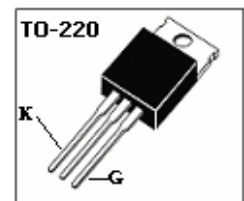
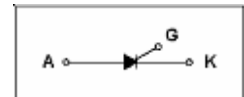


Silicon Controlled Rectifier

Features

- * Repetitive Peak Off-State Voltage : 600V
- * R.M.S On-State Current($I_{T(RMS)}=20A$)
- * Low On-State Voltage (1.3V(Typ.)@ I_{TM})
- * Non-isolated Type

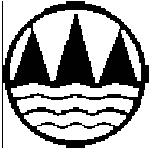


General Description

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

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$ unless otherwise specified)

T_{stg}	Storage Temperature	-40~125 $^\circ\text{C}$
T_j	Operating Junction Temperature	-40~125 $^\circ\text{C}$
V_{DRM}	Repetitive Peak Off-State Voltage	600V
I_T (RMS)	R.M.S On-State Current (180 $^\circ$ Conduction Angles)	20A
$I_{T(AV)}$	Average On-State Current (Half Sine Wave : $T_C = 102^\circ\text{C}$)	13A
I_{TSM}	Surge On-State Current (1/2 Cycle, 60Hz, Sine Wave, Non-repetitive)	220A
I^2t	Circuit Fusing Considerations($t = 8.3\text{ms}$)	242 A^2s
P_{GM}	Forward Peak Gate Power Dissipation ($T_a=25^\circ\text{C}$)	20W
$P_{G(AV)}$	Forward Average Gate Power Dissipation ($T_a=25^\circ\text{C}$, $t=8.3\text{ms}$)	1W
I_{FGM}	Forward Peak Gate Current	5A
V_{RGM}	Reverse Peak Gate Voltage	5V



Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
I_{DRM}	Repetitive Peak Off-State Current			10 200	μA	$V_{\text{AK}}=V_{\text{DRM}}$ $T_c=25^{\circ}\text{C}$ $T_c=125^{\circ}\text{C}$
V_{TM}	Peak On-State Voltage (1)			1.6	V	$I_{\text{TM}}=40\text{A}$, $t_p=380\mu\text{s}$
I_{GT}	Gate Trigger Current (2)			15	mA	$V_{\text{AK}}=6\text{V(DC)}$, $R_L=10\text{ ohm}$
V_{GT}	Gate Trigger Voltage (2)			1.5	V	$V_{\text{AK}}=6\text{V(DC)}$, $R_L=10\text{ ohm}$ $T_c=25^{\circ}\text{C}$
V_{GD}	Non-Trigger Gate Voltage	0.2			V	$V_{\text{AK}}=12\text{V}$, $R_L=100\text{ ohm}$ $T_c=125^{\circ}\text{C}$
I_{H}	Holding Current			20	mA	$I_T=100\text{mA}$, Gate open, $T_c=25^{\circ}\text{C}$
$R_{\text{th(j-c)}}$	Thermal Resistance			1.1	$^{\circ}\text{C/W}$	Junction to Case
$R_{\text{th(j-a)}}$	Thermal Resistance			60	$^{\circ}\text{C/W}$	Junction to Ambient
dv/dt	Critical Rate of Rise Off-state Voltage	200			$\text{V}/\mu\text{s}$	Linear slope up to $V_D=V_{\text{DRM}}67\%$ Gate open $T_j=125^{\circ}\text{C}$

1. Forward current applied for 1 ms maximum duration, duty cycle $\leq 1\%$.
2. R_{GK} current is not included in measurement

Performance Curves

FIGURE 1 – Gate Characteristics

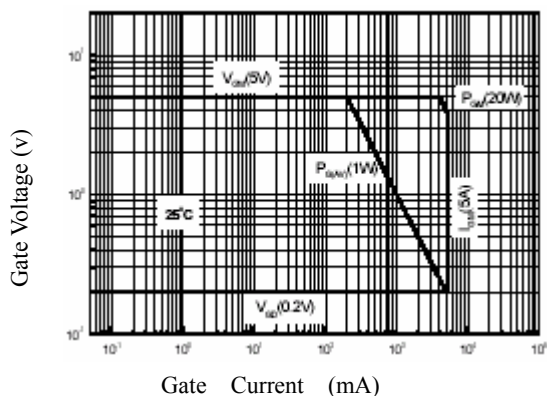
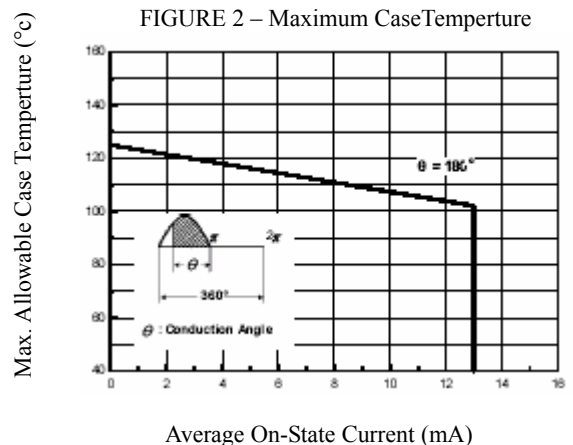


FIGURE 2 – Maximum Case Temperature



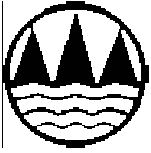


FIGURE 3-Typical Forward Voltage(V)

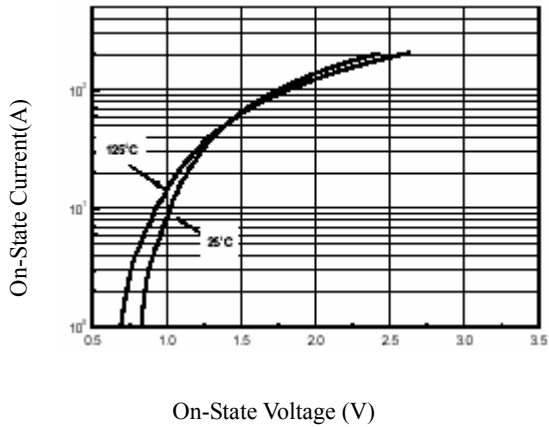


FIGURE 4-Thermal Response

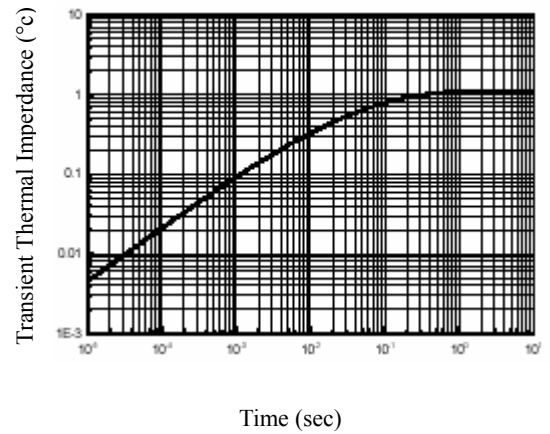


FIGURE 5-Typical Gate Trigger Voltage VS
Junction Temperature

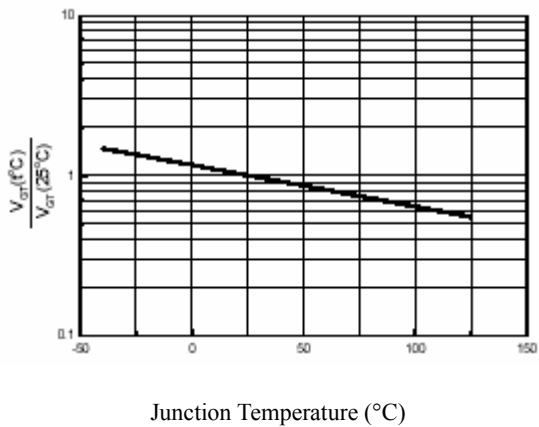


FIGURE 6-Typical Gate Trigger Current VS
Junction Temperature

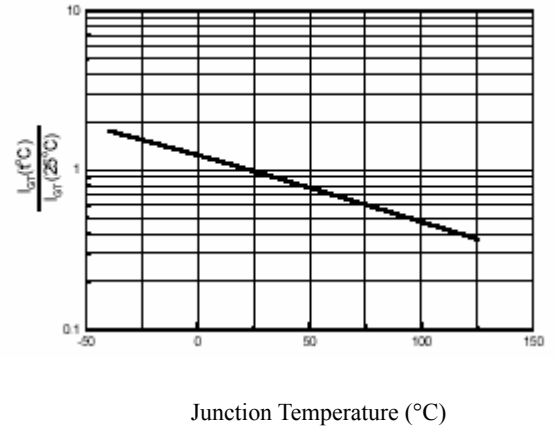


FIGURE 7-Typical Holding Current

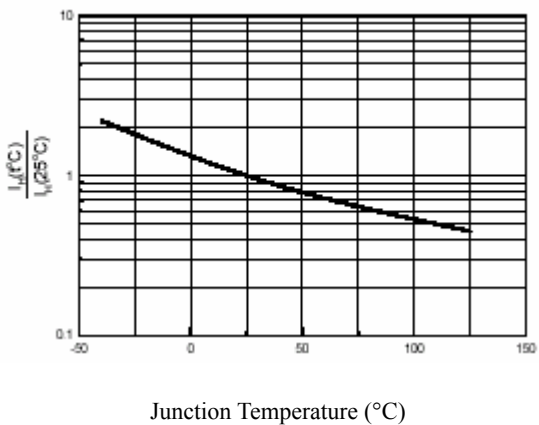


FIGURE 8-Power Dissipation

