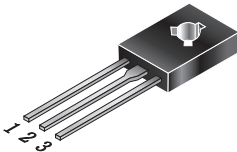


Description

Standard gate triggering SCR is fully isolated package suitable for the application where requiring high bidirectional blocking voltage capability and also suitable for over voltage protection ,motor control circuit in power tool, inrush current limit circuit and heating control system.

Symbol		Simplified outline	
		 TO-126	
Pin	Description		
1	cathode		
2	anode		
3	gate		
TAB	anode		

Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 2 A

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_T (RMS)$	RMS on-state current (full sine wave)	2	A
I_{TSM}	Non-repetitive peak on-state current	20	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal resistance Junction to case		-	-	10	°C/W
$R_{\theta JA}$	Thermal resistance Junction to ambient		-	-	70	°C/W



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Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state Voltages		-	600	V
$I_{T(RMS)}$	RMS on-state current		-	4	A
I_{TSM}	Non-repetitive peak On-state current		-	20	A
I^2t	Circuit Fusing		-	33	A ² S
$I_{T(AV)}$ I_{TSM} I_{FGM}	Average On-Current Surge On-Current Peak Forward gate current		- - -	2.0 20 0.2	A A A
I_{GM}	Forward Peak gate current		-	0.2	A
V_{GRM}	Peak gate voltage		-	6	V
P_{GM}	Forward Peak Gate Power		-	0.5	W
$P_{G(AV)}$	Forward Average Gate Power		-	0.1	W
T_{stg}	Storage temperature		-55	150	°C
T_j	Operating junction Temperature		-40	125	°C

 $T_j=25^{\circ}\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	$V_{DM}=6V, R_L=100\ \Omega, R_{GK}=1\ K\ \Omega$	-	-	200	μA
I_{DRM}	Repetitive Peak Off-State Current	$V_{RM}=V_{RRM}, T_j=125^{\circ}\text{C}, R_{GK}=1K\ \Omega$	-	-	100	μA
V_{GD}	Gate Non-Trigger Voltage	$V_{DM}=1/2V_{DRM}, T_j=125^{\circ}\text{C}, R_{GK}=1K\ \Omega$	0.2	-	-	V
V_{TM}	Peak On-Stage Voltage	$I_{TM}=4A,$	-	-	2.2	V
V_{GT}	Gate trigger voltage	$V_{DM}=6\text{ V}, R_L=100\ \Omega, R_{GK}=1\ K\ \Omega$	-	-	0.8	V

Dynamic Characteristics

I_{RRM}	Repetitive Peak Reverse Current	$V_{RRM}=\text{Rated}, T_j=110^{\circ}\text{C},$	-	-	100	μA
$R_{th(j-c)}$	Thermal Resistance	Junction to Case	-	-	10	°C/W

Description

Fig. 1 $I_{TM}-V_{TM}$ CHARACTERISTICS

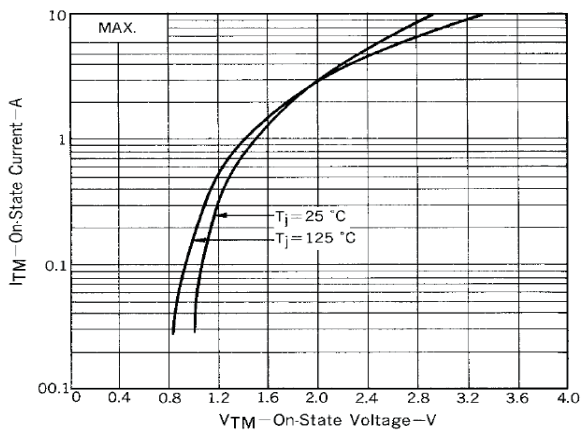


Fig. 2 $P_T(AV)-I_T(AV)$ CHARACTERISTICS

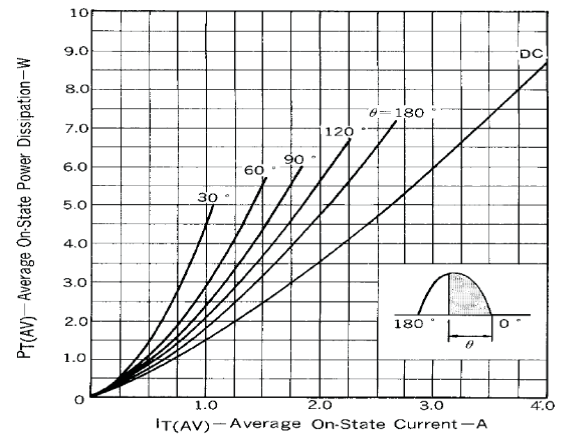


Fig. 3 $I_T(AV)-T_C$ RATINGS

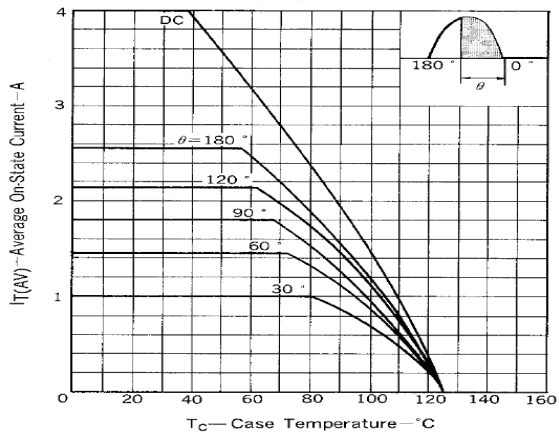


Fig. 4 $T_a-I_T(AV)$ RATINGS

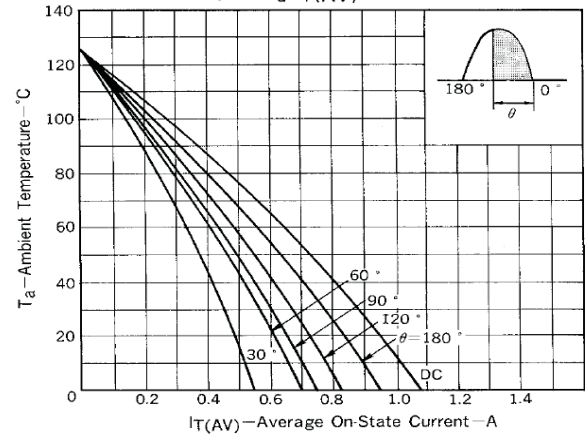


Fig. 5 $I_{GT}-T_a$ TYPICAL DISTRIBUTION

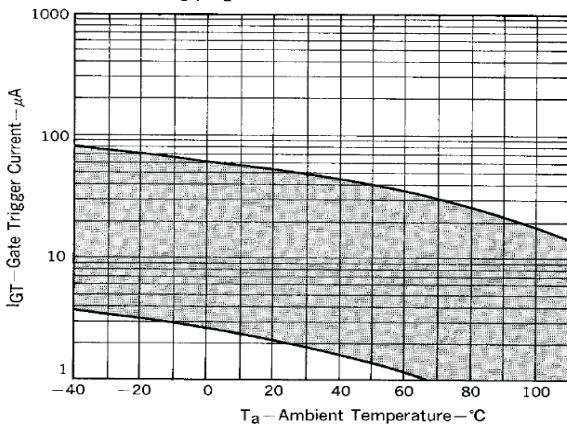
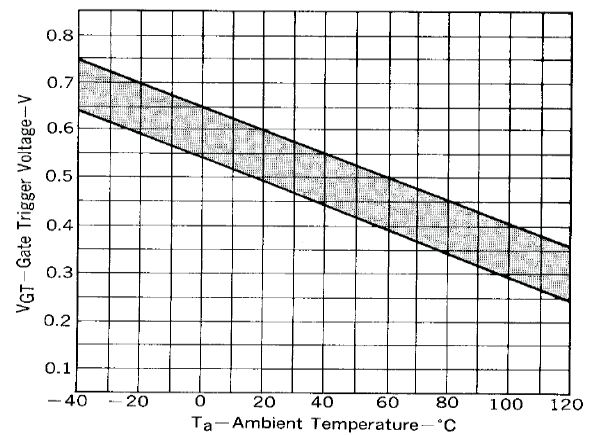


Fig. 6 $V_{GT}-T_a$ TYPICAL DISTRIBUTION



Description

Fig. 7 $I_{GT}-\tau_G$ TYPICAL DISTRIBUTION

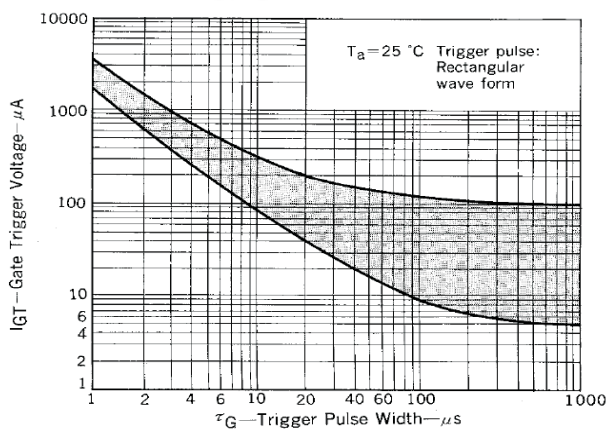


Fig. 8 $V_{GT}-\tau_G$ TYPICAL DISTRIBUTION

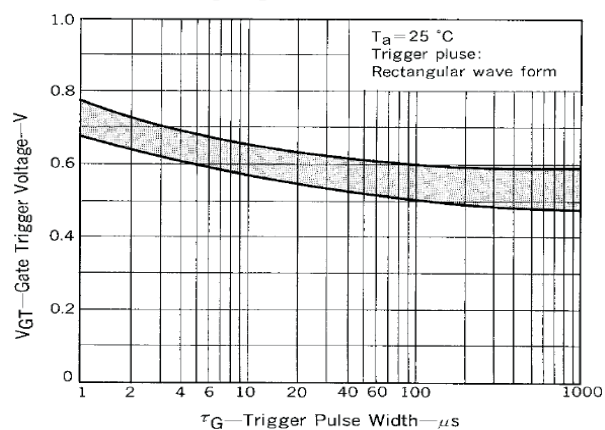


Fig. 9 I_H-T_a TYPICAL DISTRIBUTION

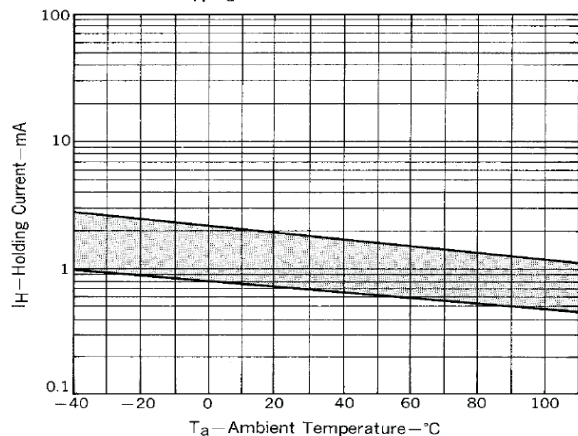


Fig. 10 I_{TSM} RATINGS

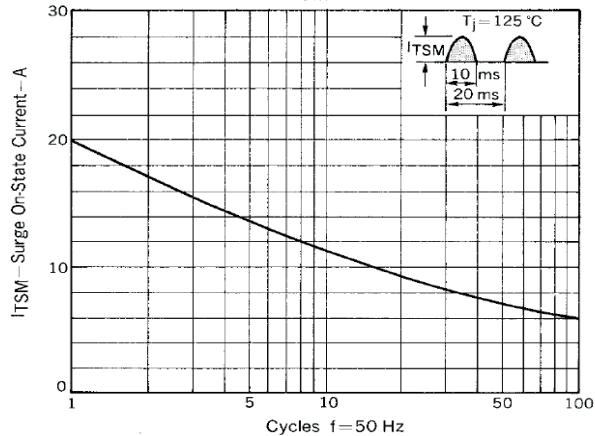
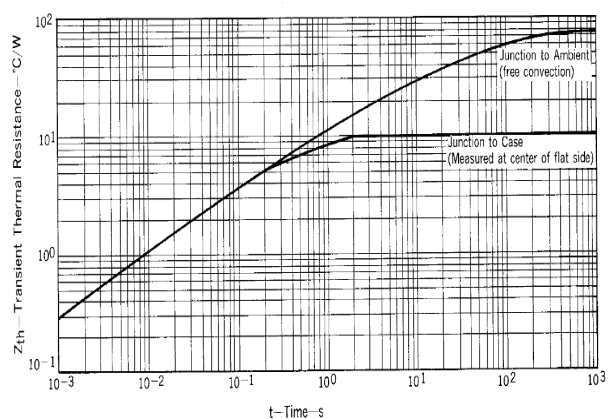
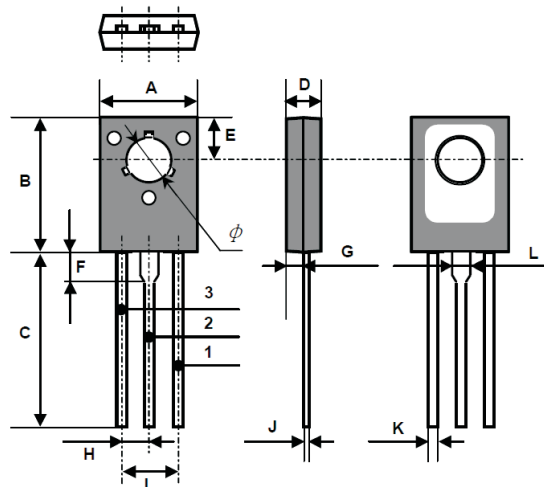


Fig. 11 Z_{th} CHARACTERISTICS



MECHANICAL DATA

Dimensions in mm
Net Mass: 0.8 g
TO-126



TO-126 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
ϕ		3.2			0.126	