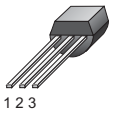
Z00607MA

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.

Symbol	Simplified outline
	 TO-92

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

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°C			-	0.8	A
I_{TSM}	Non repetitive surge peak on-statecurrent	full cycle, Tj 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=10ms			-	0.45	A^2S
DI/dt	Critical rate of rise of on-state current	IG=2x I_{GT},tr<=100ns	$F=120H_Z$	Tj=110°C	-	20	A/μs
I_{GM}	Peak gate current		tp=20us	Tj=110°C	-	1	A
I_{DRM}	V_{DRM}=V_{RRM}=600V			Tj=25°C	-	5	μA
I_{RRM}	V_{DRM}=V_{RRM}=600V			Tj=110°C	-	0.1	mA
$P_{G(AV)}$	Average gate power			Tj=110°C	-	0.1	W
T_{stg}	Storage temperature range				-40	150	°C
T_j	Operating junction Temperature range				-40	110	°C

T_J=25°C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS		MIN	TYP	MAX	UNIT
Static characteristics							
I_{GT1} V_{GT}		V_D=12V; RL=33Ω	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=200mA		-	-	5	mA
V_{GD}		V_D=V_{DRM} R_L=3.3KΩ Tj=110°C	ALL	0.2	-	-	V
dV/dt2		V_D=67%V_{DRM} gate open;T_J=110°C		10	-	-	V/us
(Dv/dt)c(2)		(DI/dt)c=0.35A/ms;T_J=110°C		1.5	-	-	V/us

Dynamic Characteristics

V_{TM}(2)	I_{TM}=1.1A tp=380us	T_J=25°C			1.5	V
V_{to} R_d	Threshold voltage Dynamic resistance	T_J=110°C T_J=110°C			0.95 420	V mΩ

Description

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

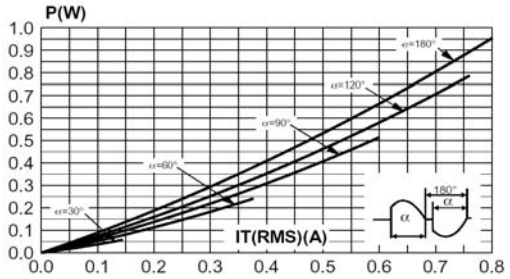


Fig 2: Correlation between maximum power dissipation and maximum allowable temperatures (Tamb and Tlead).

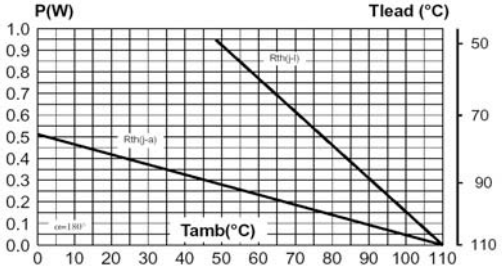


Fig 3: RMS on-state current versus ambient temperature.

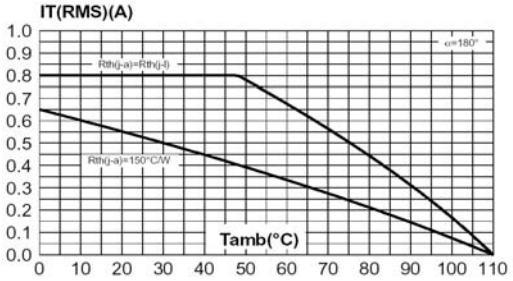


Fig 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

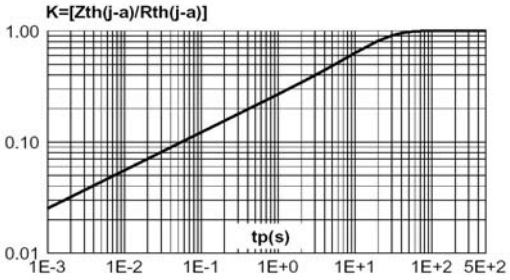


Fig 5: Relative variation of gate trigger current and holding current versus junction temperature (typical values).

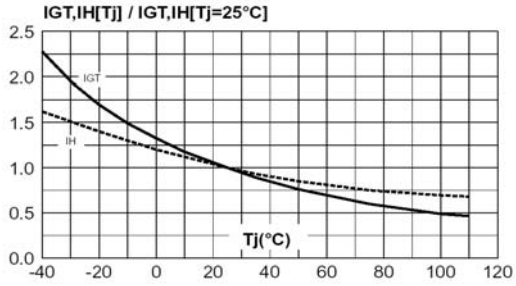
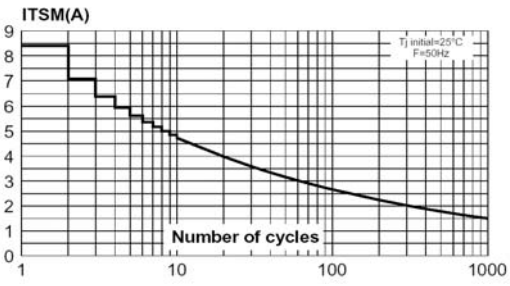


Fig 6: Non repetitive surge peak on-state current versus number of cycles.



Description

Fig 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I^2t.

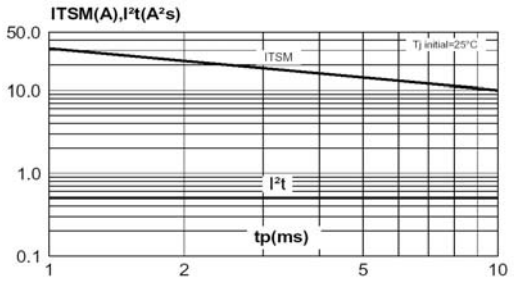
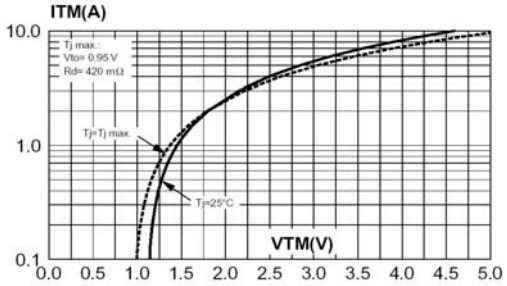


Fig 8: On-state characteristics (maximum values).

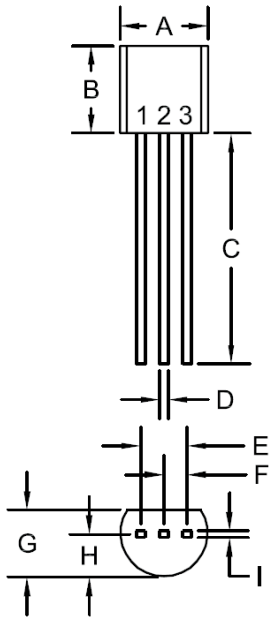


MECHANICAL DATA

Dimensions in mm

Net Mass: 0.2 g

TO-92



R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)