

HSC106D/M

Silicon Controlled Rectifier

FEATURES

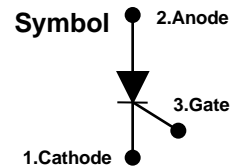
- Repetitive Peak Off-State Voltage ($V_{DRM}=400V/600V$)
- R.M.S On-State Current ($I_{T(RMS)}=4.0A$)
- Average On-State Current ($I_{T(AV)}=2.55A$)

General Description

Glassivated PNP devices designed for high volume consumer applications such as temperature, light and speed control, process and remote control, and warning systems where reliability of operation is important.

$$V_{DRM} = 400V / 600V$$

$$I_{T(RMS)} = 4.0A$$



Absolute Maximum Ratings ($T_i=25^\circ C$)

Symbol	Parameter	Value	Units
V_{DRM}	Repetitive Peak Off-State Voltage (Forward) HSC106D HSC106M	400 600	V
V_{RRM}	Repetitive Peak Off-State Voltage (Reverse) HSC106D HSC106M	400 600	V
$I_{T(RMS)}$	R.M.S On-State Current (All conduction angles)	4.0	A
$I_{T(AV)}$	Average On-State Current	2.55	A
I_{TSM}	Surge On-State Current (1/2 Cycle, 60Hz, Sine Wave, Non Repetitive, $T_j=110^\circ C$)	20	A
P_{GM}	Forward Peak Gate Power Dissipation (Pulse Width $\leq 1.0\mu sec$, $T_c=80^\circ C$)	0.5	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation (Pulse Width $\leq 1.0\mu sec$, $T_c=80^\circ C$)	0.1	W
V_{RGM}	Reverse Peak Gate Voltage	6.0	V
I_{FGM}	Forward Peak Gate Current (Pulse Width $\leq 1.0\mu sec$, $T_c=80^\circ C$)	0.2	A
T_{STG}	Storage Temperature Range	-40 to +150	$^\circ C$
T_j	Operating Junction Temperature	-40 to +110	$^\circ C$

Electrical Characteristics ($T_c=25^\circ\text{C}$)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
I_{GT}	Gate Trigger Current ⁽¹⁾	$V_{AK}=6\text{V}$, $R_L=100\Omega$, $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$			200 500	μA
V_{GT}	Gate Trigger Voltage ⁽¹⁾	$V_{AK}=6\text{V}$, $R_L=100\Omega$, $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$	0.4 0.5	0.6 0.7	0.8 1.0	V
V_{GD}	Non Trigger Gate Voltage ⁽¹⁾	$V_{AK}=12\text{V}$, $R_L=100\Omega$, $T_c=110^\circ\text{C}$	0.2			V
I_H	Holding Current	$V_{AK}=12\text{V}$, Gate open, $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$		0.4 0.55	3.0 6.0	mA
I_L	Latching Current	$V_{AK}=12\text{V}$, $I_G=20\text{mA}$, $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$			5.0 7.0	mA
I_{DRM} I_{RRM}	Repetitive or Reverse Peak Off-State Current	$V_{AK}=V_{DRM}$ or V_{RRM} , $P_{KG}=1000\Omega$ $T_c=25^\circ\text{C}$ $T_c=110^\circ\text{C}$			10 100	μA
V_{TM}	Peak On-State Voltage ⁽²⁾	$I_{FM}=1.0\text{A}$			2.2	V

⁽¹⁾ R_{GK} Current is not included in measurement

⁽²⁾ Pulse Test : Pulse width $\leq 2.0\text{ms}$, Duty cycle $\leq 2\%$

Thermal Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$R_{TH(J-C)}$	Thermal Resistance	Junction to Case			3.0	$^\circ\text{C}/\text{W}$
$R_{TH(J-A)}$	Thermal Resistance	Junction to Ambient			75	$^\circ\text{C}/\text{W}$
TL	Maximum Lead Temperature for Soldering Purpose 1/8", from case for 10second				260	$^\circ\text{C}$

Performance Curves

Fig 1. Average Current Derating

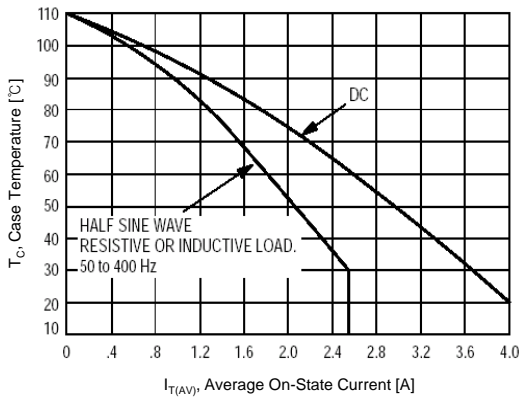


Fig 2. Maximum On-State Power Dissipation

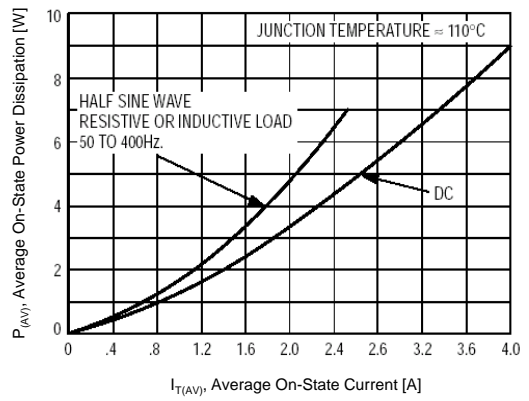


Fig 3. Typical Gate Trigger Current vs Junction Temperature

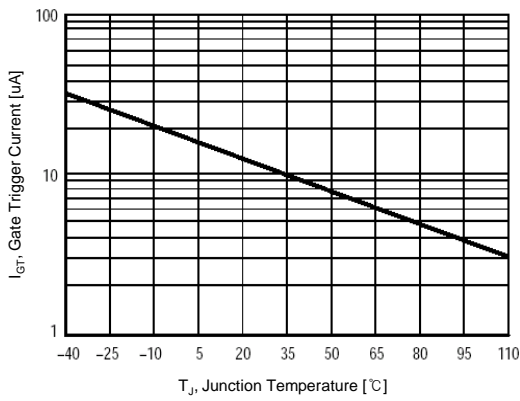


Fig 4. Typical Holding Current vs Junction Temperature

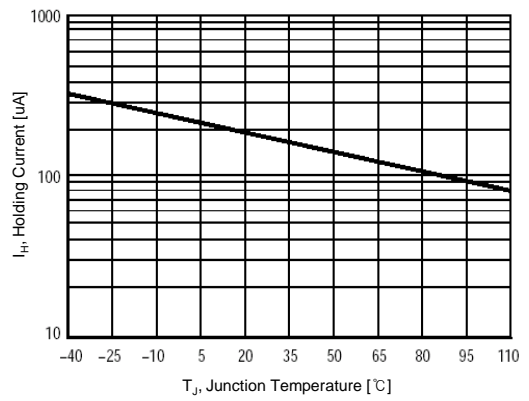


Fig 5. Typical Gate Trigger Voltage vs Junction Temperature

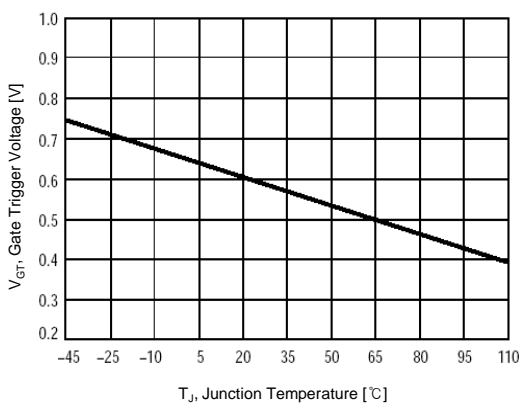


Fig 6. Typical Latching Current vs Junction Temperature

