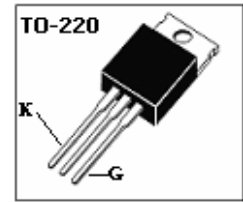
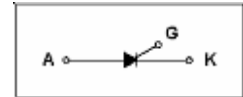


# Silicon Controlled Rectifier

## ■ Features

- \* Repetitive Peak Off-State Voltage : 600V
- \* R.M.S On-State Current( $I_{T(RMS)}=8A$ )
- \* Low On-State Voltage (1.3V(Typ.)@  $I_{TM}$ )
- \* Non-isolated Type

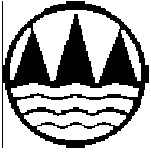


## ■ General Description

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

$T_{stg}$	Storage Temperature	-----	-40~125 $^{\circ}C$
$T_j$	Operating Junction Temperature	-----	-40~125 $^{\circ}C$
$V_{DRM}$	Repetitive Peak Off-State Voltage	-----	600V
$I_T$ (RMS)	R.M.S On-State Current (180 $^{\circ}$ Conduction Angles)	-----	8A
$I_{T(AV)}$	Average On-State Current (Half Sine Wave : $T_C = 111^{\circ}C$ )	-----	6.4A
$I_{TSM}$	Surge On-State Current (1/2 Cycle, 60Hz, Sine Wave, Non-repetitive)	-----	110A
$I^2t$	Circuit Fusing Considerations( $t = 8.3ms$ )	-----	60A $^2s$
$P_{GM}$	Forward Peak Gate Power Dissipation ( $T_a=25^{\circ}C$ )	-----	5W
$P_{G(AV)}$	Forward Average Gate Power Dissipation ( $T_a=25^{\circ}C, t=8.3ms$ )	-----	0.5W
$I_{FGM}$	Forward Peak Gate Current	-----	2A
$V_{RGM}$	Reverse Peak Gate Voltage	-----	5V



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

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
$I_{\text{DRM}}$	Repetitive Peak Off-State Current			10 200	$\mu\text{A}$	$V_{\text{AK}}=V_{\text{DRM}}$ $T_c=25^{\circ}\text{C}$ $T_c=125^{\circ}\text{C}$
$V_{\text{TM}}$	Peak On-State Voltage (1)			1.6	V	$I_{\text{TM}}=16\text{A}, t_p=380\mu\text{s}$
$I_{\text{GT}}$	Gate Trigger Current (2)			15	mA	$V_{\text{AK}}=6\text{V(DC)}, R_L=10\text{ ohm}$
$V_{\text{GT}}$	Gate Trigger Voltage (2)			1.5	V	$V_{\text{AK}}=6\text{V(DC)}, R_L=10\text{ ohm}$ $T_c=25^{\circ}\text{C}$
$V_{\text{GD}}$	Non-Trigger Gate Voltage	0.2			V	$V_{\text{AK}}=12\text{V}, R_L=100\text{ ohm}$ $T_c=125^{\circ}\text{C}$
$I_{\text{H}}$	Holding Current			20	mA	$I_T=100\text{mA}, \text{Gate open},$ $T_c=25^{\circ}\text{C}$
$R_{\text{th(j-c)}}$	Thermal Resistance			1.3	$^{\circ}\text{C/W}$	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.  $R_{\text{GK}}$  current is not included in measurement

**Performance Curves**

FIGURE 1 – Gate Characteristics

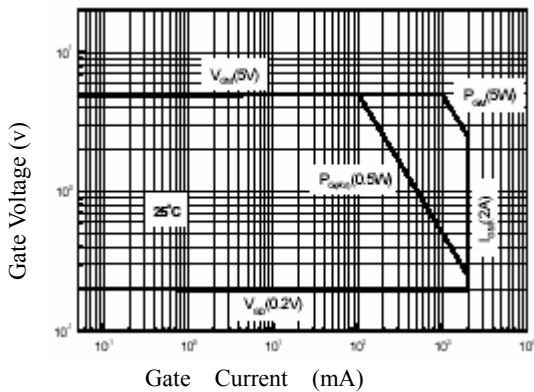
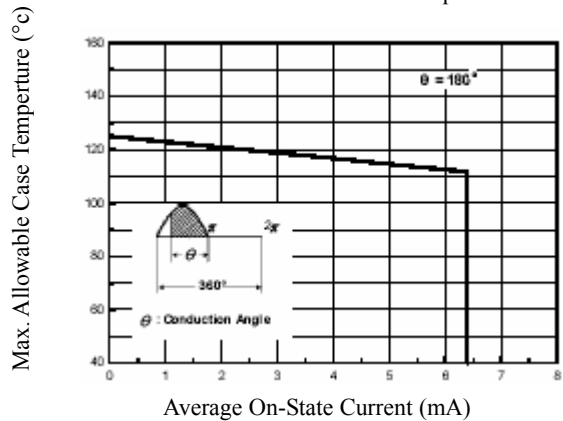


FIGURE 2 – Maximum Case Temperature



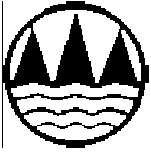


FIGURE 3-Typical Forward Voltage(V)

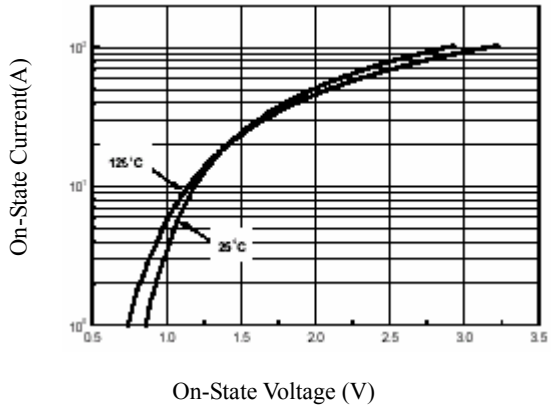


FIGURE 4-Thermal Response

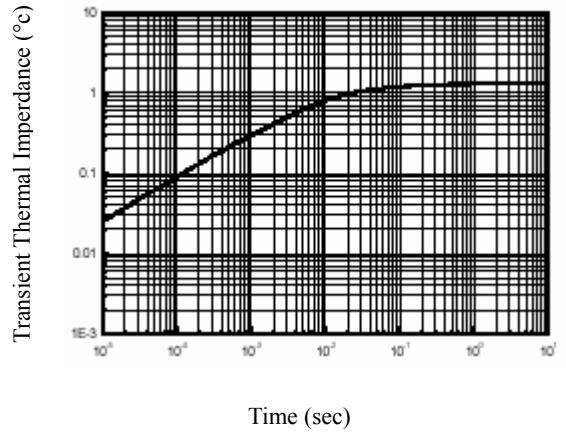


FIGURE 5-Typical Gate Trigger Voltage VS Junction Temperature

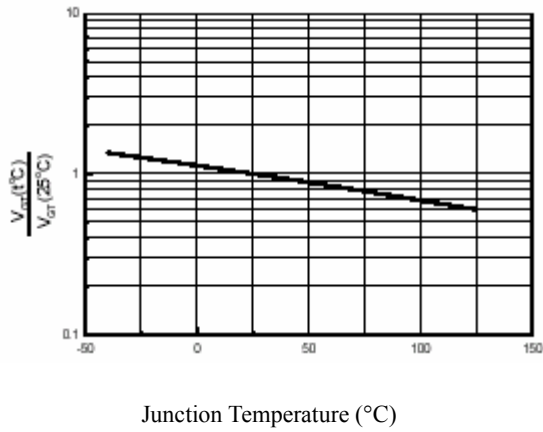


FIGURE 6-Typical Gate Trigger Current VS Junction Temperature

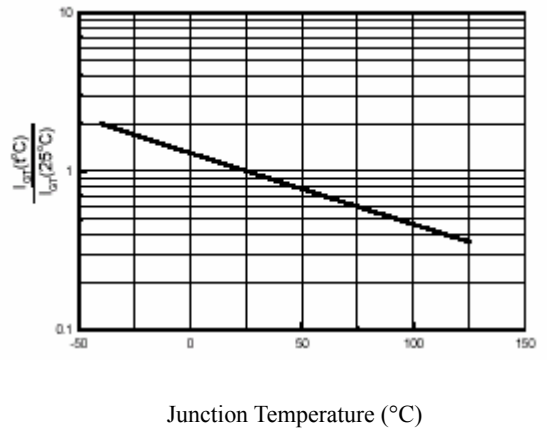


FIGURE 7-Typical Holding Current

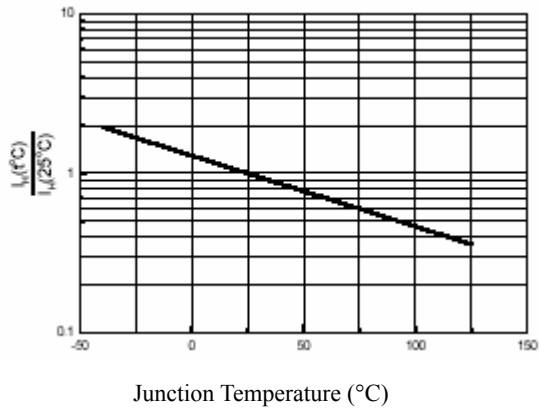


FIGURE 8-Power Dissipation

