

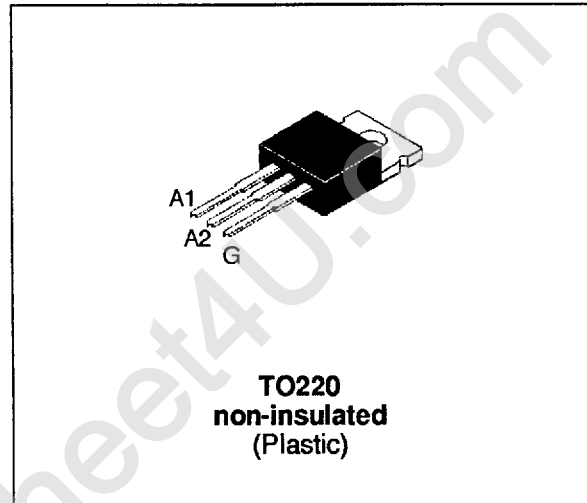
STANDARD TRIACS

FEATURES

- $I_{T(RMS)} = 10A$
- $V_{DRM} = 400V$ to $800V$
- High surge current capability

DESCRIPTION

The T10xxxH series of triacs uses a high performance MESA GLASS technology. These parts are intended for general purpose switching and phase control applications.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_c = 95^\circ C$ 10	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25^\circ C$)	$t_p = 8.3$ ms	105
		$t_p = 10$ ms	100
$I^2 t$	$I^2 t$ Value for fusing	$t_p = 10$ ms	50
di/dt	Critical rate of rise of on-state current $I_a = 500$ mA $di_a/dt = 1$ A/ μ s.	Repetitive F = 50 Hz	10
		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

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THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	60	°C/W
Rth(j-c)	Junction to case for D.C	3.3	°C/W
Rth(j-c)	Junction to case for A.C 360° conduction angle (F=50Hz)	2.5	°C/W

GATE CHARACTERISTICS (maximum values)

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

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity			Unit
					10	12	13	
I_{GT}	$V_D = 12\text{V (DC)}$ $R_L = 33\Omega$	$T_j = 25^\circ\text{C}$	I-II-III	MAX	25	50	50	mA
			IV	MAX	25	50	75	
V_{GT}	$V_D = 12\text{V (DC)}$ $R_L = 33\Omega$	$T_j = 25^\circ\text{C}$	I-II-III-IV	MAX	1.5			V
V_{GD}	$V_D = V_{DRM}$ $R_L = 3.3\text{k}\Omega$	$T_j = 125^\circ\text{C}$	I-II-III-IV	MIN	0.2			V
t_{gt}	$V_D = V_{DRM}$ $I_G = 500\text{mA}$ $I_T = 14\text{A}$ $di/dt = 3\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$	I-II-III-IV	TYP	2			μs
I_H^*	$I_T = 250 \text{ mA}$ Gate open	$T_j = 25^\circ\text{C}$		MAX	25	50	75	mA
I_L	$I_G = 1.2 I_{GT}$	$T_j = 25^\circ\text{C}$	I-III-IV	TYP	25	50	75	mA
			II	TYP	50	100	150	
V_{TM}^*	$I_{TM} = 14\text{A}$ $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$		MAX	1.5			V
I_{DRM} I_{RRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$		MAX	10			μA
		$T_j = 110^\circ\text{C}$		MAX	2			mA
dV/dt^*	$V_D = 67\% V_{DRM}$ Gate open	$T_j = 110^\circ\text{C}$		MIN	200	500	500	V/ μs
$(dV/dt)c^*$	$(di/dt)c = 4.4 \text{ A/ms}$	$T_j = 110^\circ\text{C}$		MIN	2	5	10	V/ μs

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

ORDERING INFORMATION

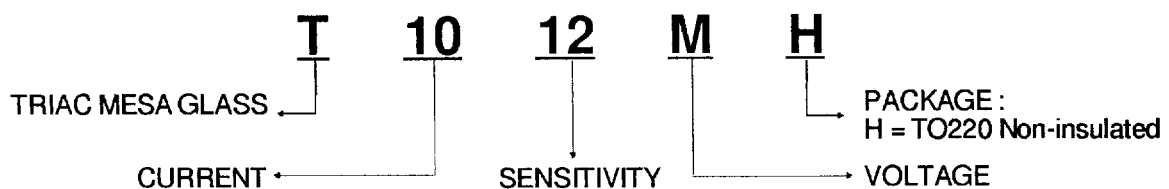


Fig.1 : Maximum RMS power dissipation versus RMS on-state current.

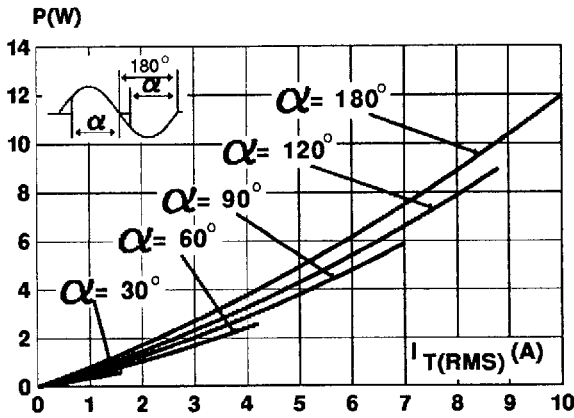


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact.

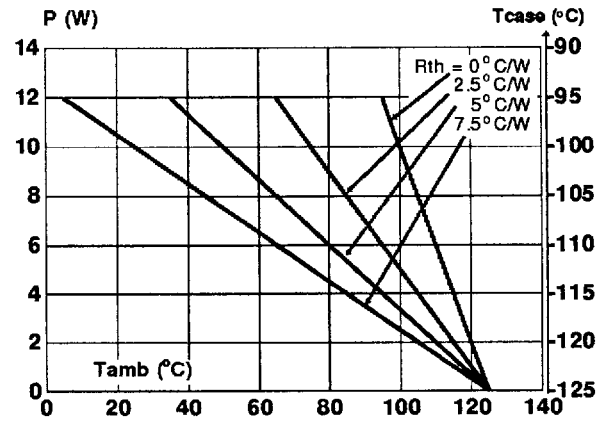


Fig.3 : RMS on-state current versus case temperature.

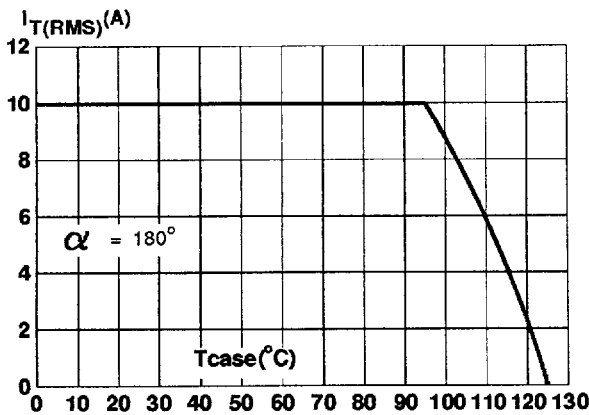


Fig.4 : Relative variation of thermal impedance versus pulse duration.

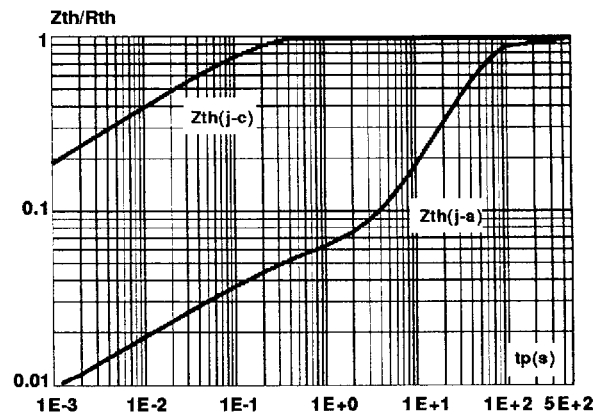


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

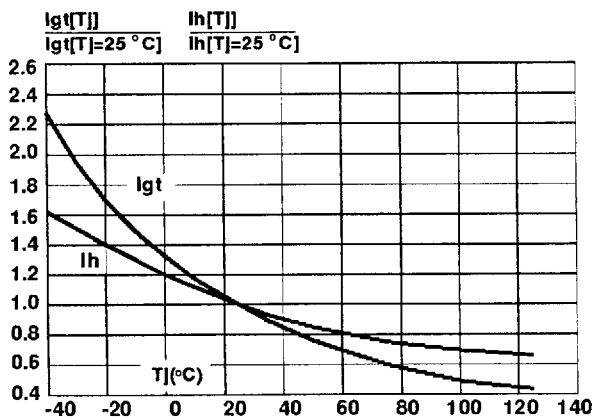
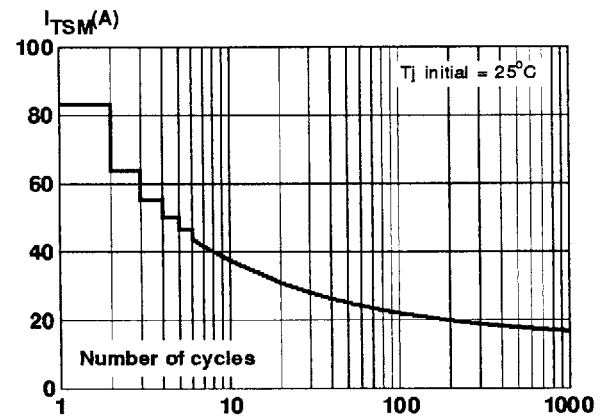


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.



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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 .

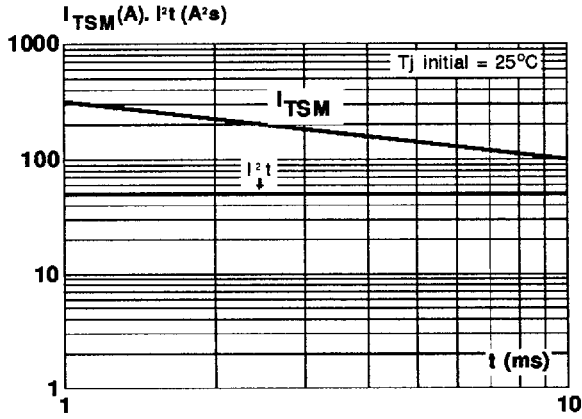
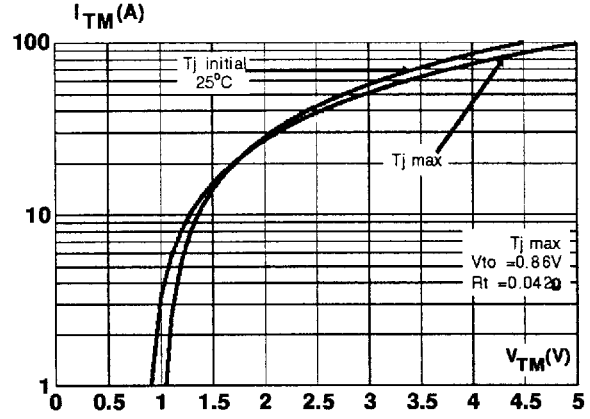
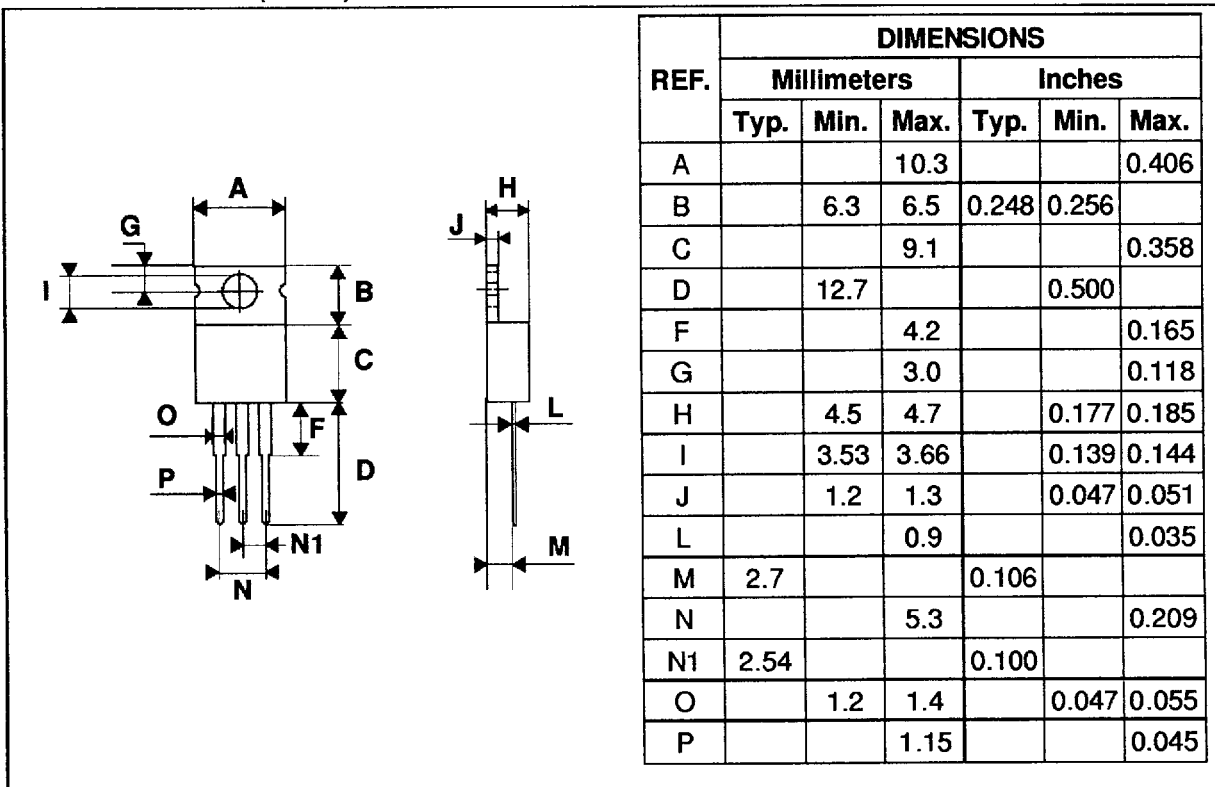


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA
TO220 Non-insulated (Plastic)



Marking : type number
Weight : 1.8 g

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