

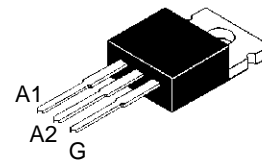
SENSITIVE GATE TRIACS

FEATURES

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

DESCRIPTION

The T05xxxH series of triacs uses a high performance MESA GLASS technology. These parts are intended for general purpose applications where gate high sensitivity is required.



TO220
non-insulated
 (Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_c = 100^\circ C$	5	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = $25^\circ C$)	$t_p = 8.3$ ms	42	A
		$t_p = 10$ ms	40	
I^2t	I^2t Value for fusing	$t_p = 10$ ms	8	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 50$ mA $di_G/dt = 0.1$ 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

T0505xH / T0509xH**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	60	°C/W
Rth(j-c)	Junction to case for D.C	5.3	°C/W
Rth(j-c)	Junction to case for A.C 360° conduction angle (F=50Hz)	4	°C/W

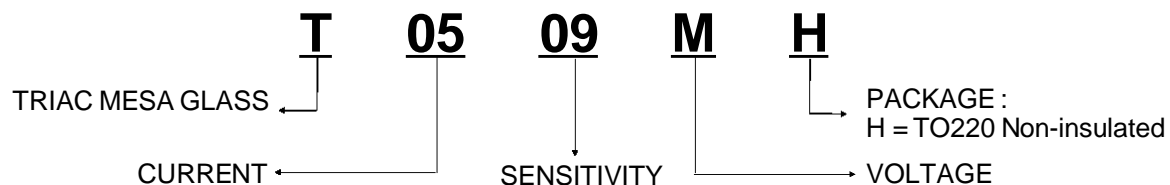
GATE CHARACTERISTICS (maximum values)

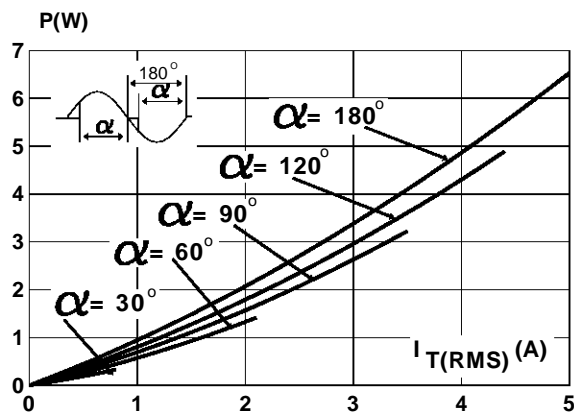
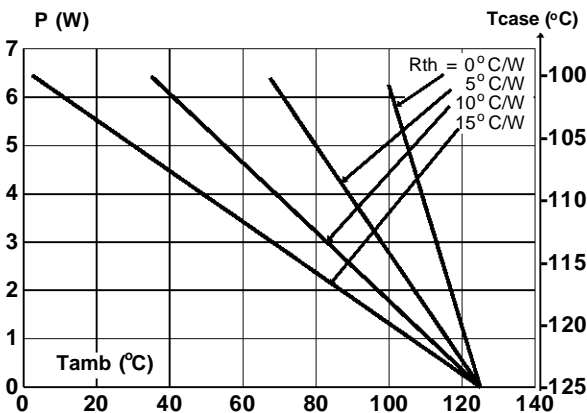
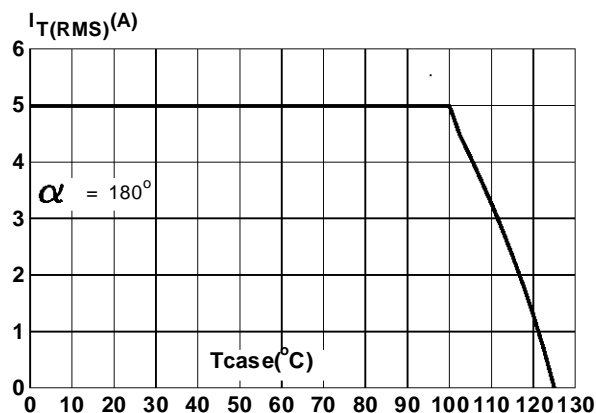
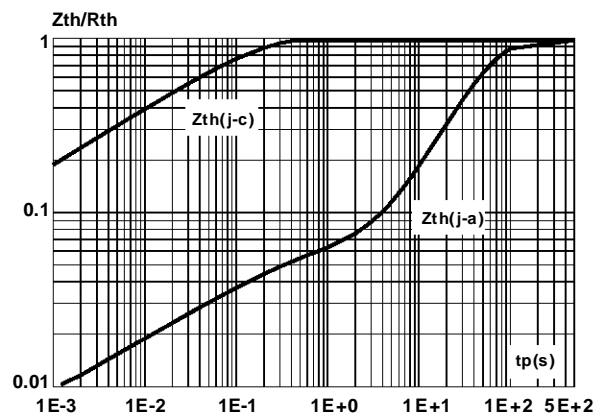
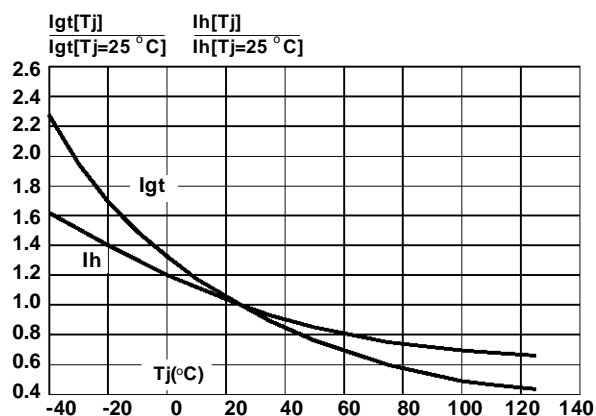
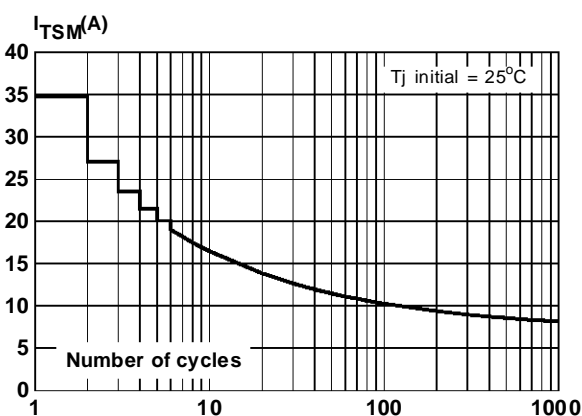
$P_G (AV) = 1 \text{ W}$ $P_{GM} = 10 \text{ W}$ ($t_p = 20 \mu\text{s}$) $I_{GM} = 4 \text{ A}$ ($t_p = 20 \mu\text{s}$)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity		Unit
					05	09	
I_{GT}	$V_D = 12\text{V (DC)}$ $R_L = 33\Omega$	$T_j = 25^\circ\text{C}$	I-II-III-IV	MAX	5	10	mA
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}	$V_D = V_{DRM}$ $R_L = 3.3k\Omega$	$T_j = 125^\circ\text{C}$	I-II-III-IV	MIN	0.2		V
tgt	$V_D = V_{DRM}$ $I_G = 40\text{mA}$ $I_T = 7.1\text{A}$ $dl_G/dt = 0.5\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$	I-II-III-IV	TYP	2		μs
I_H^*	$I_T = 50\text{mA}$ Gate open	$T_j = 25^\circ\text{C}$		MAX	5	10	mA
I_L	$I_G = 1.2 I_{GT}$	$T_j = 25^\circ\text{C}$	I-III-IV	TYP	5	10	mA
			II	TYP	10	20	
V_{TM}^*	$I_{TM} = 7.1\text{A}$ $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$		MAX	1.65		V
I_{DRM} I_{RRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$		MAX	5		μA
		$T_j = 110^\circ\text{C}$		MAX	1.5		mA
dV/dt *	$V_D = 67\% V_{DRM}$ Gate open	$T_j = 110^\circ\text{C}$		MIN		20	V/ μs
				TYP	10		
(dV/dt)c *	(dl/dt)c = 2.2 A/ms	$T_j = 110^\circ\text{C}$		TYP	1	2	V/ μs

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

ORDERING INFORMATION

T0505xH / T0509xH**Fig.1** : Maximum RMS power dissipation versus RMS on-state current.**Fig.2** : Correlation between maximum RMS power dissipation and maximum allowable temperature (T_{amb} and T_{case}) 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.

T0505xH / T0509xH

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 .

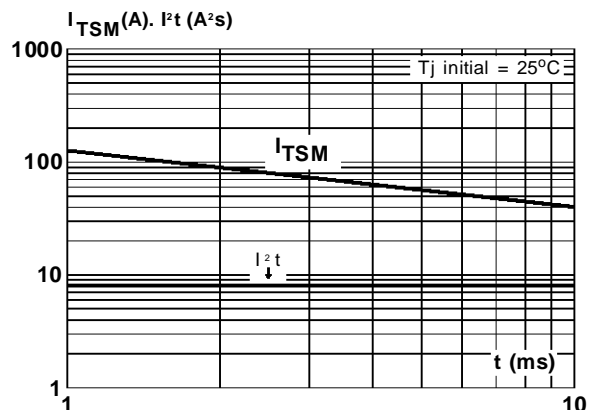
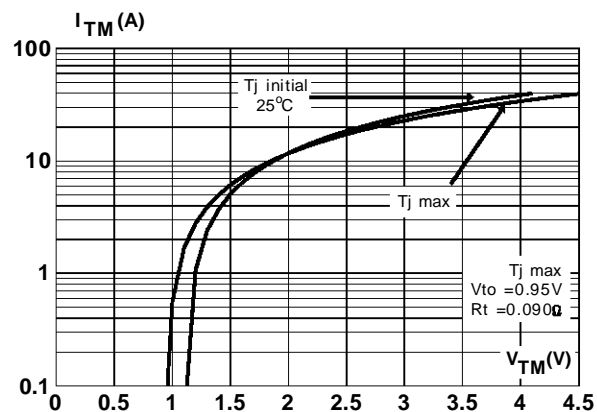


Fig.8 : On-state characteristics (maximum values).



T0505xH / T0509xH**PACKAGE MECHANICAL DATA**
T0220 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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