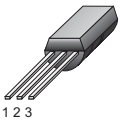
CT502

SCRs

HAOPIN MICROELECTRONICS CO.,LTD.

Description

Glass passivated, sensitive gate thyristors in a plastic envelope, intended for use in general purpose switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

Symbol	Simplified outline
	 TO-92MOD

Pin	Description
1	Cathode
2	anode
3	gate
TAB	anode

Applications:

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

Features

- Blocking voltage to 400 V
- On-state RMS current to 4 A
- Ultra low gate trigger current

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	400	V
$I_{T\ (RMS)}$	RMS on-state current （full sine wave）	4	A
I_{TSM}	Non-repetitive peak on-state current (full cycle,Tj initial=25℃)	20	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Rth (j-c)	Thermal resistance	Junction to Case	-	-	10	°C/W
Rth j-a	Lead Solder Temperature	Junction to Ambinet	-	-	75	°C/W

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

SYMBOL	PARAMETER	CONDITIONS	MIN	Rating	UNIT
V_{DRM}	Repetitive peak off-Voltage		-	400	V
$I_{T(RMS)}$	RMS on-state current	all conduction angles	-	4.0	A
I^2t	I^2t for fusing		-	33	A^2S
dv/dt	Critical Rate-of-Rise off-State Voltage	Tj=100℃	-	10	v/μs
I_{FGM}	Peak gate current		-	0.3	A
V_{FGM}	Peak gate voltage		-	6	V
P_{GM}	Peak gate power		-	0.5	W
$P_{G(AV)}$	Average gate power		-	0.1	W
T_{stg}	Storage temperature		-40	110	℃
T_j	Operating junction Temperature		-40	125	℃

T_J=25°C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	V_D=6V, I_T=0.1A, Tj=25℃	-	-	0.06	mA
V_{TM}	Peak On-Stage Voltage	I_{TM}=2A, Tc=25℃	-	-	1.6	V
I_H	Holding Current	V_D=24V, R_{GK}=1k, I_{TM}=2A	-	-	1	mA
V_{GD}	Gate non-trigger voltage	V_D=1/2V V_{DRM}, Tj=110°C, RGK=1K	0.1	-	-	V
V_{GT}	Gate trigger voltage	V_D=6V, I_T=0.1A, Tj=25℃	-	-	0.8	V

Dynamic Characteristics

I_{RRM}	Repetitive peak reverse current	V_{RRM}=Rated, Tj=110°C	-	-	1.0	mA
I_{DRM}	Repetitive peak off-state current	V_{DRM}=Rated, Tj=110°C, RGK=1K	-	-	1.0	mA

Description

TYPICAL CHARACTERISTICS (T_a = 25 °C)

Fig. 1 I_{TM}-V_{TM} CHARACTERISTICS

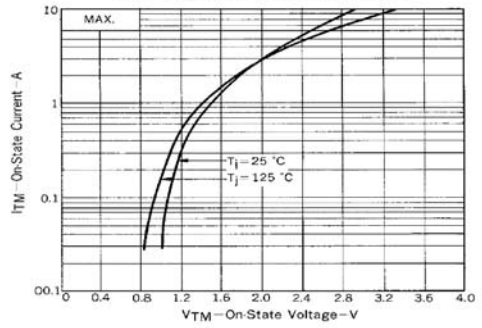


Fig. 2 $P_{T(AV)}$-$I_{T(AV)}$ CHARACTERISTICS

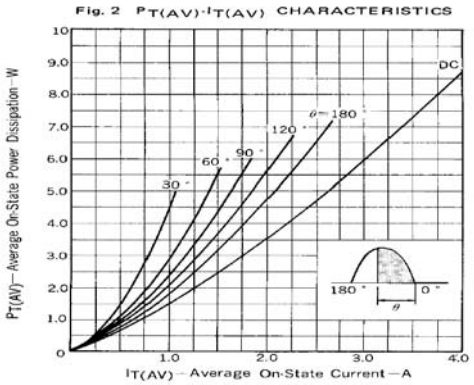


Fig. 3 $I_{T(AV)}$-T_C RATINGS

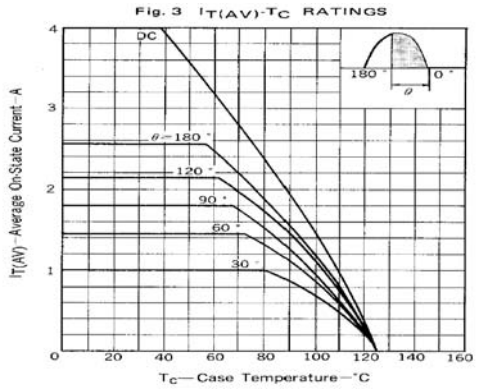


Fig. 4 T_a-$I_{T(AV)}$ RATINGS

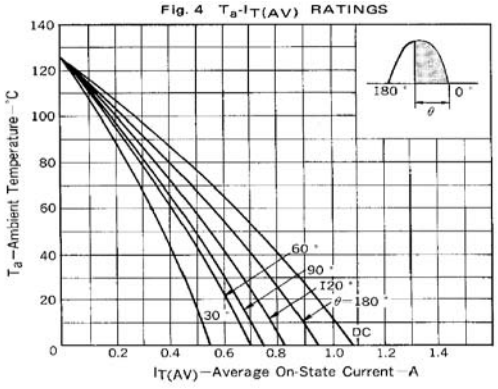


Fig. 5 I_{GT}-T_a TYPICAL DISTRIBUTION

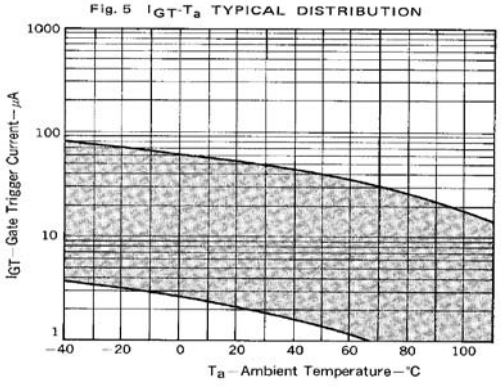
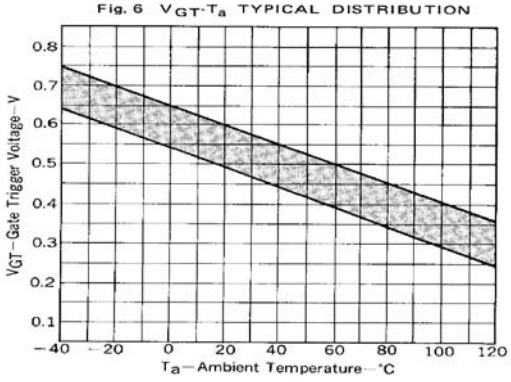


Fig. 6 V_{GT}-T_a TYPICAL DISTRIBUTION



Description

Fig. 7 I_{GT}-τ_G TYPICAL DISTRIBUTION

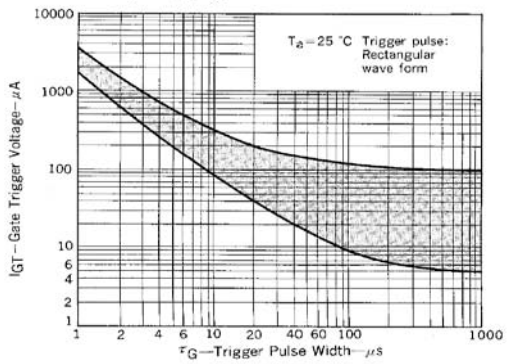


Fig. 8 V_{GT}-τ_G TYPICAL DISTRIBUTION

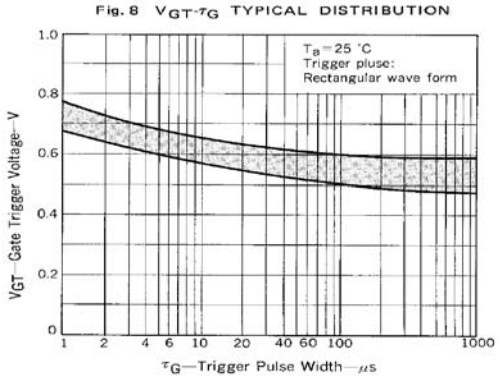


Fig. 9 I_H-T_a TYPICAL DISTRIBUTION

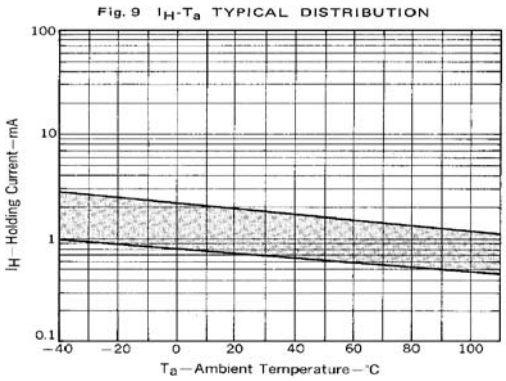


Fig. 10 I_{TSM} RATINGS

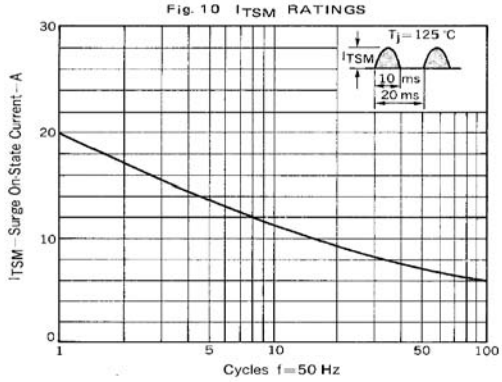
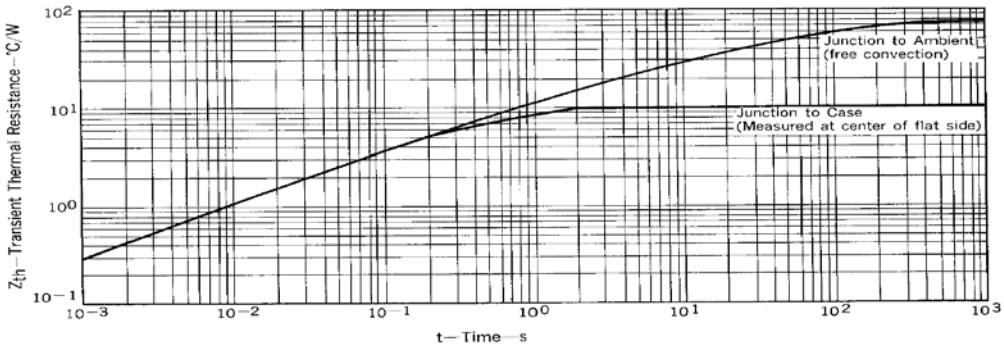


Fig. 11 Z_{th} CHARACTERISTICS



MECHANICAL DATA

Dimensions in mm

Net Mass:0.2 g

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