

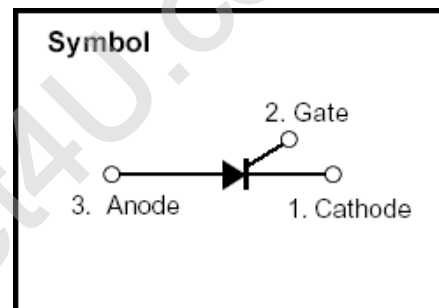
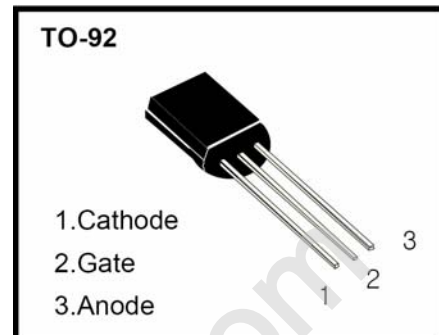
## Sensitive Gate Silicon Controlled Rectifiers

### Features

- ◇ Repetitive Peak Off-State Voltage : 400V
- ◇ R.M.S On-State Current ( $I_T(\text{RMS})=0.8 \text{ A}$ )
- ◇ Low On-State Voltage (1.2V(Typ.)@ITM)

### General Description

Sensitive triggering SCR is suitable for the application where gate current limited such as small motor control, gate driver for large SCR, sensing and detecting circuits.



### Absolute Maximum Ratings (T<sub>J</sub>=25°C unless otherwise specified)

Symbol	Parameter	Condition	Ratings	Units
V <sub>DRM</sub>	Repetitive Peak Off-state Voltage		400	V
I <sub>T(AV)</sub>	Average On-State Current	Half Sine Wave : T <sub>c</sub> =74°C	0.5	A
I <sub>T(RMS)</sub>	R.M.S On-State Current	All Conduction Angle	0.8	A
I <sub>TSM</sub>	Surge On-State Current	1/2 Cycle, 60Hz, Sine Wave Non-Repetitive	10	A
I <sub>2t</sub>	I <sup>2</sup> <sub>t</sub> for Fusing	t = 8.3ms	0.415	A <sup>2</sup> s
P <sub>GM</sub>	Forward Peak Gate Power Dissipation		2	W
P <sub>G(AV)</sub>	Forward Average Gate Power Dissipation		0.1	W
I <sub>FGM</sub>	Forward Peak Gate Current		1	A
V <sub>RGM</sub>	Reverse Peak Gate Voltage		5.0	V
T <sub>J</sub>	Operating Junction Temperature		-40 ~ 125	°C
T <sub>STG</sub>	Storage Temperature		-40 ~ 150	°C

## Electrical Characteristics

Symbol	Items	Conditions	Ratings			Unit
			Min	Typ	Max	
$I_{DRM}$	Repetitive Peak Off-State Current	$V_{AK}=V_{DRM}$ , or $V_{RRM}; R_{GK}=1000\Omega$ $T_c=25^\circ\text{C}$ $T_c=125^\circ\text{C}$	— —	— —	10 200	$\mu\text{A}$
$V_{TM}$	Peak On-State Voltage(1)	( $I_{TM}=1\text{A}$ , Peak)	—	1.2	1.7	V
$I_{GT}$	Gate Trigger Current(2)	$V_{AK}=6\text{V}$ , $R_L=100\Omega$ $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$	— —	— —	200 500	$\mu\text{A}$
$V_{GT}$	Gate Trigger Voltage(2)	$V_D=7\text{V}$ , $R_L=100\Omega$ $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$	— —	— —	0.8 1.2	V
$V_{GD}$	Non-Trigger Gate Voltage(1)	$V_{AK}=12\text{V}$ , $R_L=100\Omega$ $T_c=125^\circ\text{C}$	0.2	—	—	V
dv/dt	Critical Rate of Rise Off-State Voltage	$V_D=\text{Rated } V_{DRM}$ , Exponential waveform $R_{GK}=1000\Omega$ $T_c=125^\circ\text{C}$	500	800	—	$\text{V}/\mu\text{s}$
di/dt	Critical Rate of Rise Off-State Voltage	$I_{PK}=20\text{A}$ ; $P_w=10\mu\text{s}$ ; $di_G/dt=1\text{A}/\mu\text{s}$ $I_{gt}=20\text{mA}$	—	—	50	$\text{A}/\mu\text{s}$
$I_H$	Holding Current	$V_{AK}=12\text{V}$ , Gate Open Initiating Current= $20\text{mA}$ $T_c=25^\circ\text{C}$ $T_c=-40^\circ\text{C}$	— —	2 —	5.0 10	mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case	—	—	60	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Thermal Impedance	Junction to Ambient	—	—	150	$^\circ\text{C}/\text{W}$

## ※ Notes :

1. Pulse Width  $\leq 1.0\text{ms}$ , Duty cycle  $\leq 1\%$
2. Does not include  $R_{GK}$  in measurement.

Fig 1. Gate Characteristics

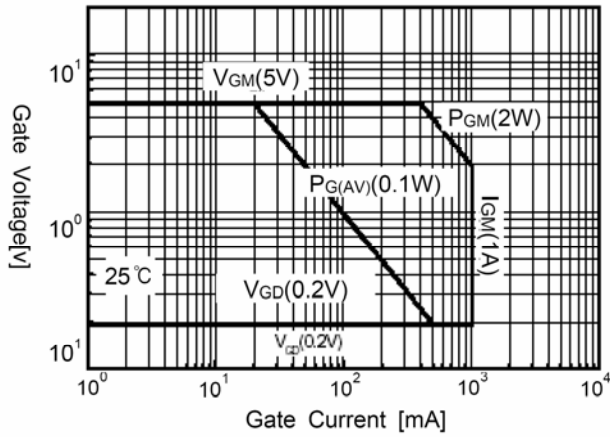


Fig 2. Maximum Case Temperature

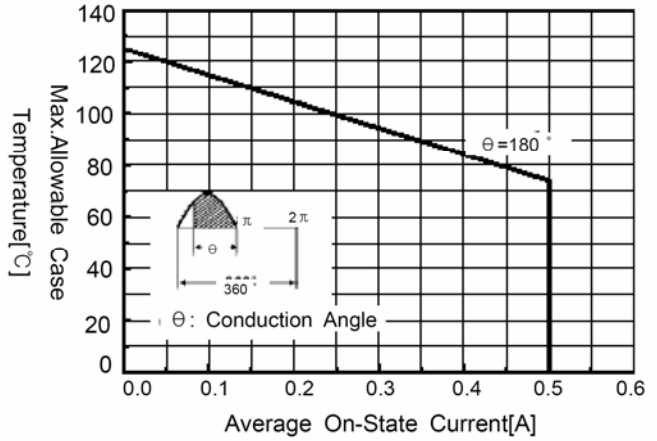


Fig 3. Typical Gate Trigger Voltage vs. Junction Temperature

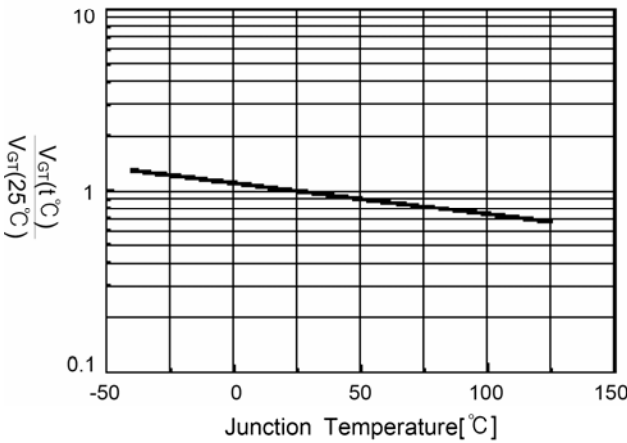


Fig 4. Typical Gate Trigger Current vs. Junction Temperature

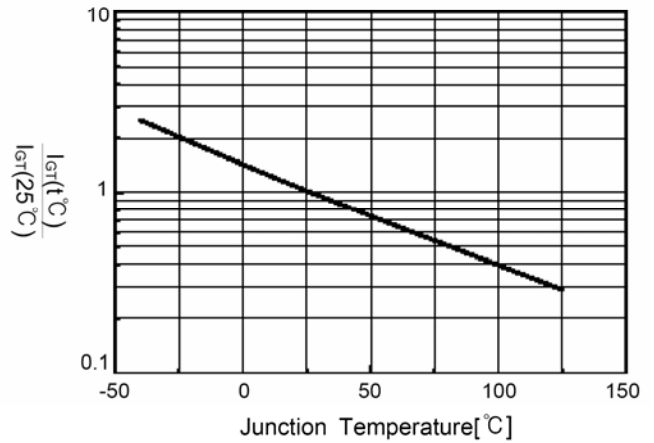


Fig 5. Typical Forward Voltage

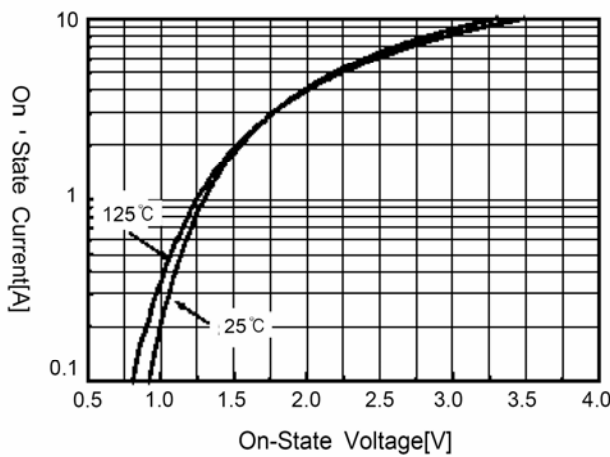


Fig 6. Thermal Response

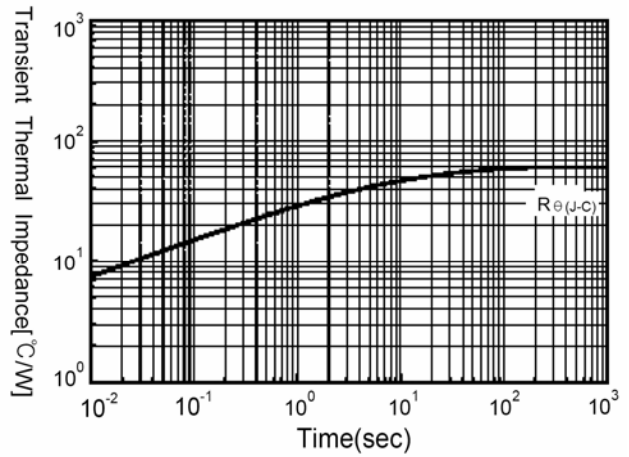


Fig 7. Typical holding Current

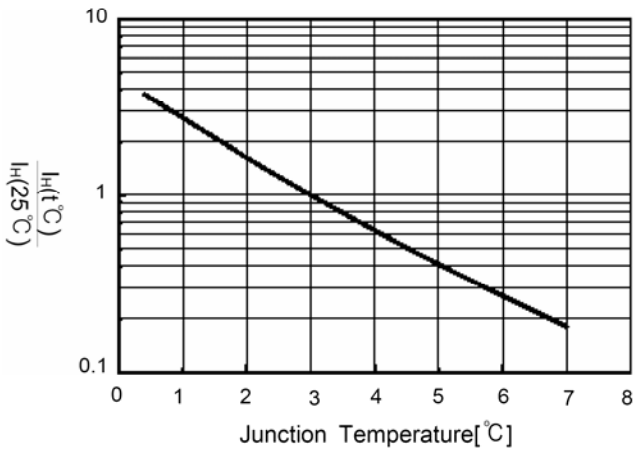
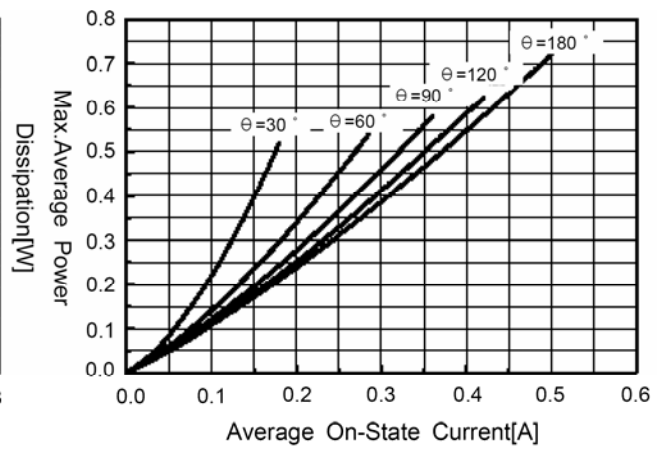


Fig 8. Power Dissipation



• TO-92

