

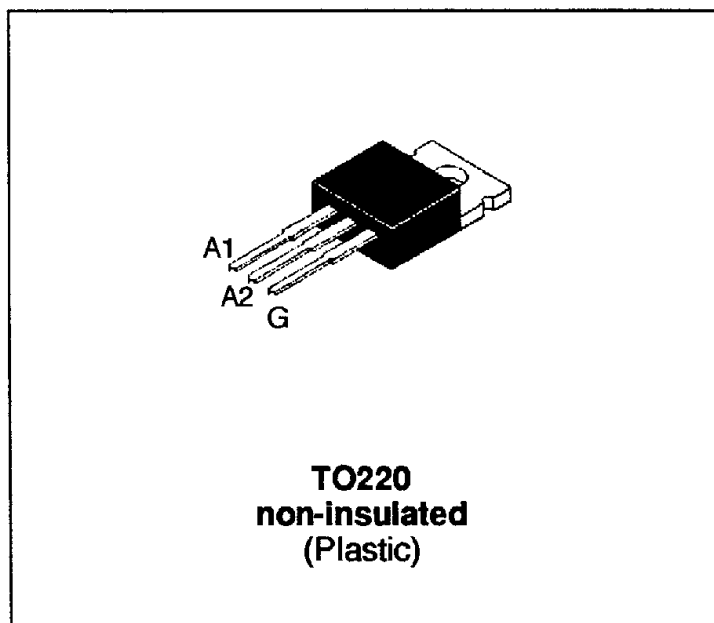
## SENSITIVE GATE TRIACS

### FEATURES

- $I_{T(RMS)} = 8A$
- $V_{DRM} = 400V$  to  $800V$
- $I_{GT} \leq 5mA$  to  $\leq 10mA$

### DESCRIPTION

The T08xxxH series of triacs uses a high performance MESA GLASS technology. These parts are intended for general purpose applications where gate high sensitivity is required.



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_c = 95^\circ C$	8	A
$I_{TSM}$	Non repetitive surge peak on-state current ( $T_j$ initial = $25^\circ C$ )	$t_p = 8.3$ ms	73	A
		$t_p = 10$ ms	70	
$I^2t$	$I^2t$ Value for fusing	$t_p = 10$ ms	24	$A^2s$
$di/dt$	Critical rate of rise of on-state current $I_G = 50$ mA $di_G/dt = 0.1$ A/ $\mu s$ .	Repetitive F = 50 Hz	10	A/ $\mu s$
		Non Repetitive	50	
$T_{stg}$ $T_j$	Storage and operating junction temperature range		- 40, +150 - 40, +125	$^\circ C$
$T_l$	Maximum lead temperature for soldering during 10s at 4.5mm from case		260	$^\circ C$

Symbol	Parameter	Voltage				Unit
		D	M	S	N	
$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage $T_j = 125^\circ C$	400	600	700	800	V

**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	60	°C/W
Rth(j-c)	Junction to case for D.C	4	°C/W
Rth(j-c)	Junction to case for A.C 360° conduction angle (F=50Hz)	3	°C/W

**GATE CHARACTERISTICS (maximum values)**

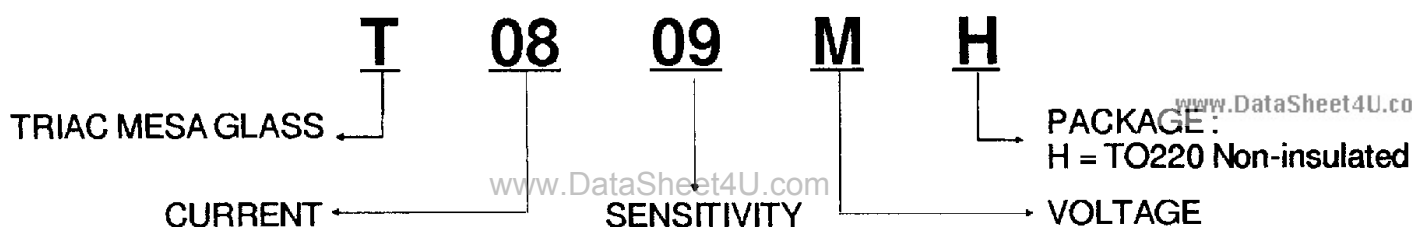
$P_G (AV) = 1 W$   $P_{GM} = 10 W$  ( $t_p = 20 \mu s$ )  $I_{GM} = 4 A$  ( $t_p = 20 \mu s$ )

**ELECTRICAL CHARACTERISTICS**

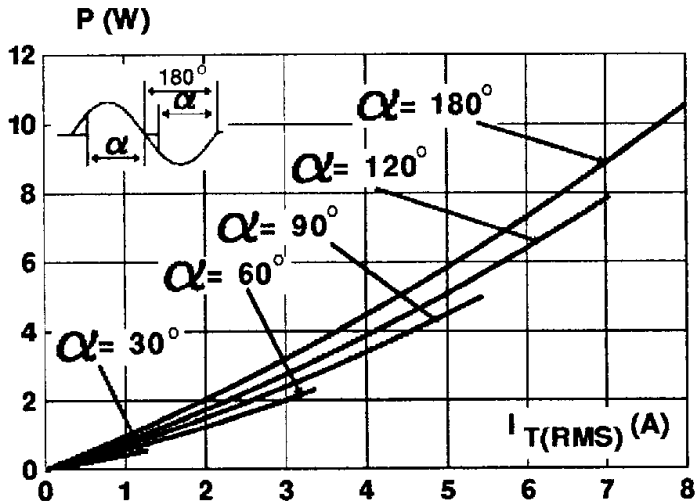
Symbol	Test Conditions	Quadrant		Sensitivity		Unit	
				05	09		
$I_{GT}$	$V_D = 12V$ (DC) $R_L = 33\Omega$	$T_j = 25^\circ C$	I-II-III-IV	MAX	5	10	mA
$V_{GT}$	$V_D = 12V$ (DC) $R_L = 33\Omega$	$T_j = 25^\circ C$	I-II-III-IV	MAX	1.5		V
$V_{GD}$	$V_D = V_{DRM}$ $R_L = 3.3k\Omega$	$T_j = 125^\circ C$	I-II-III-IV	MIN	0.2		V
$t_{gt}$	$V_D = V_{DRM}$ $I_G = 40mA$ $I_T = 11A$ $di_G/dt = 0.5A/\mu s$	$T_j = 25^\circ C$	I-II-III-IV	TYP	2		$\mu s$
$I_H^*$	$I_T = 50mA$ Gate open	$T_j = 25^\circ C$		MAX	5	10	mA
$I_L$	$I_G = 1.2 I_{GT}$	$T_j = 25^\circ C$	I-III-IV	TYP	5	10	mA
			II	TYP	10	20	
$V_{TM}^*$	$I_{TM} = 11A$ $t_p = 380\mu s$	$T_j = 25^\circ C$		MAX	1.65		V
$I_{DRM}$ $I_{RRM}$	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ C$		MAX	5		$\mu A$
		$T_j = 110^\circ C$		MAX	2		mA
$dV/dt^*$	$V_D = 67\% V_{DRM}$ Gate open	$T_j = 110^\circ C$		MIN		20	V/ $\mu s$
				TYP	10		
$(dV/dt)_c^*$	$(di/dt)_c = 3.5 A/ms$	$T_j = 110^\circ C$		TYP	1	2	V/ $\mu s$

\* For either polarity of electrode A<sub>2</sub> voltage with reference to electrode A<sub>1</sub>

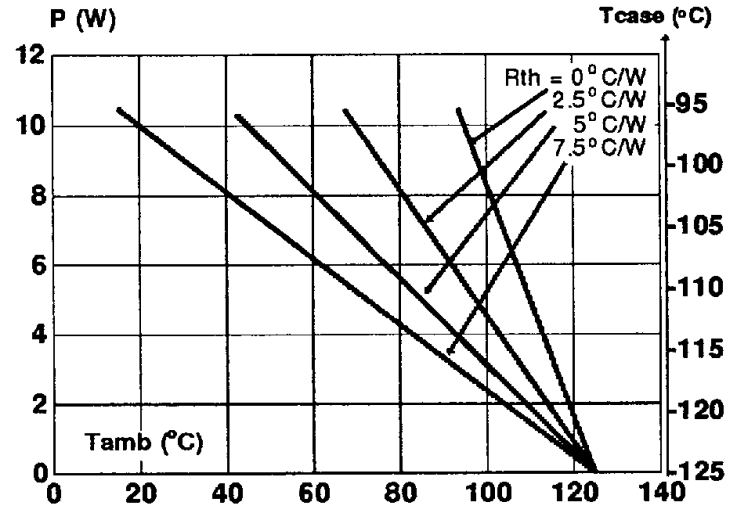
**ORDERING INFORMATION**



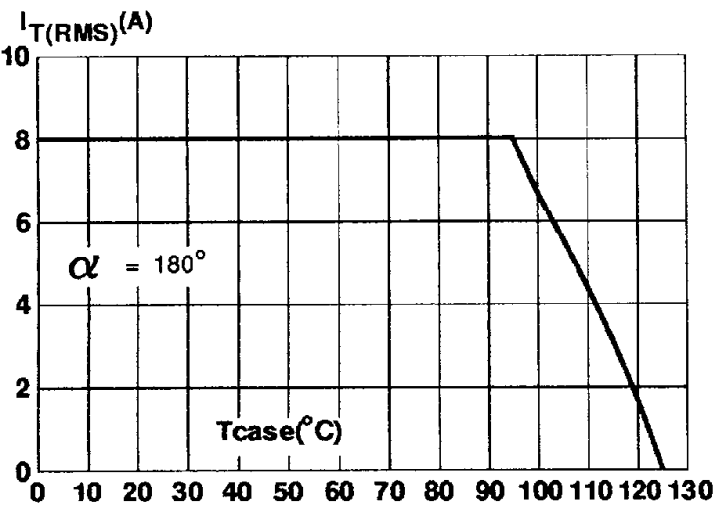
**Fig.1 :** Maximum RMS power dissipation versus RMS on-state current.



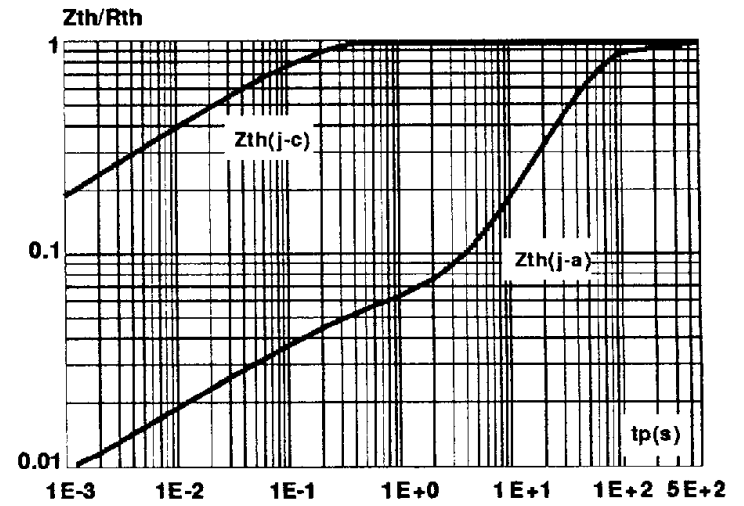
**Fig.2 :** Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact.



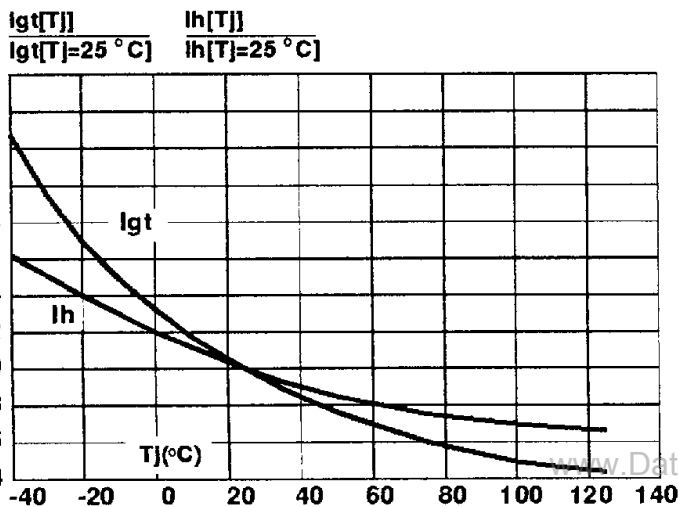
**Fig.3 :** RMS on-state current versus case temperature.



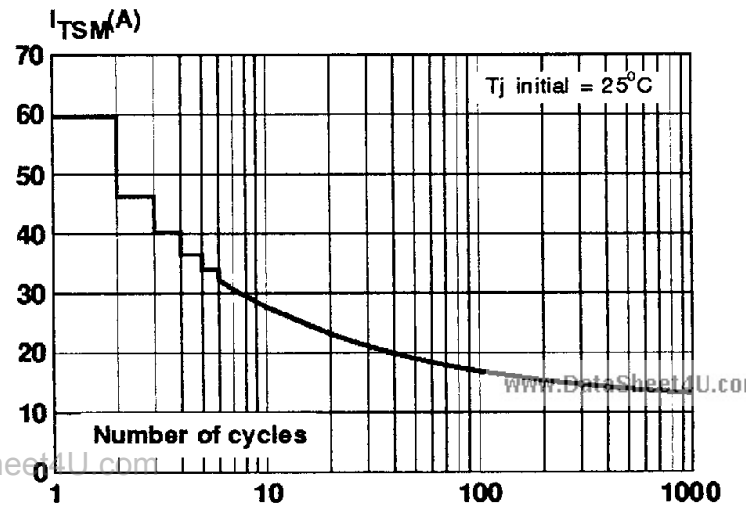
**Fig.4 :** Relative variation of thermal impedance versus pulse duration.



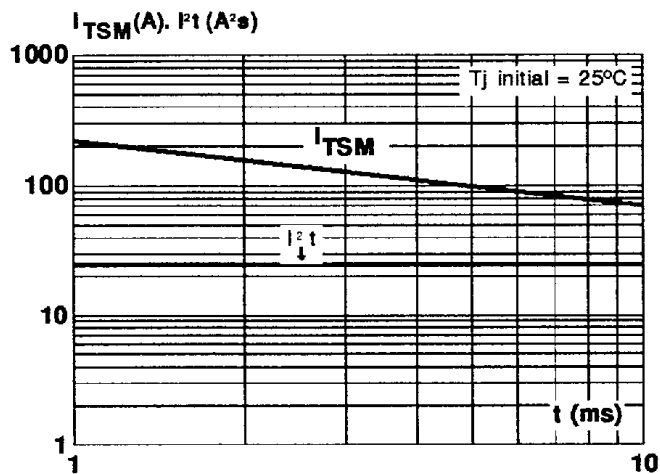
**Fig.5 :** Relative variation of gate trigger current and holding current versus junction temperature.



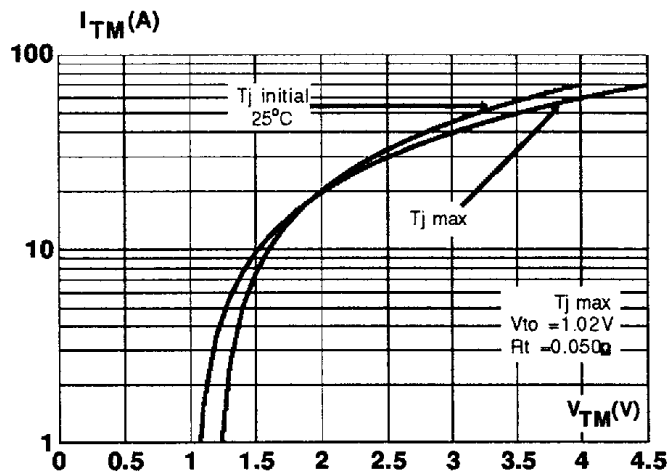
**Fig.6 :** Non repetitive surge peak on-state current versus number of cycles.



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

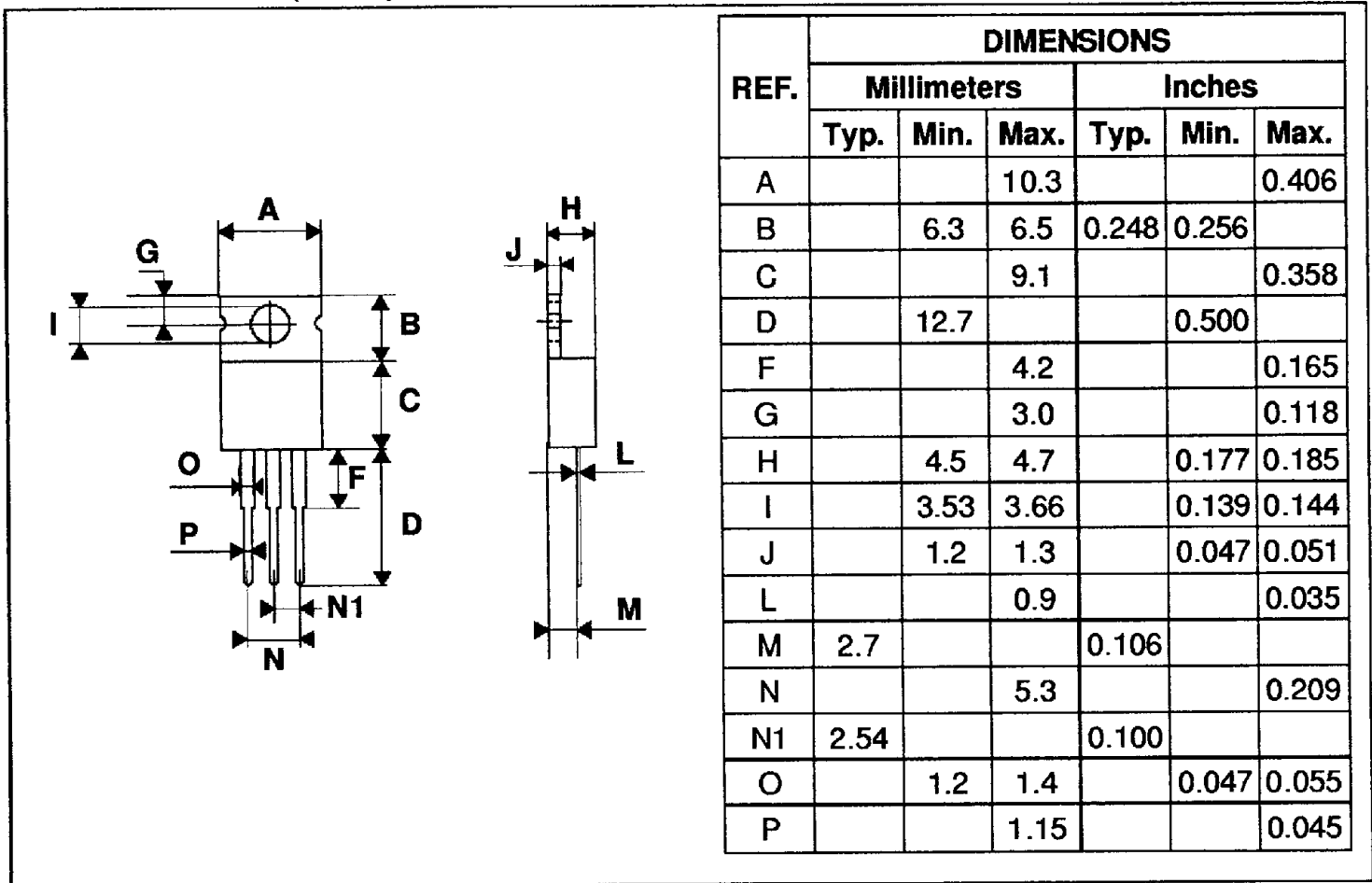


**Fig.8 :** On-state characteristics (maximum values).



### PACKAGE MECHANICAL DATA

TO220 Non-insulated (Plastic)



Marking : type number  
Weight : 1.8 g