



T0505xH
T0509xH

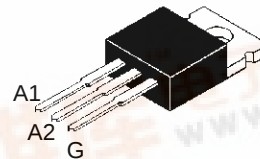
SENSITIVE GATE TRIACS

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.

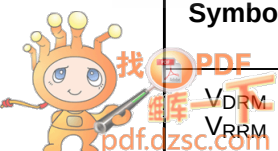


TO220
non-insulated
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	$T_c = 100\text{ }^{\circ}\text{C}$	5	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t_p = 8.3\text{ ms}$	42	A
		$t_p = 10\text{ ms}$	40	
I^2t	I^2t Value for fusing	$t_p = 10\text{ ms}$	8	A^2s
di/dt	Critical rate of rise of on-state current $I_G = 50\text{ mA}$ $di_G/dt = 0.1\text{ A}/\mu\text{s}$.	Repetitive $F = 50\text{ Hz}$	10	$A/\mu\text{s}$
		Non Repetitive	50	
T_{stg} T_j	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^{\circ}\text{C}$
TI	Maximum lead temperature for soldering during 10s at 4.5mm from case		260	$^{\circ}\text{C}$

Symbol	Parameter	Voltage				Unit
		D	M	S	N	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage $T_j = 125^{\circ}\text{C}$	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 W P_{GM} = 10 W (tp = 20 μ s) I_{GM} = 4 A (tp = 20 μ 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
tgt	$V_D=V_{DRM}$ $I_G=40mA$ $I_T=7.1A$ $dI_G/dt=0.5A/\mu s$	$T_j=25^\circ C$	I-II-III-IV	TYP	2		μs
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}^*	$I_{TM}=7.1A$ tp= 380 μs	$T_j=25^\circ C$		MAX	1.65		V
I_{DRM} I_{RRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$		MAX	5		μA
		$T_j=110^\circ C$		MAX	1.5		mA
dV/dt *	$V_D=67\%V_{DRM}$ Gate open	$T_j=110^\circ C$		MIN		20	V/ μs
				TYP	10		
(dV/dt)c *	(dI/dt)c = 2.2 A/ms	$T_j=110^\circ C$		TYP	1	2	V/ μs

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

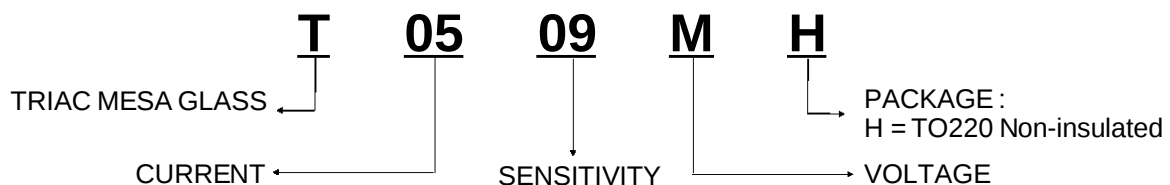
ORDERING INFORMATION

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

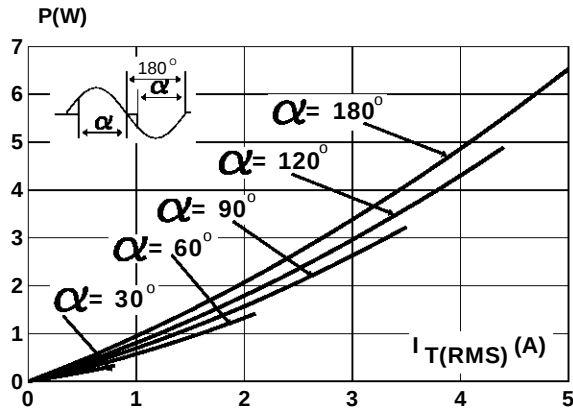


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

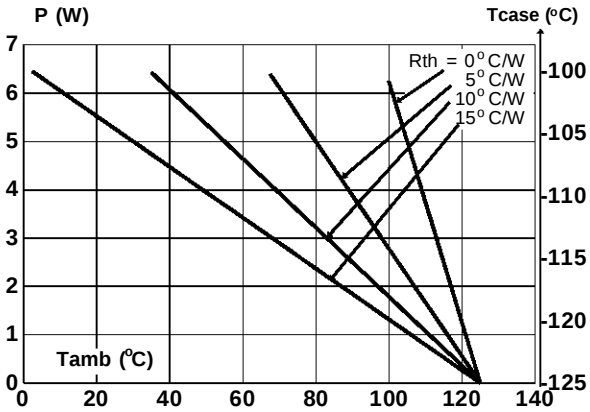


Fig.3 : RMS on-state current versus case temperature.

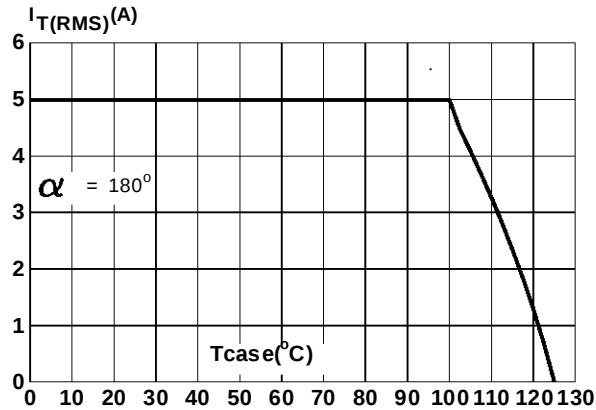


Fig.4 : Relative variation of thermal impedance versus pulse duration.

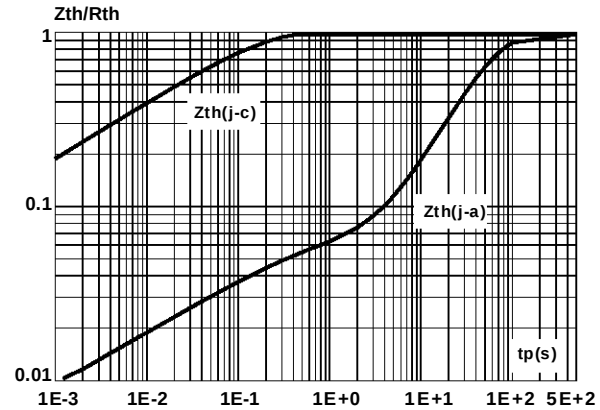


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

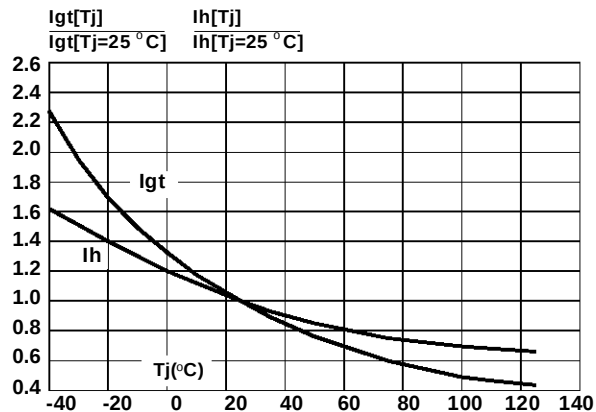
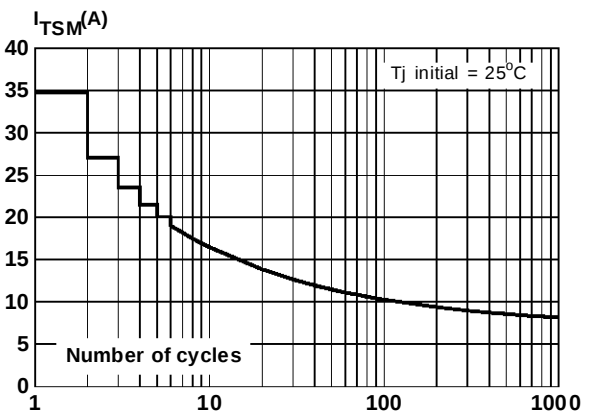


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.



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 .

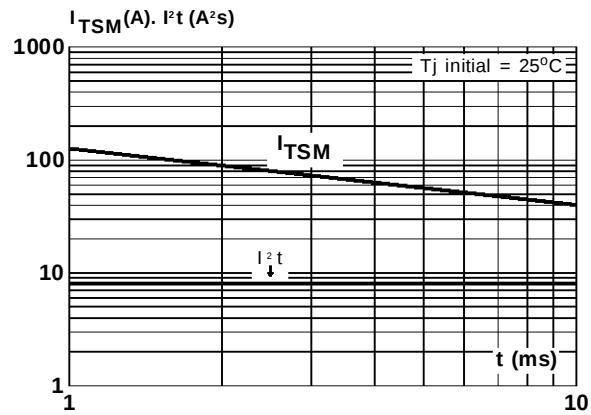
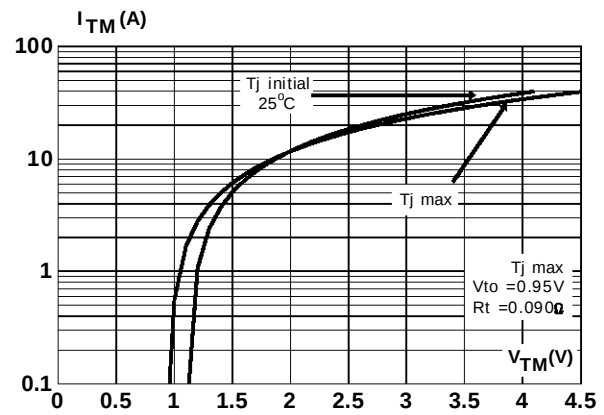


Fig.8 : On-state characteristics (maximum values).



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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