

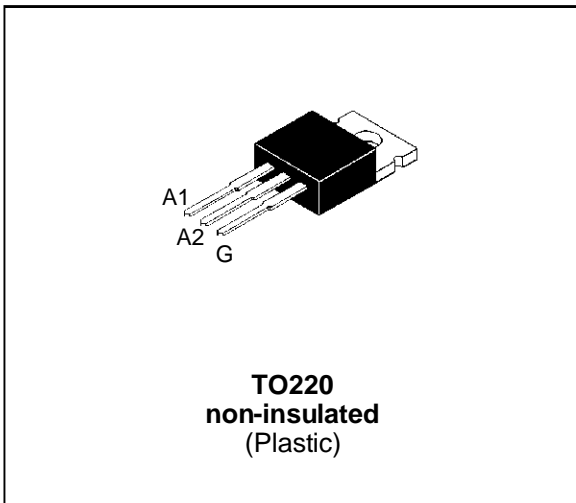
STANDARD TRIACS

FEATURES

- $I_{T(RMS)} = 12A$
- $V_{DRM} = 400V$ to $800V$
- High surge current capability

DESCRIPTION

The T12xxxH 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)	$T_c = 90^\circ C$	12	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25^\circ C$)	$t_p = 8.3$ ms	115	A
		$t_p = 10$ ms	110	
I^2t	I^2t Value for fusing	$t_p = 10$ ms	60	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 500$ mA $di_G/dt = 1$ A/ μs .	Repetitive $F = 50$ Hz	10	A/ μs
		Non Repetitive	50	
T_{stg} T_j	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ C$
TI	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

T12xxxH

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 =12V (DC) R _L =33Ω	T _j = 25°C	I-II-III	MAX	25	50	50	mA
			IV	MAX	25	50	75	
V _{GT}	V _D =12V (DC) R _L =33Ω	T _j = 25°C	I-II-III-IV	MAX	1.5			V
V _{GD}	V _D =V _{DRM} R _L =3.3kΩ	T _j = 125°C	I-II-III-IV	MIN	0.2			V
t _{gt}	V _D =V _{DRM} I _G = 500mA I _T = 17A dI _G /dt = 3A/μs	T _j = 25°C	I-II-III-IV	TYP	2			μs
I _H *	I _T = 250 mA Gate open	T _j = 25°C		MAX	25	50	75	mA
I _L	I _G = 1.2 I _{GT}	T _j = 25°C	I-III-IV	TYP	25	50	75	mA
			II	TYP	50	100	150	
V _{TM} *	I _{TM} = 17A t _p = 380μs	T _j = 25°C		MAX	1.5			V
I _{DRM} I _{RRM}	V _D = V _{DRM} V _R = V _{RRM}	T _j = 25°C		MAX	10			μA
		T _j = 110°C		MAX	2			mA
dV/dt *	V _D =67%V _{DRM} Gate open	T _j = 110°C		MIN	200	500	500	V/μs
(dV/dt) _c *	(dI/dt) _c = 5.3 A/ms	T _j = 110°C		MIN	2	5	10	V/μs

* For either polarity of electrode A₂ voltage with reference to electrode A₁

ORDERING INFORMATION

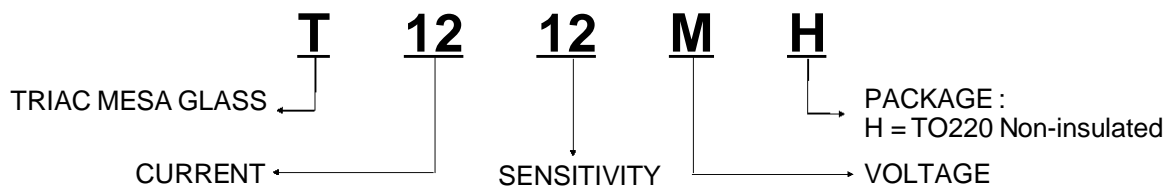


Fig.1 : Maximum RMS power dissipation versus RMS on-state current.

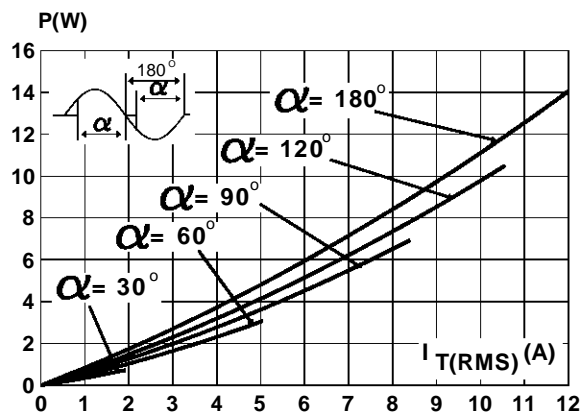


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact.

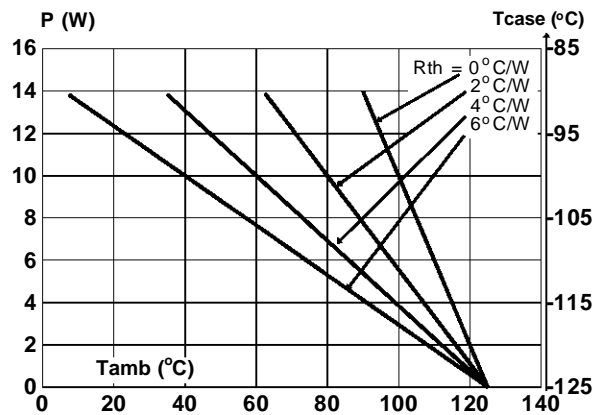


Fig.3 : RMS on-state current versus case temperature.

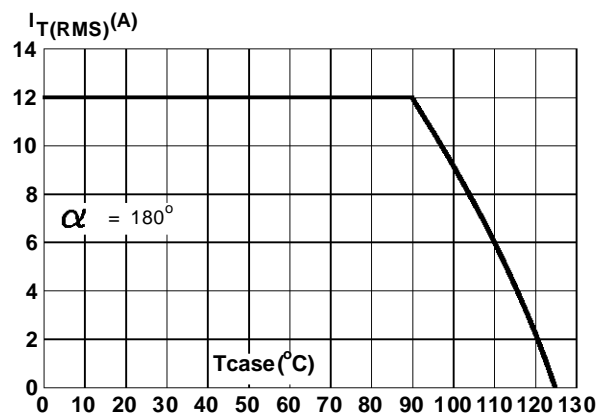


Fig.4 : Relative variation of thermal impedance versus pulse duration.

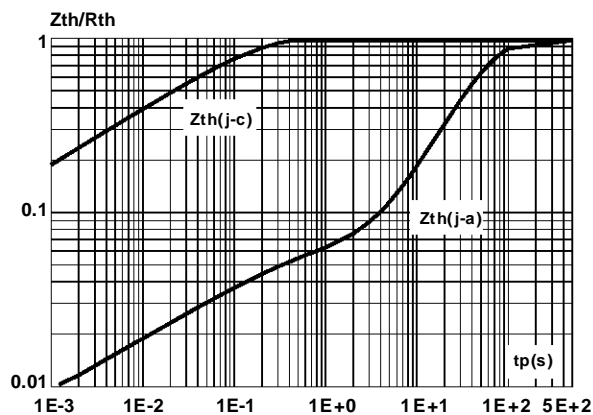


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

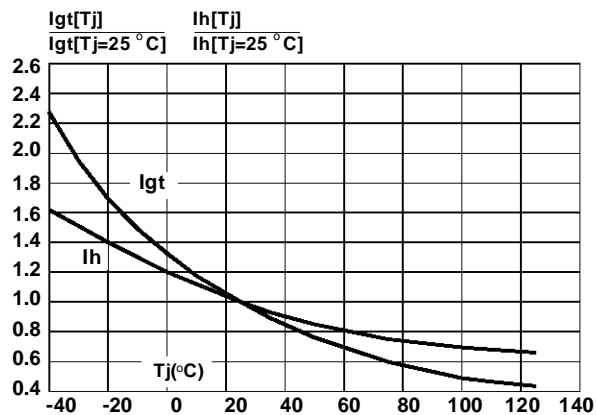
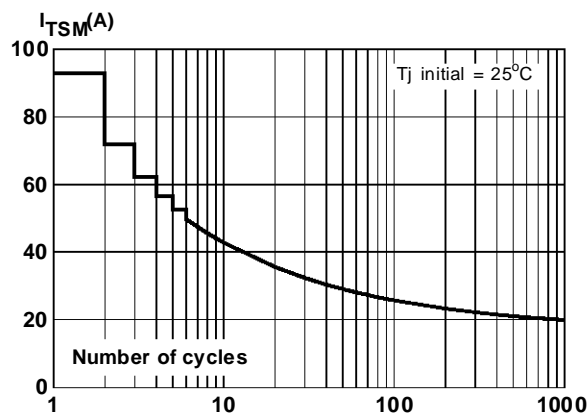


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.



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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 .

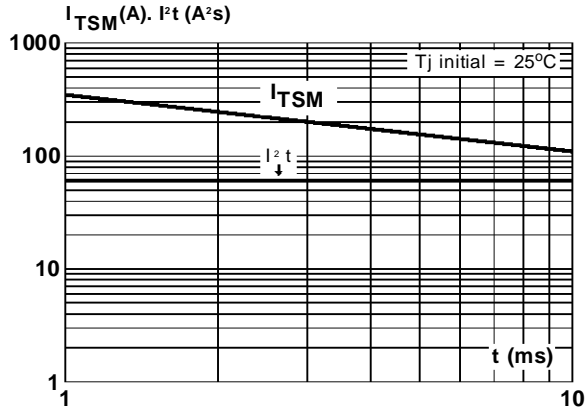
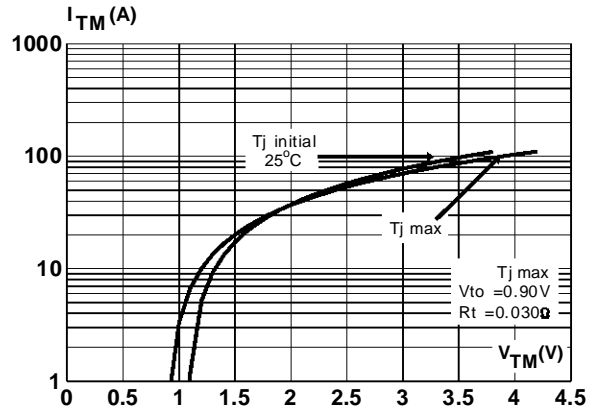


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA
TO220 Non-insulated (Plastic)

REF.	DIMENSIONS					
	Millimeters			Inches		
	Typ.	Min.	Max.	Typ.	Min.	Max.
A			10.3			0.406
B		6.3	6.5	0.248	0.256	
C			9.1			0.358
D		12.7			0.500	
F			4.2			0.165
G			3.0			0.118
H		4.5	4.7		0.177	0.185
I		3.53	3.66		0.139	0.144
J		1.2	1.3		0.047	0.051
L			0.9			0.035
M	2.7			0.106		
N			5.3			0.209
N1	2.54			0.100		
O		1.2	1.4		0.047	0.055
P			1.15			0.045

Marking : type number
Weight : 1.8 g

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