



## DESCRIPTION:

The T0820H-8C 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, T0820H-8C provides a very high switching capability up to junction temperatures of 150°C. From T2 terminals to external heatsink. Package TO-220C is RoHS compliant.

## MAIN FEATURES

Symbol	Value	Unit	
$I_{T(RMS)}$	8	A	aB

## ABSOLUTE MAXIMUM RATINGS

Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-150	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	800	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	800	V
RMS on-state current ( $T_c = 134^\circ\text{C}$ )	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	80	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		88	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	32	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=150^\circ\text{C}$ )	$di/dt$	80	$\text{A}/\mu\text{s}$
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	W
Peak gate power	$P_{GM}$	10	W



Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	3	kV
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### ELECTRICAL CHARACTERISTICS ( $T_j=25$ unless otherwise specified)

$I_{GT}$	$V_D=12V R_L=33$	- -	MAX.	20	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.	40	mA
				55	
$I_H$	$I_T=100mA$		MAX.	30	mA
$dV/dt$	$V_D=540V$ Gate Open $T_j=150$		MIN.	800	V/ $\mu s$
$(dI/dt)_c$	$(dV/dt)_c=20V/\mu s, T_j=150$		MIN.	3	A/ms
$t_{on}$	$I_G=40mA I_A=200mA I_R=20mA$ $T_j=25$		TYP.	3	$\mu s$
$t_{off}$				30	

### STATIC CHARACTERISTICS

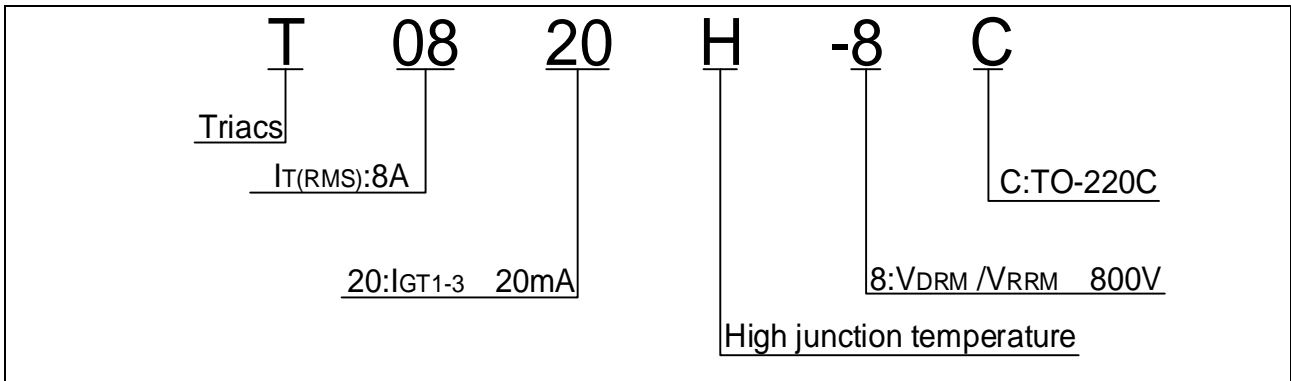
$V_{TM}$	$I_{TM}=11A t_p=380\mu s$	$T_j=25$	1.4	V
$V_{TO}$	Threshold voltage	$T_j=150$	0.79	V
$R_D$	Dynamic resistance	$T_j=150$	51	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	$\mu A$
$I_{RRM}$		$T_j=150$	1.5	mA

### THERMAL RESISTANCES

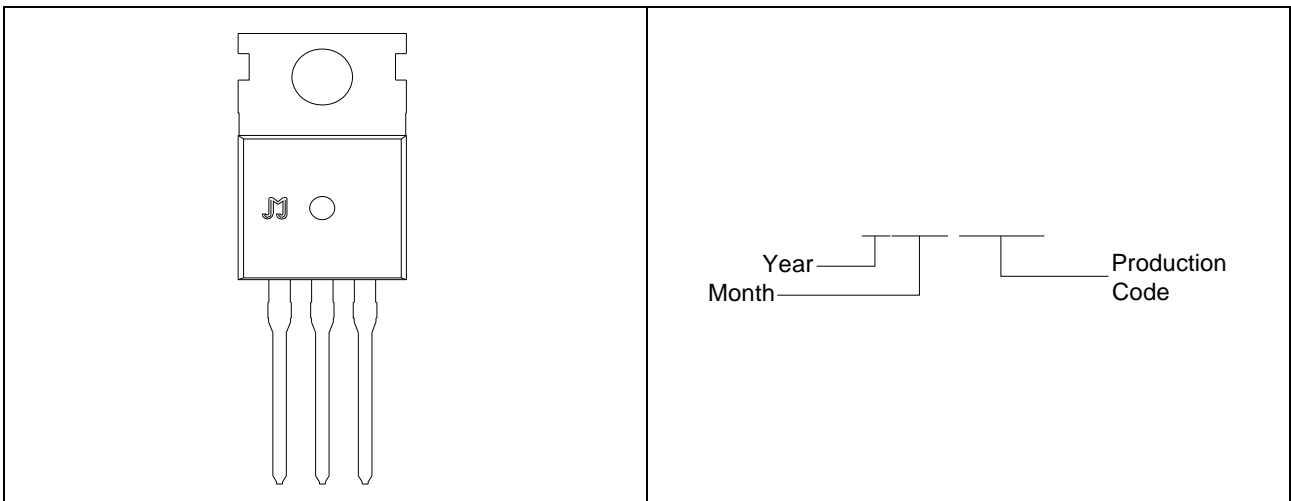
$R_{th(j-c)}$	junction to case (AC)	1.5	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W



## ORDERING INFORMATION

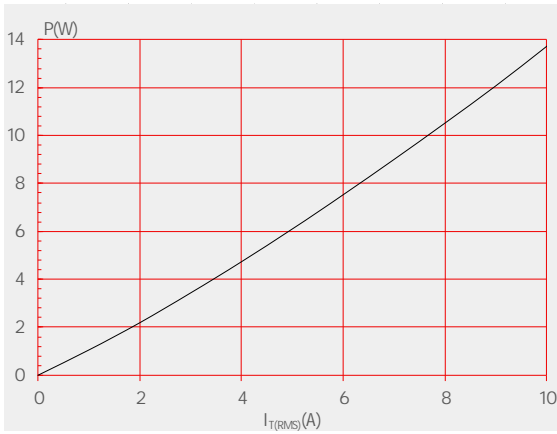


## MARKING

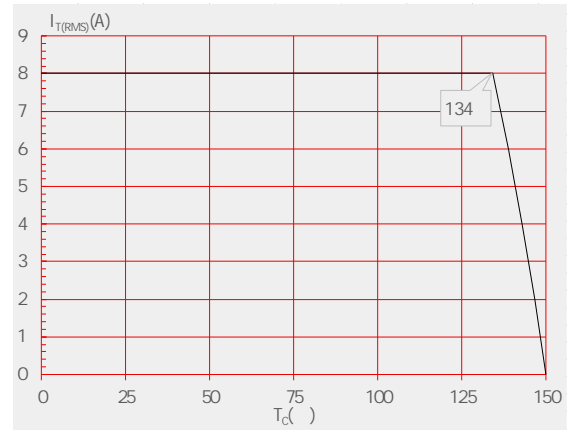




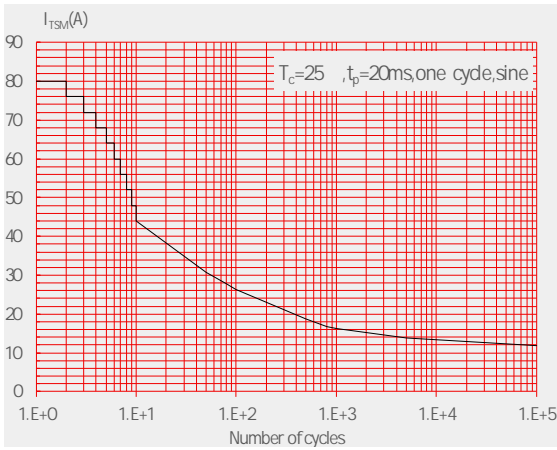
Maximum power dissipation versus RMS on-state current



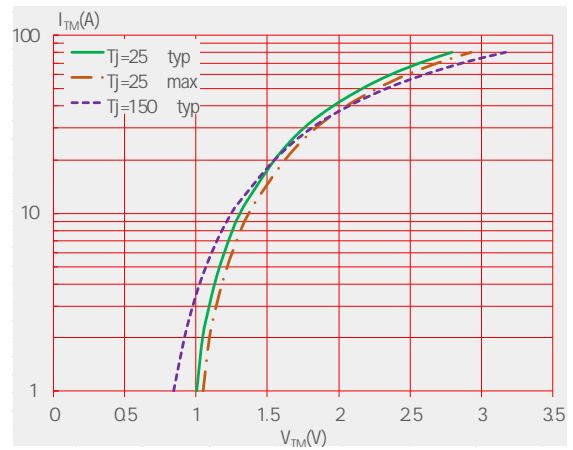
RMS on-state current versus case temperature



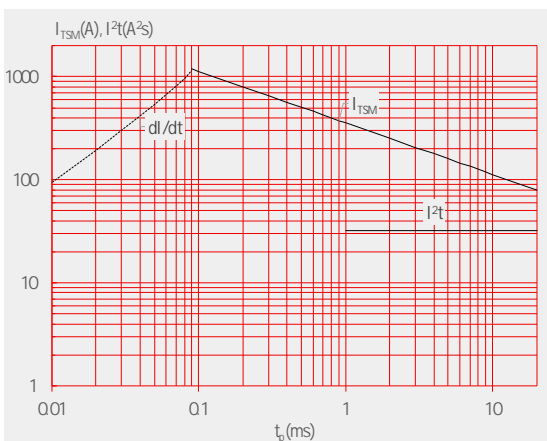
Surge peak on-state current versus number of cycles



On-state characteristics



Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 80\text{A}/\mu\text{s}$ )



Relative variations of gate trigger current, holding current and latching current versus junction temperature

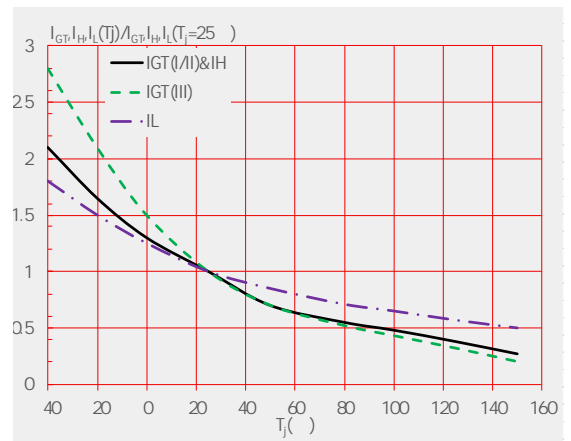
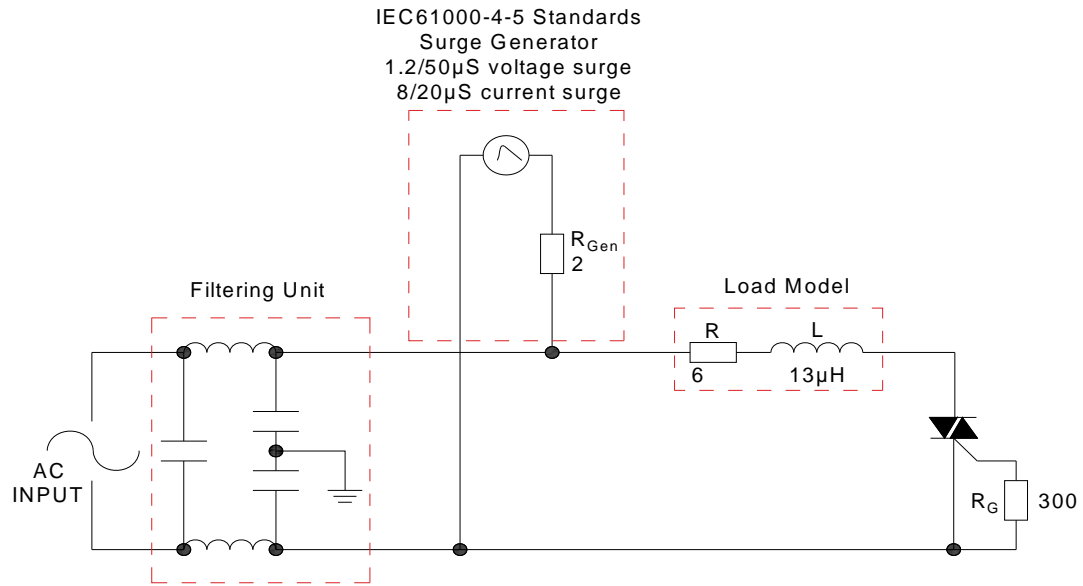




FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



## SHAPING AND SOLDERING PARAMETERS

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



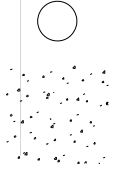
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## ORDERING INFORMATION


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



## PACKAGE MECHANICAL DATA





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