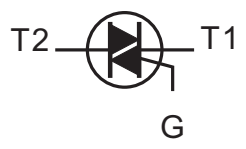
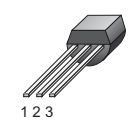


### Description

Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

<p>Symbol</p> 		<p>Simplified outline</p>  <p>TO-92</p>	
Pin	Description		
1	Main terminal 1 (T1)		
2	gate (G)		
3	Main terminal 2 (T2)		

### Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

### Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 0.8 A

SYMBOL	PARAMETER	Value	Unit
$V_{DRM}$	Repetitive peak off-state voltages	600	V
$I_{T(RMS)}$	RMS on-state current (full sine wave)	0.8	A
$I_{TSM}$	Non-repetitive peak on-state current	9	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	Value	UNIT
Rth(j-l)	Junction to lead (AC)	-	-	-	60	°C/W
Rth j-a	Junction to ambient	-	-	-	150	°C/W



# Z00607MA

## Sensitive Gate Triacs

HAOPIN MICROELECTRONICS CO.,LTD.

Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT		
$V_{DSM}/V_{RSM}$			-	-	V		
$I_{T(RMS)}$	RMS on-state current	Full sine wave; $T_j=50^\circ\text{C}$	-	0.8	A		
$I_{TSM}$	Non repetitive surge peak on-state current	full cycle, $T_j$ initial= $25^\circ\text{C}$	F=50 Hz t=20ms	-	9	A	
			F=60Hz t=16.7ms	-	9.5	A	
$I^2t$	$I^2t$ Value for fusing	$T_p=10\text{ms}$	-	0.45	$\text{A}^2\text{S}$		
$DI/dt$	Critical rate of rise of on-state current	$I_G=2x I_{GT}, tr \leq 100\text{ns}$	F=120Hz	$T_j=110^\circ\text{C}$	-	20	$\text{A}/\mu\text{s}$
$I_{GM}$	Peak gate current		tp=20us	$T_j=110^\circ\text{C}$	-	1	A
$I_{DRM}$	$V_{DRM}=V_{RRM}=600\text{V}$			$T_j=25^\circ\text{C}$	-	5	$\mu\text{A}$
$I_{RRM}$	$V_{DRM}=V_{RRM}=600\text{V}$			$T_j=110^\circ\text{C}$	-	0.1	mA
$P_{G(AV)}$	Average gate power			$T_j=110^\circ\text{C}$	-	0.1	W
$T_{stg}$	Storage temperature range		-40	150		$^\circ\text{C}$	
$T_j$	Operating junction Temperature range		-40	110		$^\circ\text{C}$	

$T_j=25^\circ\text{C}$  unless otherwise stated

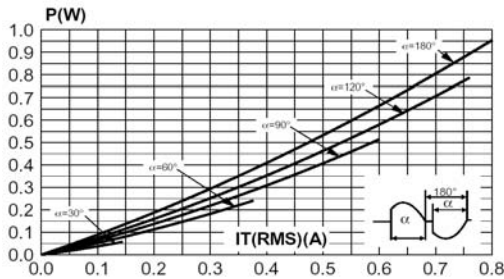
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
$I_{GT1}$ $V_{GT}$		$V_D=12\text{V}; RL=33\Omega$				
			I-II-III IV ALL	-	-	5 7 1.3 mA mA V
$I_L$		$I_G=1.2 I_{GT}$				
			I-III-IV II	- -	- -	10 20 mA mA
$I_{H2}$		$I_T=200\text{mA}$				
$V_{GD}$		$V_D=V_{DRM} R_L=3.3\text{K}\Omega T_j=110^\circ\text{C}$				
		ALL	0.2	-	-	V
$dV/dt2$		$V_D=67\%V_{DRM}$ gate open; $T_j=110^\circ\text{C}$	10	-	-	V/us
$(Dv/dt)c(2)$		$(DI/dt)c=0.35\text{A/ms}; T_j=110^\circ\text{C}$	1.5	-	-	V/us

### Dynamic Characteristics

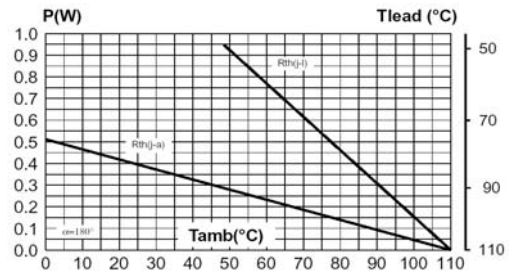
$V_{TM}(2)$	$I_{TM}=1.1\text{A}$ tp=380us	$T_j=25^\circ\text{C}$			1.5	V
$V_{to}$ $R_d$	Threshold voltage Dynamic resistance	$T_j=110^\circ\text{C}$ $T_j=110^\circ\text{C}$			0.95 420	V m $\Omega$

#### Description

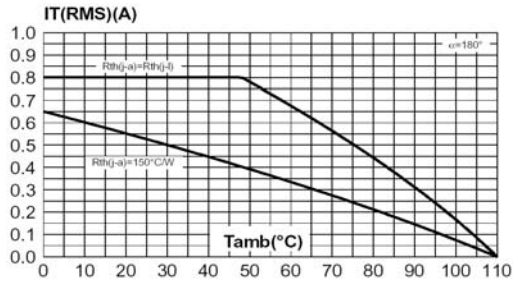
**Fig 1:** Maximum power dissipation versus RMS on-state current.



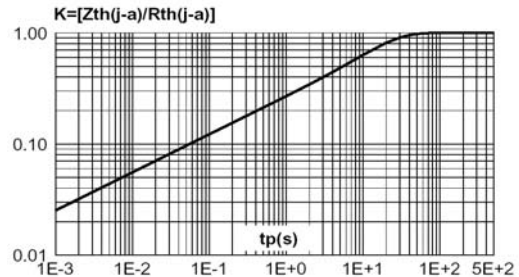
**Fig 2:** Correlation between maximum power dissipation and maximum allowable temperatures ( $T_{amb}$  and  $T_{lead}$ ).



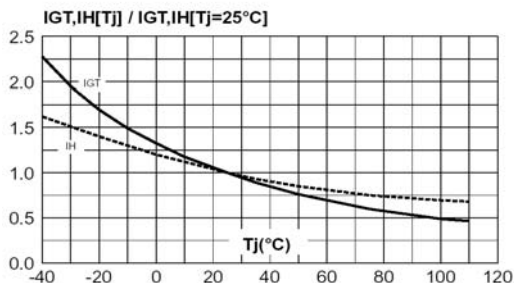
**Fig 3:** RMS on-state current versus ambient temperature.



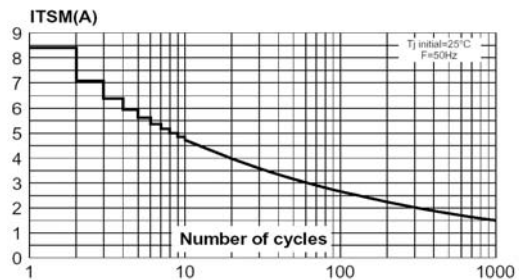
**Fig 4:** Relative variation of thermal impedance junction to ambient versus pulse duration.



**Fig 5:** Relative variation of gate trigger current and holding current versus junction temperature (typical values).

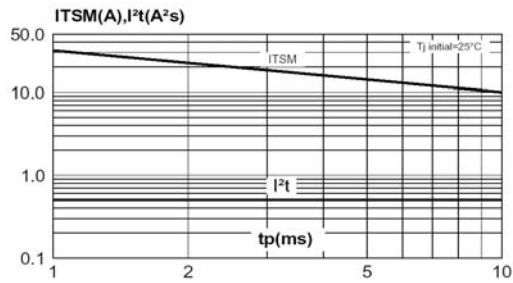


**Fig 6:** Non repetitive surge peak on-state current versus number of cycles.

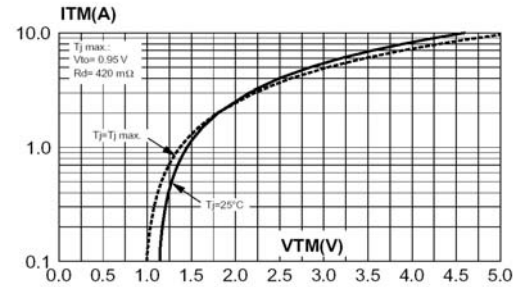


### Description

**Fig 7:** Non repetitive surge peak on-state current for a sinusoidal pulse, with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .



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

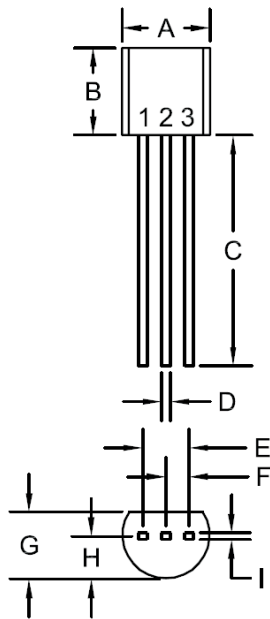


MECHANICAL DATA

Dimensions in mm

Net Mass: 0.2 g

TO-92



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

R1