



**TRIACS**

- GLASS PASSIVATED CHIP
- I<sub>GT</sub> SPECIFIED IN FOUR QUADRANTS

**ADVANTAGES**

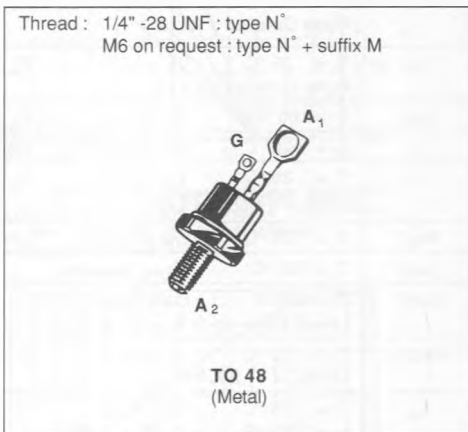
- EXCELLENT (dv/dt)<sub>c</sub> : > 10 V/μs
- METALLIC ENCAPSULATION GIVES AN EXCELLENT THERMAL IMPEDANCE AND HIGH RELIABILITY CONSTRUCTION

**APPLICATIONS**

- MOTOR CONTROL
- HEATING CONTROL
- LIGHT DIMMER

**DESCRIPTION**

Power triacs suited for use on 220 V and 380 V main.



**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit
I <sub>T(RMS)</sub>	RMS on-state Current (360° conduction angle) T <sub>C</sub> = 60 °C	25	A
I <sub>TSM</sub>	Non Repetitive Surge Peak on-state Current (T <sub>j</sub> initial = 25 °C - Half sine wave)	t = 8.3 ms	262
		t = 10 ms	250
I <sup>2</sup> t	I <sup>2</sup> t Value for Fusing t = 10 ms	312.5	A <sup>2</sup> s
di/dt	Critical Rate of Rise of on-state Current (1)	Repetitive F = 50 Hz	20
		Non Repetitive	100
T <sub>stg</sub> T <sub>j</sub>	Storage and Operating Junction Temperature Range	- 40 to 150	°C
		- 40 to 100	°C

Symbol	Parameter	TRAL				Unit
		1125D	2225D	3325D	3825D	
V <sub>DRM</sub>	Repetitive Peak off-state Voltage (2)	200	400	600	700	V

(1) I<sub>G</sub> = 1.5 A di/dt = 1 A/μs  
(2) T<sub>j</sub> = 100 °C.

**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
R <sub>th(c-h)</sub>	Contact (case-heatsink) for Recommended Stud Torque	0.4	°C/W
R <sub>th(j-c)</sub> DC	Junction to Case for DC	1.24	°C/W
R <sub>th(j-c)</sub> AC	Junction to Case for 360 ° Conduction Angle (F = 50 Hz)	0.93	°C/W

**GATE CHARACTERISTICS** (maximum values)

$P_{GM} = 40 \text{ W}$  ( $t_p = 10 \mu\text{s}$ )       $I_{GM} = 6 \text{ A}$  ( $t_p = 10 \mu\text{s}$ )  
 $P_{G(AV)} = 1 \text{ W}$        $V_{GM} = 16 \text{ V}$  ( $t_p = 10 \mu\text{s}$ )

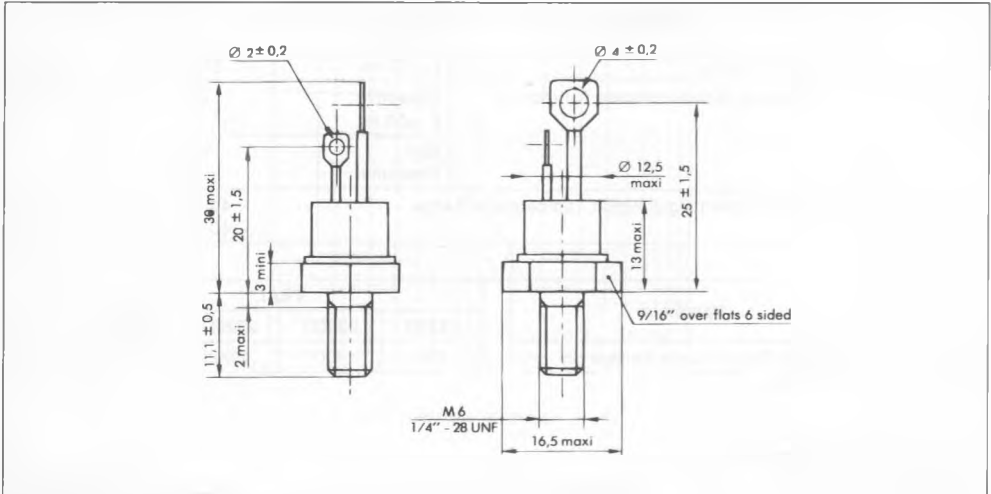
**ELECTRICAL CHARACTERISTICS**

Symbol	Test Conditions			Quadrants	Min.	Typ.	Max.	Unit
$I_{GT}$	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration $> 20 \mu\text{s}$	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$	I-II-III			100	mA
				IV			150	
$V_{GT}$	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration $> 20 \mu\text{s}$	$V_D = 12 \text{ V}$	$R_L = 33 \text{ } \Omega$	I-II-III-IV			1.5	V
$V_{GD}$	$T_j = 100 \text{ }^\circ\text{C}$	$V_D = V_{DRM}$	$R_L = 3.3 \text{ k}\Omega$	I-II-III-IV	0.2			V
$I_H^*$	$T_j = 25 \text{ }^\circ\text{C}$	$I_T = 500 \text{ mA}$	Gate Open				100	mA
$I_L$	$T_j = 25 \text{ }^\circ\text{C}$ Pulse Duration $> 20 \mu\text{s}$	$V_D = 12 \text{ V}$	$I_G = 300 \text{ mA}$	I-III-IV		50		mA
				II		100		
$V_{TM}^*$	$T_j = 25 \text{ }^\circ\text{C}$	$I_{TM} = 35 \text{ A}$	$t_p = 10 \text{ ms}$				2	V
$I_{DRM}^*$	$T_j = 100 \text{ }^\circ\text{C}$	$V_{DRM}$ Specified					3	mA
$dv/dt^*$	$T_j = 100 \text{ }^\circ\text{C}$	Gate Open			250			V/ $\mu\text{s}$
$(dv/dt)_c^*$	$T_C = 60 \text{ }^\circ\text{C}$ $(di/dt)_c = 11.2 \text{ A/ms}$	$V_D = V_{DRM}$	$I_T = 35 \text{ A}$					V/ $\mu\text{s}$
$t_{GI}$	$T_j = 25 \text{ }^\circ\text{C}$ $I_G = 200 \text{ mA}$	$V_D = V_{DRM}$ $di_G/dt = 2 \text{ A}/\mu\text{s}$	$I_T = 35 \text{ A}$	I-II-III-IV		3		$\mu\text{s}$

\* For either polarity of electrode  $A_2$  voltage with reference to electrode  $A_1$ .

**PACKAGE MECHANICAL DATA**

TO 48 Metal



Cooling method : by conduction (method C)  
 Marking : type number  
 Weight : 13.5 ± 1 g  
 Polarity : anode to case  
 Stud torque : 3.5 mAN min - 3.8 mAN max.

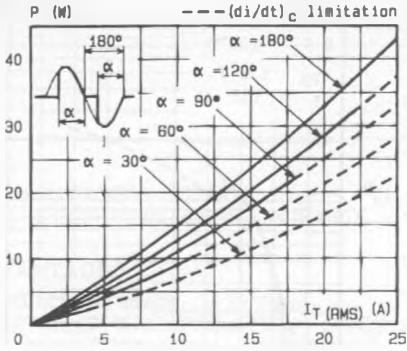


Fig. 1 - Maximum mean power dissipation versus RMS on-state current (F = 80 Hz).

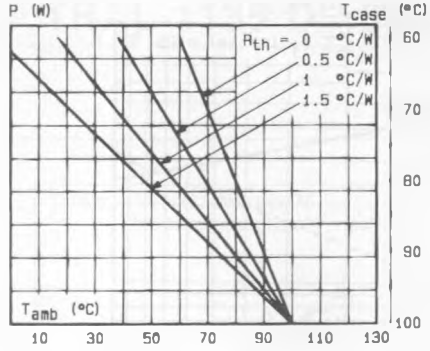


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T<sub>amb</sub> and T<sub>case</sub>) for different thermal resistances heatsink + contact.

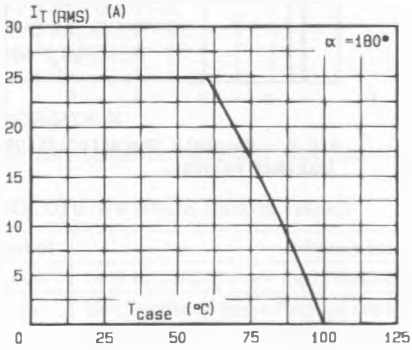


Fig. 3 - RMS on-state current versus case temperature.

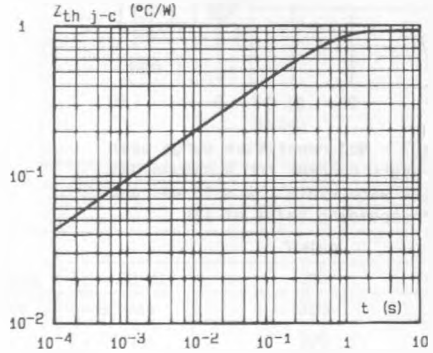


Fig. 4 - Thermal transient impedance junction to case versus pulse duration.

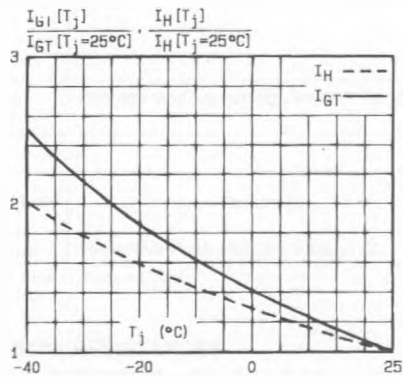


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

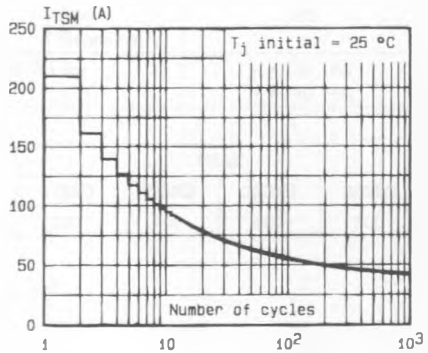


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

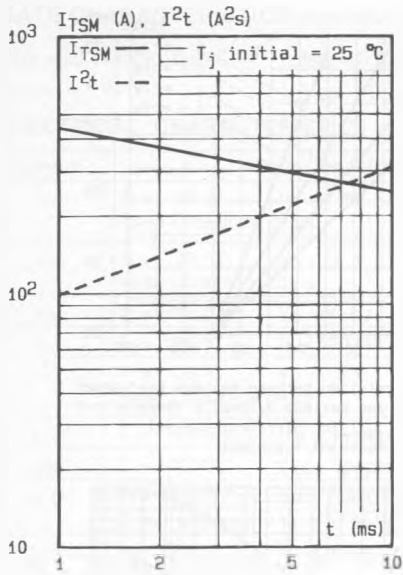


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t \leq 10$  ms. and corresponding value of  $I^2t$ .

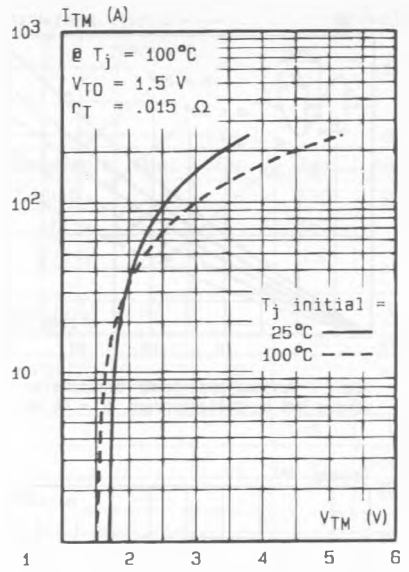


Fig.8 - On-state characteristics (maximum values).