T12xxxH

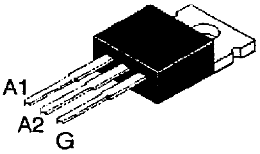
STANDARD TRIACS

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.



TO220
non-insulated
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	Tc= 90 °C	12	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	tp = 8.3 ms	115	A
		tp = 10 ms	110	
I^2t	I^2t Value for fusing	tp = 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	°C
Tl	Maximum lead temperature for soldering during 10s at 4.5mm from case		260	°C

Symbol	Parameter	Voltage				Unit
		D	M	S	N	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage T_j = 125°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	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)

$P_{G\,(AV)} = 1$ W $P_{GM} = 10$ W (tp = 20 µs) $I_{GM} = 4$ A (tp = 20 µs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity			Unit
					10	12	13	
I_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III	MAX	25	50	50	mA
			IV	MAX	25	50	75	
V_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III-IV	MAX	1.5			V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ	Tj= 125°C	I-II-III-IV	MIN	0.2			V
tgt	V_D=V_{DRM} I_G = 500mA I_T = 17A dI_G/dt = 3A/µs	Tj= 25°C	I-II-III-IV	TYP	2			µs
I_H *	I_T= 250 mA Gate open	Tj= 25°C		MAX	25	50	75	mA
I_L	I_G= 1.2 I_{GT}	Tj= 25°C	I-III-IV	TYP	25	50	75	mA
			II	TYP	50	100	150	
V_{TM} *	I_{TM}= 17A tp= 380µs	Tj= 25°C		MAX	1.5			V
I_{DRM} I_{RRM}	V_D = V_{DRM} V_R = V_{RRM}	Tj= 25°C		MAX	10			µA
		Tj= 110°C		MAX	2			mA
dV/dt *	VD=67%V_{DRM} Gate open	Tj= 110°C		MIN	200	500	500	V/µs
(dV/dt)c *	(dI/dt)c = 5.3 A/ms	Tj= 110°C		MIN	2	5	10	V/µs

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

ORDERING INFORMATION

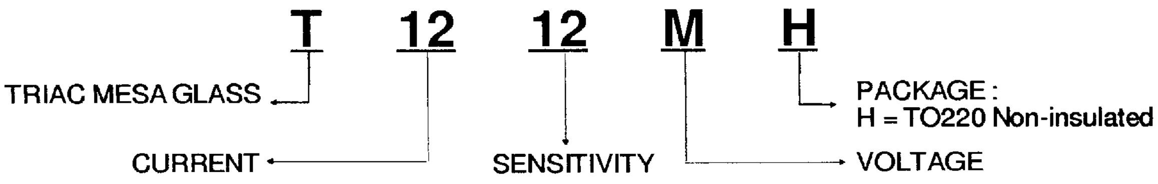


Fig.1 : Maximum RMS power dissipation versus RMS on-state current.

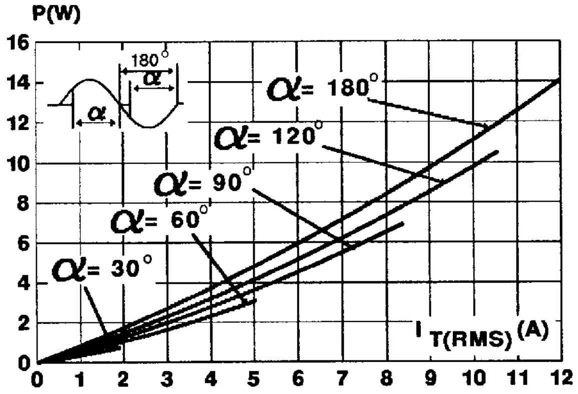


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact.

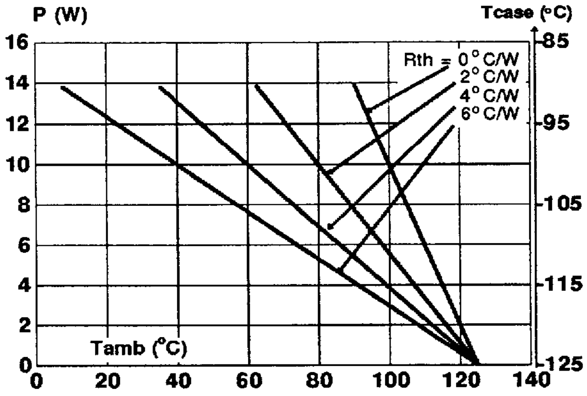


Fig.3 : RMS on-state current versus case temperature.

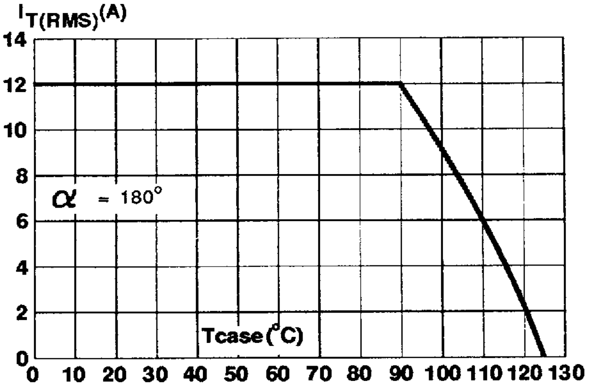


Fig.4 : Relative variation of thermal impedance versus pulse duration.

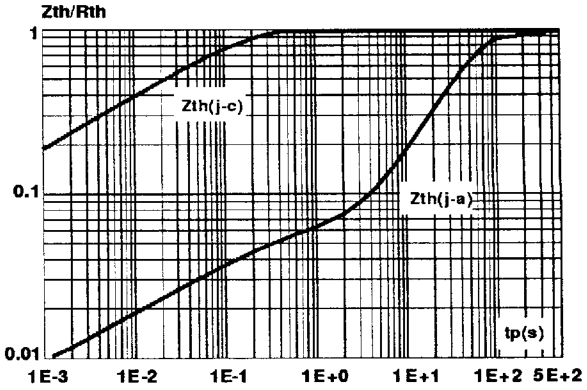


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

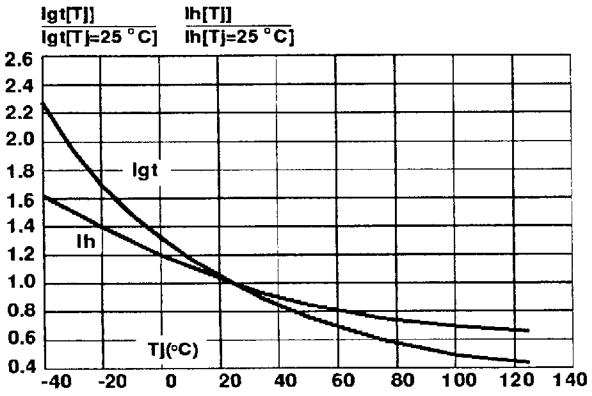


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

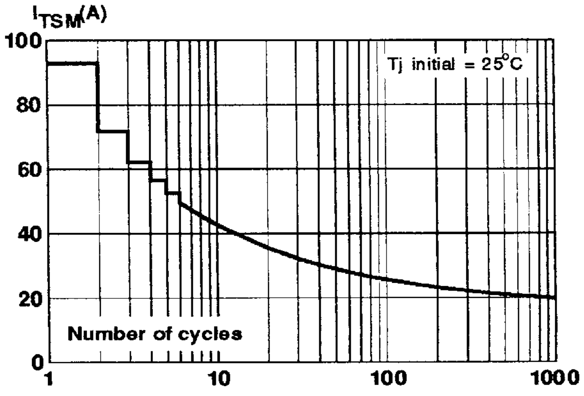


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : t ≤ 10ms, and corresponding value of I^2t.

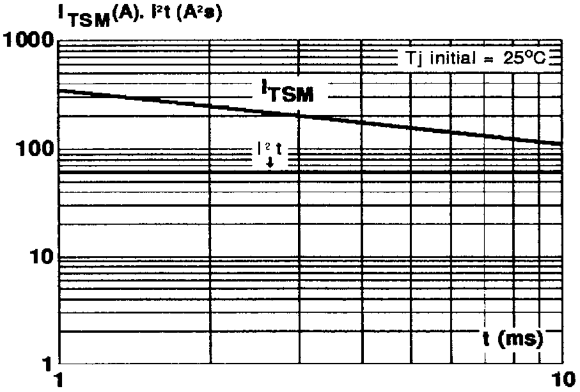
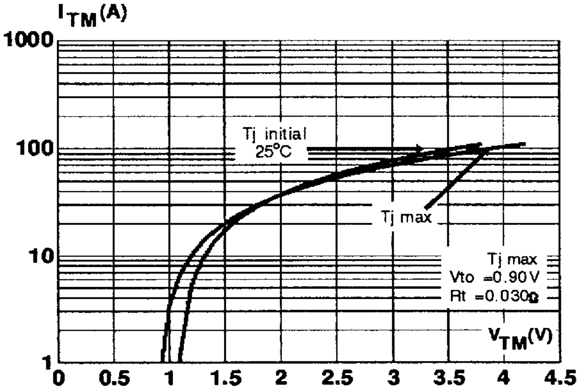
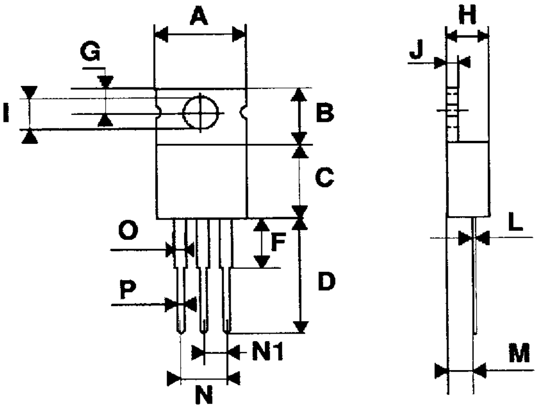


Fig.8 : On-state characteristics (maximum values).



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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