd}	V_D = ½ V_{DRM}; I_G = 0.1 A; di_G/dt = 0.1 A/µs	T_{VJ} = 25°C		2	µs
R_{thJC}	DC current			1.0	K/W
R_{thJH}	DC current		0.25		K/W
a	Max. acceleration; 50 Hz			50	m/s^2

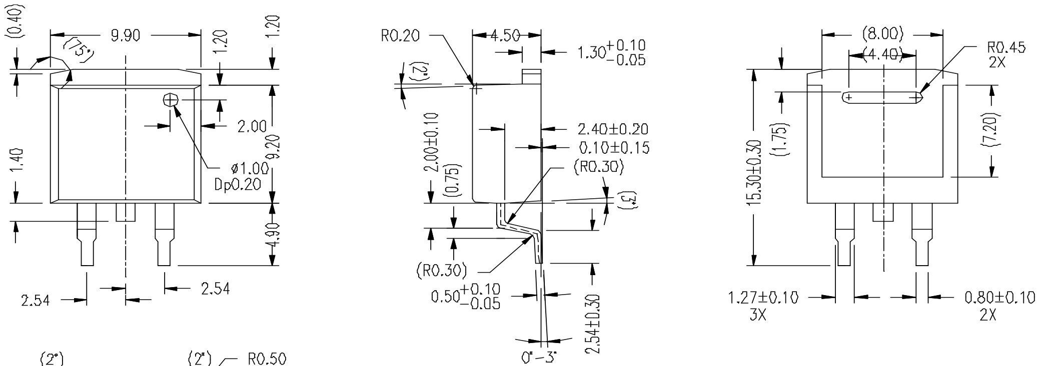
TO-220 AB

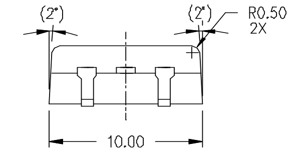


Dimensions (1 mm = 0.0394")

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches 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

TO-263 AA





NOTE:
1. These dimensions do not inclue mold protusion.
2. ( ) is reference dimension only.

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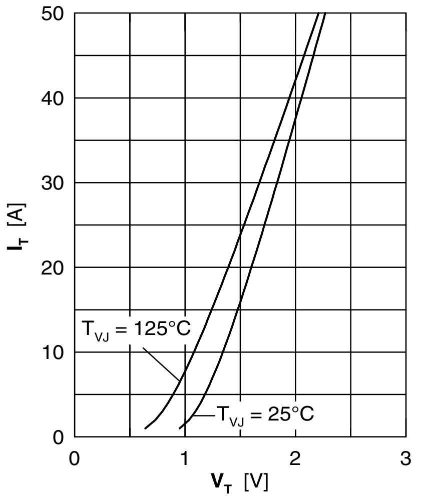

Fig. 1 Forward characteristics

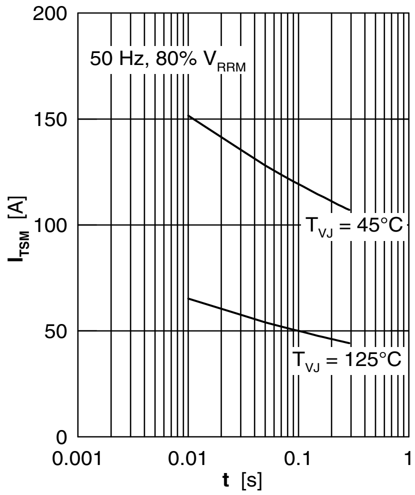

Fig. 2 Surge overload current I_{TSM}: crest value, t: duration

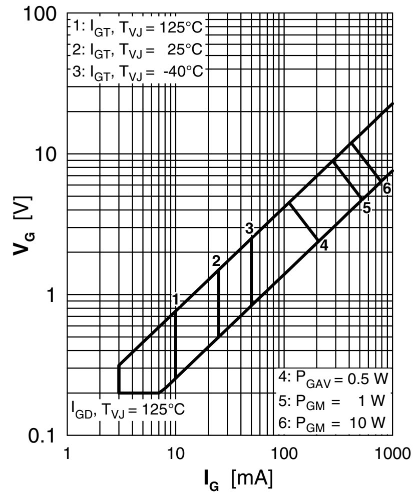

Fig. 3 Gate trigger range

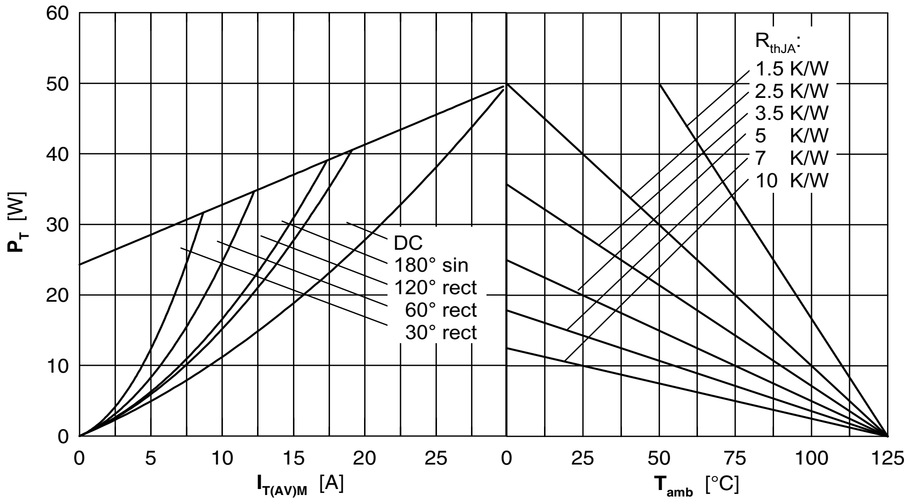

Fig. 4 Power dissipation versus forward current and ambient temperature

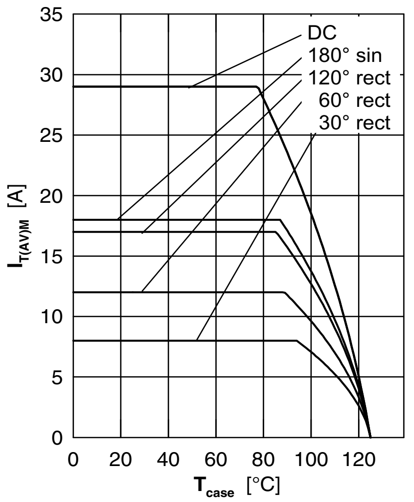

Fig. 5 Max. forward current at case temperature

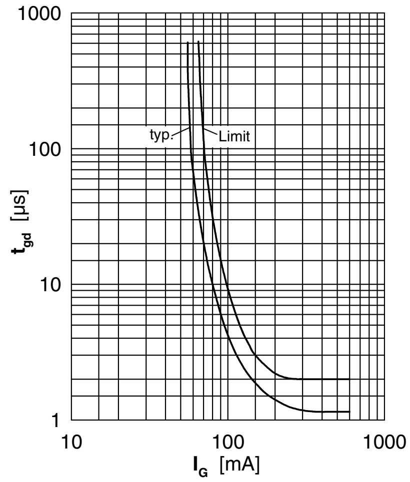

Fig. 6 Forward characteristics

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