

**T0650H-6H 6A TRIAC**

Rev.A.1.0

**DESCRIPTION:**

The T0650H-6H triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Compared to traditional triacs, T0650H-6H provides a very high switching capability up to junction temperatures of 150°C. From T2 terminals to external heatsink. Package TO-251 is RoHS compliant.

**MAIN FEATURES****ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-150	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c=119^\circ\text{C}$ )	$I_{T(RMS)}$	6	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	60	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		66	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	18	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=150^\circ\text{C}$ )	$di/dt$	100	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=150^\circ\text{C}$ )	$I_{GM}$	4	A
Average gate power dissipation ( $T_j=150^\circ\text{C}$ )	$P_{G(AV)}$	1	

Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	4	kV
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**ELECTRICAL CHARACTERISTICS** ( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V$ $R_L=33$	- -	MAX.	50	mA
$V_{GT}$		- -	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=150$ $R_L=3.3K$	- -	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	-	MAX.	70	mA
				100	
$I_H$	$I_T=100mA$		MAX.	50	mA
$dV/dt$	$V_D=400V$ Gate Open $T_j=150$		MIN.	1500	V/ $\mu s$
$(dI/dt)_c$	$(dV/dt)_c=20V/\mu s$ , $T_j=150$		MIN.	5	A/ms
$t_{on}$	$I_G=80mA$ $I_A=400mA$ $I_R=40mA$ $T_j=25$		TYP.	5	$\mu s$
$t_{off}$				50	

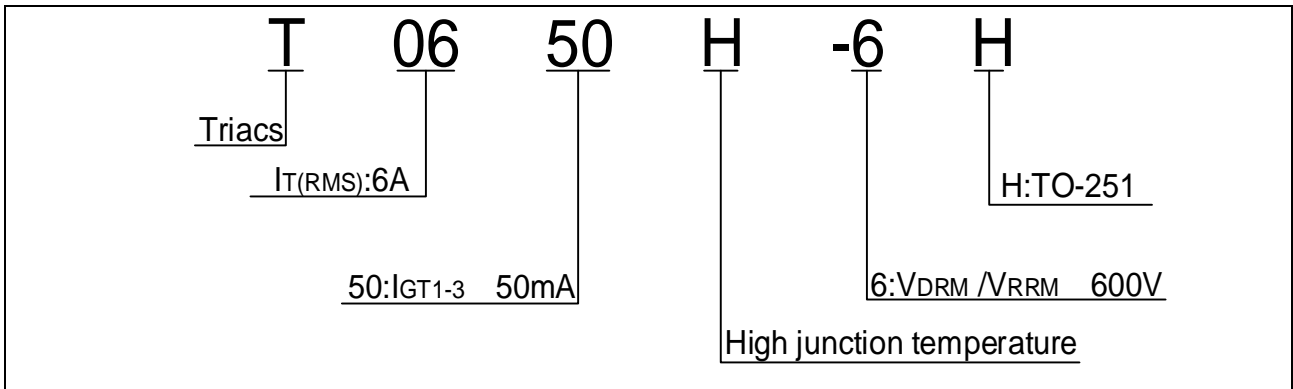
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=8.5A$ $t_p=380\mu s$	$T_j=25$	1.4	V
$V_{TO}$	Threshold voltage	$T_j=150$	0.8	V
$R_D$	Dynamic resistance	$T_j=150$	63	m
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=150$	0.8	mA

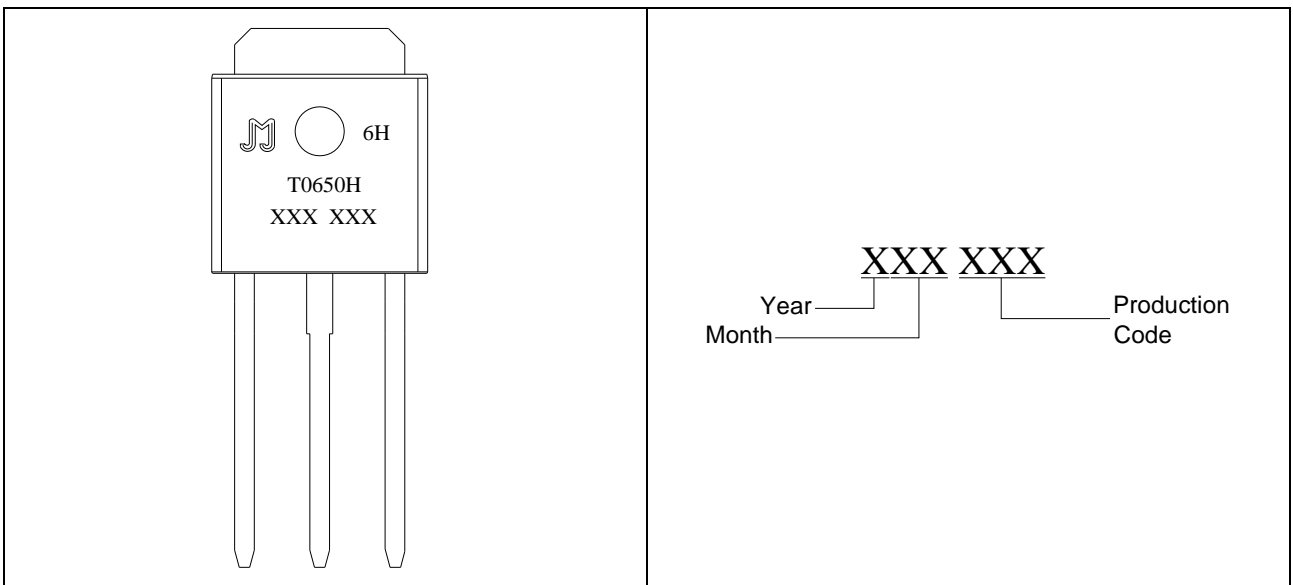
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	4	$^{\circ}W$
$R_{th(j-a)}$	junction to ambient (AC)	120	$^{\circ}W$

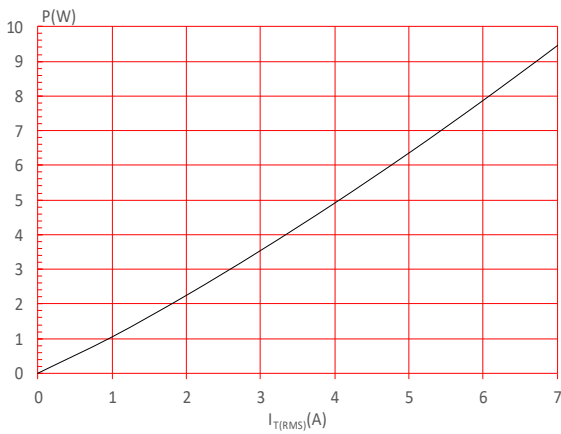
ORDERING INFORMATION



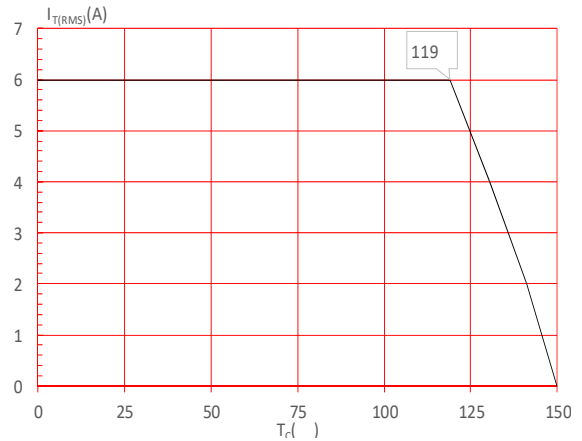
MARKING



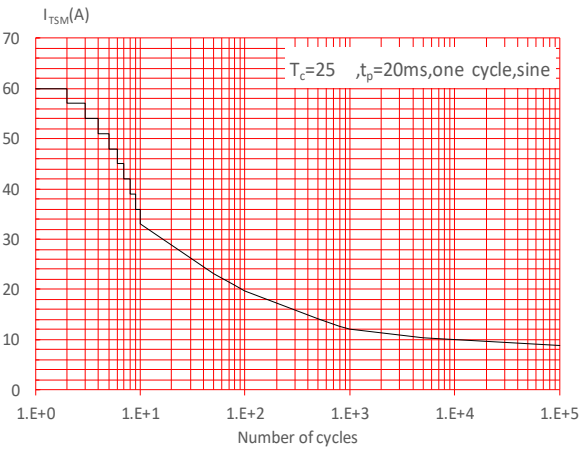
**FIG.1** Maximum power dissipation versus RMS on-state current



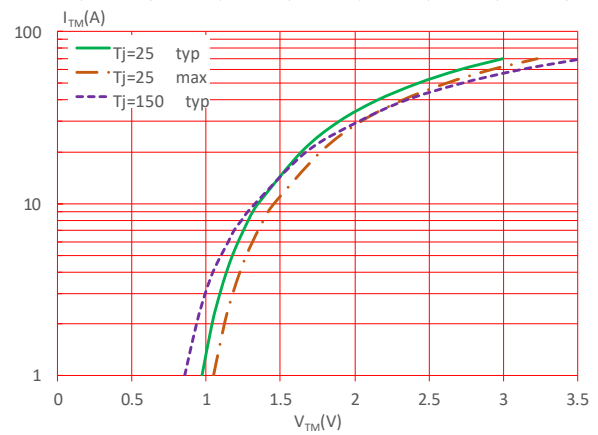
**FIG.2:** RMS on-state current versus case temperature



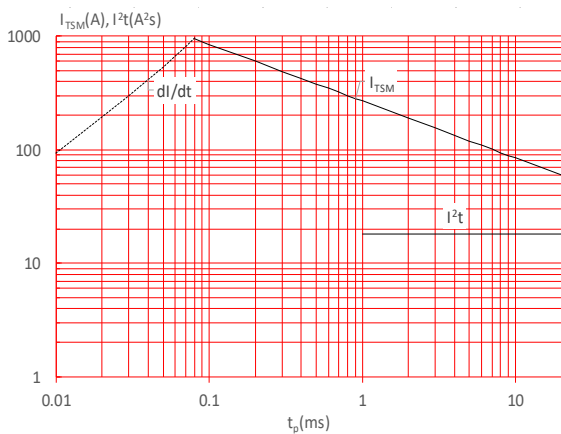
**FIG.3:** Surge peak on-state current versus number of cycles



**FIG.4:** On-state characteristics



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 100\text{A}/\mu\text{s}$ )



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

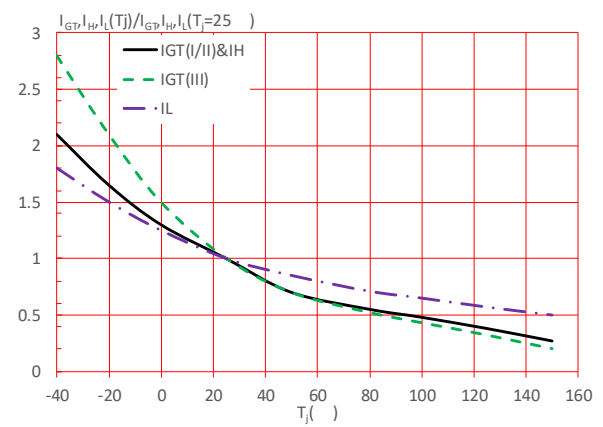
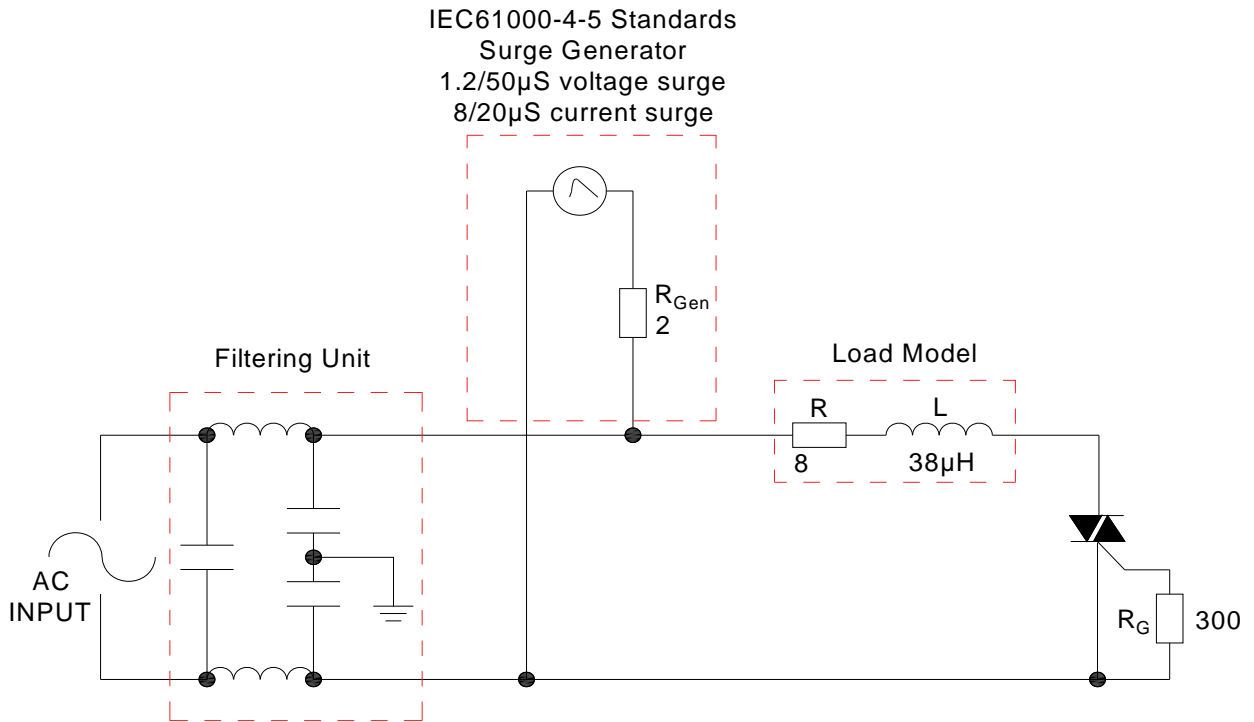


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



## SHAPING AND SOLDERING PARAMETERS

Refer to Instructions for installation of plastic-sealed in-line power devices released by JieJie

**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		- -			
T0650H-6H	600	50	TO-251	80	Tube


**Document Revision History**

Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated



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