
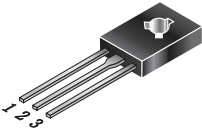


HAOPIN MICROELECTRONICS CO.,LTD.

Description

Standard gate triggering SCR is fully isolated package suitable for the application where requiring high bidirectional blocking voltage capability and also suitable for over voltage protection ,motor control circuit in power tool, inrush current limit circuit and heating control system.

<p>Symbol</p> 		<p>Simplified outline</p>  <p>TO-126</p>	
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 4 A

SYMBOL	PARAMETER		Value	Unit
V_{DRM}	Repetitive peak off-state voltages	C106D C106M	400 600	V
$I_{T(RMS)}$	RMS on-state current (full sine wave)		4	A
I_{TSM}	Non-repetitive peak on-state current		20	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal resistance Junction to case		-	-	3	°C/W
$R_{\theta JA}$	Thermal resistance Junction to ambient		-	-	75	°C/W



C106D, C106M

SCRs

HAOPIN MICROELECTRONICS CO.,LTD.

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

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state Voltages	RGK=1K Ω TC=-40° to 110°C	C106D C106M	- 400 600	V
$I_{T(RMS)}$	RMS on-state current	all conduction angles	-	4	A
I_{TSM}	Non-repetitive peak On-state current	1/2Cycle,60Hz,Tj=-40 to+110°C	-	20	A
I^2t	Circuit Fusing	T=8.3ms	-	1.65	A ² S
$I_{T(AV)}$	Average Forward Current	(180° Conduction Angles, Tc = 80°C)	-	2.55	A
I_{GM}	Forward Peak gate current	(Pulse Width 1.0 sec, Tc = 80°C)	-	0.2	A
V_{GRM}	Peak gate voltage	(IGR = 10 A)	-	6	V
P_{GM}	Forward Peak Gate Power	(Pulse Width 1.0 sec, Tc = 80°C)	-	0.5	W
$P_{G(AV)}$	Forward Average Gate Power	(Pulse Width 1.0 sec, Tc = 80°C)	-	0.1	W
T_{stg}	Storage temperature		-40	150	°C
T_j	Operating junction Temperature		-40	110	°C

T_j=25°C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	$V_{AK}=6Vdc, R_L=100\text{ Ohms}, T_j=25^\circ C$ $V_{AK}=6Vdc, R_L=100\text{ Ohms}, T_j=-40^\circ C$	-	30 75	200 500	μA
I_H	Holding current	$V_D=12Vdc; R_{GK}=1000\text{ Ohms}$ T _j =25°C T _j =-40°C T _j =+110°C	-	0.3 0.4 0.14	3 6 2	mA
I_L	Latching Current	$V_{AK}=12V; I_G=20\text{ mA}$ T _j =25°C T _j =-40°C	-	0.2 0.35	5 7	mA
V_{TM}	Peak Forward On-State Voltage	(ITM = 4 A)	-	-	2.2	V
V_{GT}	Gate trigger voltage	($V_{AK} = 6\text{ Vdc}, R_L = 100\text{ Ohms}$) T _j =25°C	0.4	0.6	0.8	V
		T _j =-40°C	0.5	0.75	1.0	V
V_{GD}	Gate Non-Trigger Voltage	$V_{AK}=12V, R_L=100\text{ Ohms}; T_j=110^\circ C$	0.2	-	-	V

Dynamic Characteristics

D_v/dt	Critical Rate-of-Rise of Off-State Voltage	T _j =110°C, R _{GK} =1000 Ohms, $V_{AK}=\text{Rated } V_{DRM}$	-	8	-	V/ μs
----------	--	--	---	---	---	------------

HAOPIN MICROELECTRONICS CO.,LTD.

Description

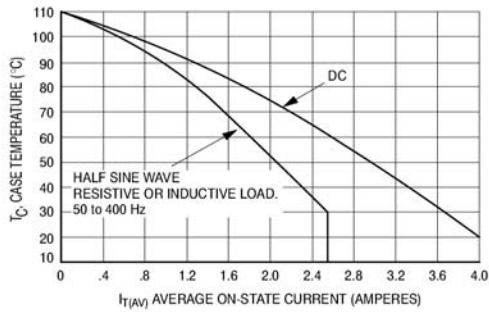


Figure 1. Average Current Derating

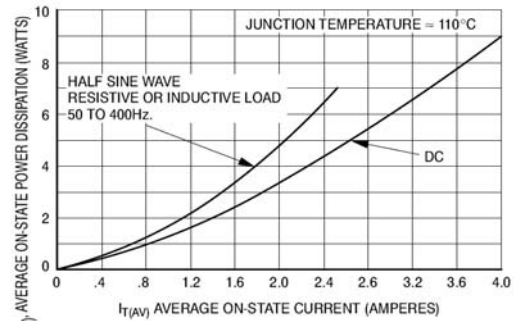


Figure 2. Maximum On-State Power Dissipation

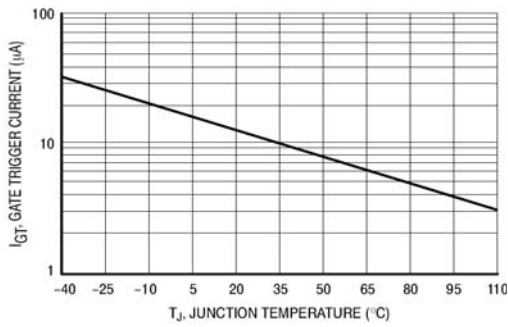


Figure 3. Typical Gate Trigger Current versus Junction Temperature

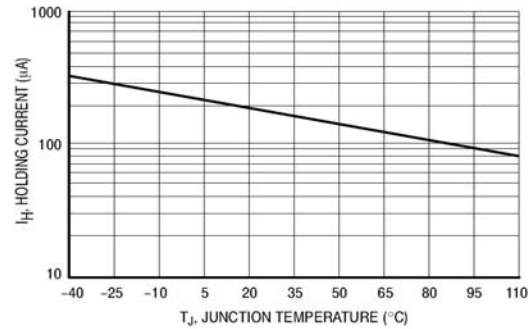


Figure 4. Typical Holding Current versus Junction Temperature

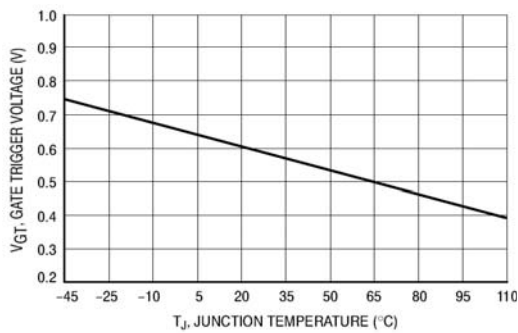


Figure 5. Typical Gate Trigger Voltage versus Junction Temperature

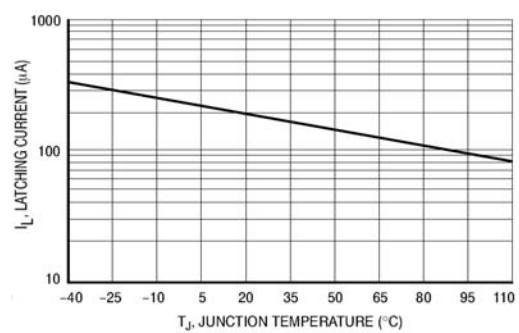
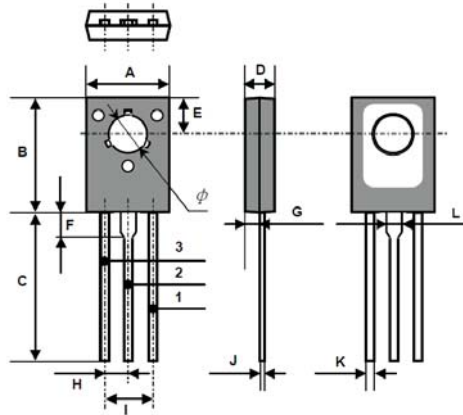


Figure 6. Typical Latching Current versus Junction Temperature

MECHANICAL DATA

Dimensions in mm
 Net Mass: 0.8 g
 TO-126



TO-126 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
ϕ		3.2			0.126	