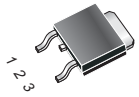
S6008DS2

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-252

Pin	Description
1	Cathode
2	anode
3	gate
TAB	anode

Applications:

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

Features

- Blocking voltage to 600 V
- On-state RMS current to 8 A
- Ultra low gate trigger current

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_{T\ (RMS)}$	RMS on-state current （full sine wave）	8	A
I_{TSM}	Non-repetitive peak on-state current (full cycle,Tj initial=25℃)	83	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Rth j-mb	Thermal resistance Junction to mounting base		-	-	2.0	K/W
Rth j-a	Thermal resistance Junction to am bient	In free air	-	70	-	K/W

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

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT
V_{DRM}	Repetitive peak off-state Voltages		-	600	V
$I_{T(RMS)}$	RMS on-state current	Full sine wave;T_c<=110℃	-	8	A
I_{TSM}	Non repetitive surge peak on-statecurrent	F=50H_z	-	83	A
		F=60H_z	-	100	A
I^2t	I^2t for fusing	T_p=10ms	-	41	A^2S
Di/dt			-	100	A/μs
I_{GM}	Peak gate current		-	1	A
I_{DRM}	V_{DRM}=V_{RRM}	Tc=25℃	-	5	μA
I_{RRM}	V_{DRM}=V_{RRM}	Tc=110℃	-	250	μA
$P_{G(AV)}$	Average gate power		-	0.1	W
P_{GM}			-	1	W
T_{stg}	Storage temperature		-40	150	℃
T_j	Junction temperature		-40	150	℃

T_J=25°C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	Ta=25℃,V_D=6V,I_T=0.1A	-	-	200	μA
V_{GT}	Gate trigger voltage	T_C=-40℃	-	-	1	V
		T_C=25℃			0.8	
		T_C=110℃			0.25	
I_H	Holding current	Tj=25℃,V_D=12V R_{GK}=1KΩ	-	-	6	mA
V_{GRM}			6	-	-	V
dV/dt			-	8	-	V/μs

Dynamic Characteristics

t_{gt}	Gate controlled turn-on time	I_{TM}=10A;V_D=$V_{DRM(max)}$; I_G=5mA; DI_G/dt=0.2A/μs	-	4	-	μs
t_q	Crcuit commutated tum-off time	V_{DM}=67% $V_{DRM(max)}$;Tj=150℃;I_{TM}=12A V_R=24V;dI_{TM}/dt=10A/μS dv_D/dt=2V/μs;R_{GK}=1kΩ	-	-	50	μs

Description

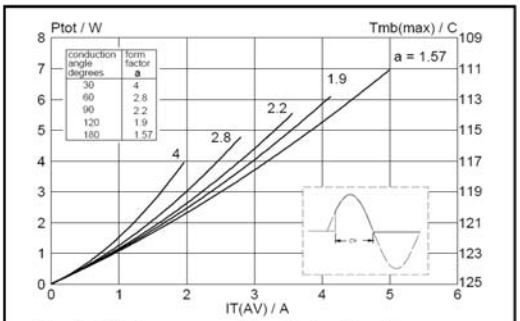


Fig.1. Maximum on-state dissipation, P_{tot}, versus average on-state current, $I_{T(AV)}$, where a = form factor = $I_{T(RMS)}$/ $I_{T(AV)}$.

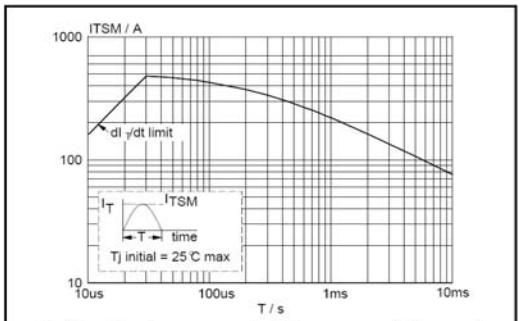


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus pulse width t_p, for sinusoidal currents, $t_p \leq 10ms$.

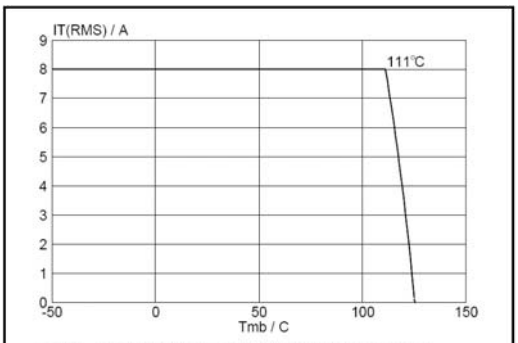


Fig.3. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb}.

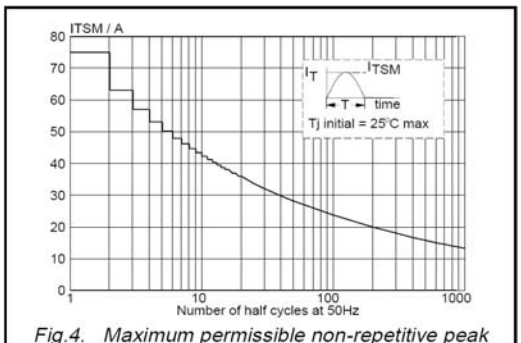


Fig.4. Maximum permissible non-repetitive peak on-state current I_{TSM}, versus number of cycles, for sinusoidal currents, f = 50 Hz.

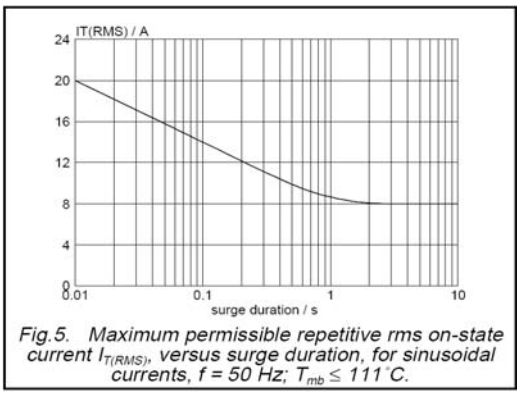


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, f = 50 Hz; $T_{mb} \leq 111$°C.

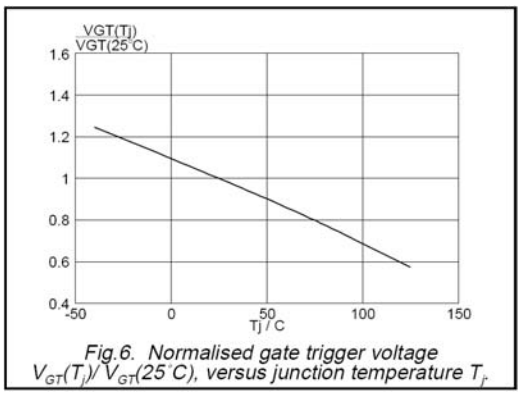


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)$/ $V_{GT}(25°C)$, versus junction temperature T_j.

Description

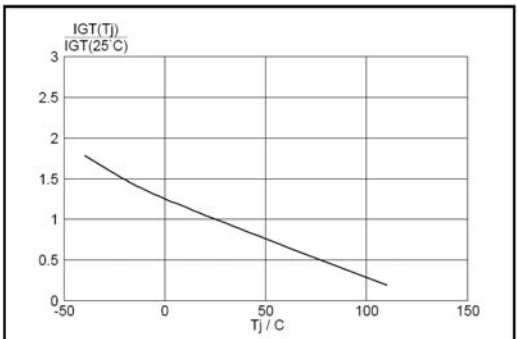


Fig.7. Normalised gate trigger current $I_{GT}(T_j)/ I_{GT}(25°C)$, versus junction temperature T_j.

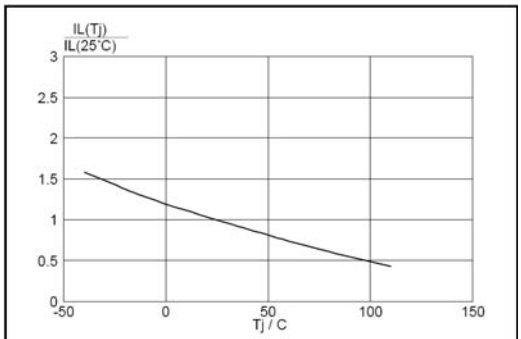


Fig.8. Normalised latching current $I_L(T_j)/ I_L(25°C)$, versus junction temperature T_j.

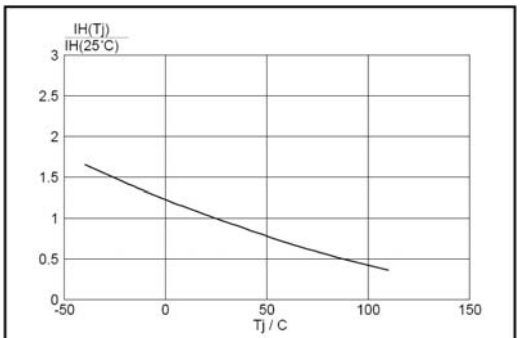


Fig.9. Normalised holding current $I_H(T_j)/ I_H(25°C)$, versus junction temperature T_j.

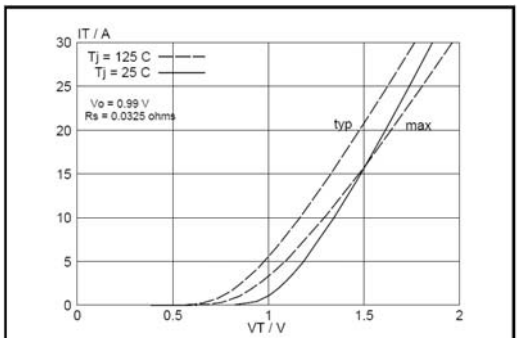


Fig.10. Typical and maximum on-state characteristic.

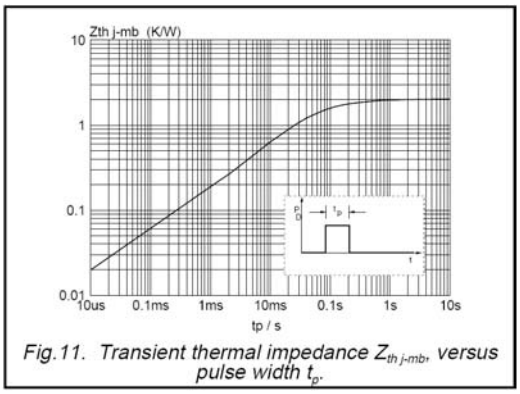


Fig.11. Transient thermal impedance $Z_{th\ j\text{-}mb}$, versus pulse width t_p.

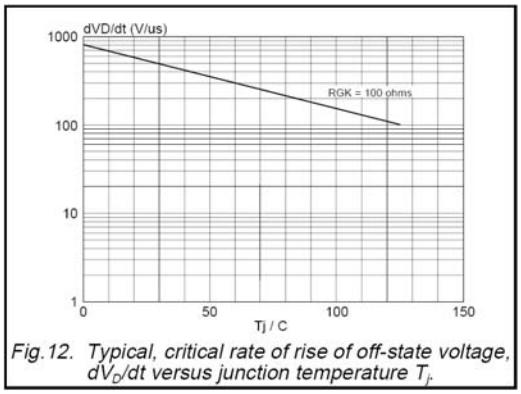


Fig.12. Typical, critical rate of rise of off-state voltage, dV_D/dt versus junction temperature T_j.

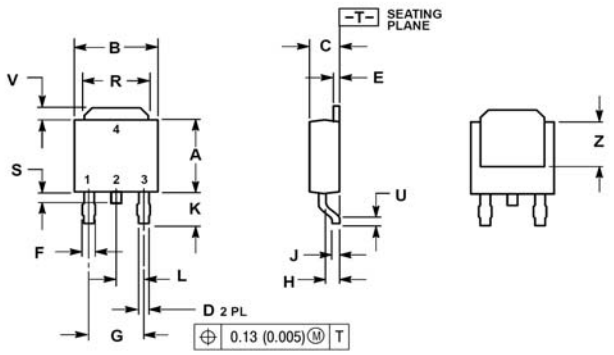
MECHANICAL DATA

Dimensions in mm

Net Mass: 0.3g

TO-252(DPAK)

DPAK
CASE 369C
ISSUE O



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	0.235	0.245	5.97	6.22
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.018	0.023	0.46	0.58
F	0.037	0.045	0.94	1.14
G	0.180 BSC		4.58 BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.180	0.215	4.57	5.45
S	0.025	0.040	0.63	1.01
U	0.020	---	0.51	---
V	0.035	0.050	0.89	1.27
Z	0.155	---	3.93	---

STYLE 6:
PIN 1. MT1
2. MT2
3. GATE
4. MT2

SOLDERING FOOTPRINT*