




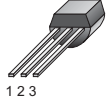
60A08

Sensitive Gate Triacs

HAOPIN MICROELECTRONICS CO.,LTD.

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
$R_{th(j-l)}$	Junction to lead (AC)	-	-	-	60	°C/W
$R_{th(j-a)}$	Junction to ambient	-	-	-	150	°C/W



60A08

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°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	A^2S	
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	μA	
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}		$V_D=12\text{V}; R_L=33\ \Omega$ 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}		$I_T=200\text{mA}$	-	-	5	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 Ω



60A08

Sensitive Gate Triacs

HAOPIN MICROELECTRONICS CO.,LTD.

Description

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

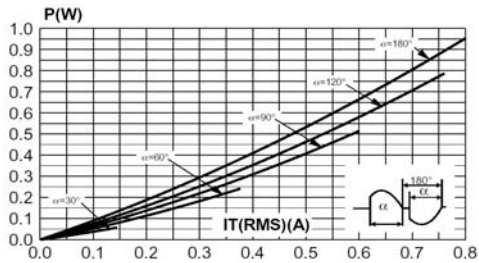


Fig 2: Correlation between maximum power dissipation and maximum allowable temperatures (T_{amb} and T_{lead}).

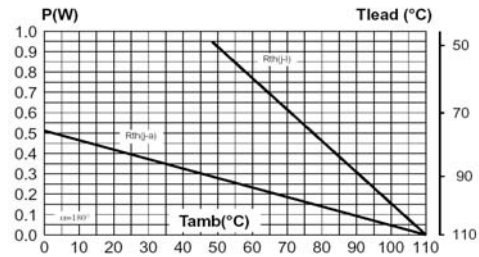


Fig 3: RMS on-state current versus ambient temperature.

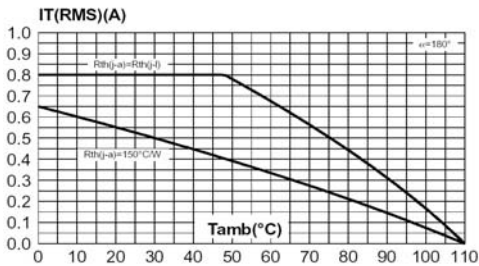


Fig 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

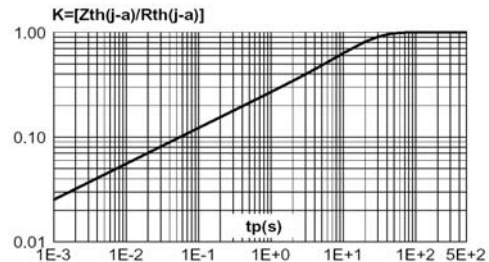


Fig 5: Relative variation of gate trigger current and holding current versus junction temperature (typical values).

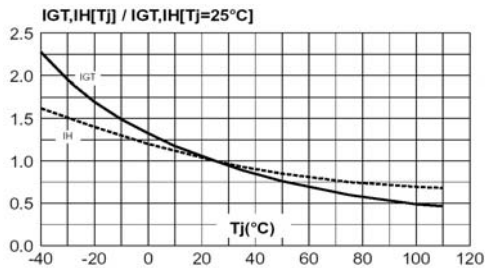
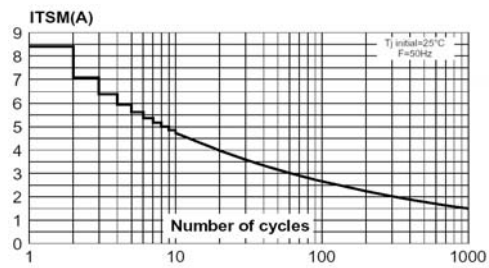


Fig 6: Non repetitive surge peak on-state current versus number of cycles.





60A08

Sensitive Gate Triacs

HAOPIN MICROELECTRONICS CO.,LTD.

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 .

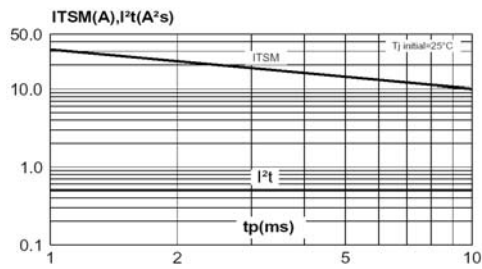
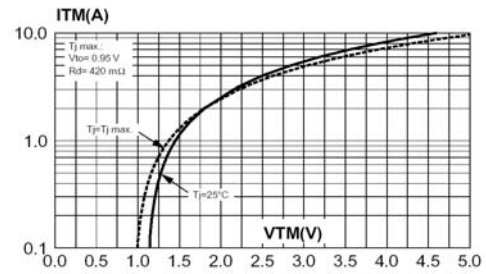


Fig 8: On-state characteristics (maximum values).





60A08

Sensitive Gate Triacs

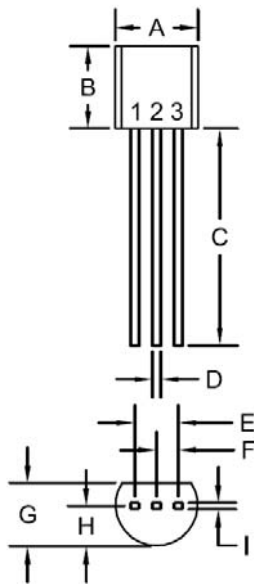
HAOPIN MICROELECTRONICS CO.,LTD.

MECHANICAL DATA

Dimensions in mm

Net Mass: 0.2 g

TO-92



SYMBOL	DIMENSIONS	
	INCHES	MILLIMETERS
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