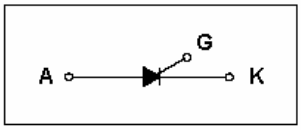
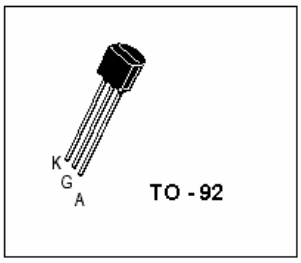
HCR1C60

Silicon Controlled Rectifier





Features

*** Repetitive Peak Off-State Voltage : 600V**
*** R.M.S On-State Current($I_{T(RMS)}$=1A)**
*** Low On-State Voltage (1.2V(Typ.)@ I_{TM})**

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_a=25℃ unless otherwise specified)

T_{stg}——Storage Temperature ---------- -40~150℃
T_j ——Operating Junction Temperature ---------- 125℃
V_{DRM} ——Repetitive Peak Off-State Voltage ---------- 600V
I_T (RMS) ——R.M.S On-State Current (180° Conduction Angles) ----------1.0A
$I_{T(AV)}$ ——Average On-State Current (Half Sine Wave : T_C = 45 °C) ----------0.8A
I_{TSM} ——Surge On-State Current (1/2 Cycle, 60Hz, Sine Wave, Non-repetitive) ---------- 10A
I^2t ——Circuit Fusing Considerations(t = 8.3ms) ---------- $0.9A^2s$
P_{GM} ——Forward Peak Gate Power Dissipation (T_a=25℃) ---------- 0.5W
$P_{G(AV)}$ ——Forward Average Gate Power Dissipation (T_a=25℃,t=8.3ms) ----------0.1W
I_{FGM} ——Forward Peak Gate Current ---------- 0.2A
V_{RGM} ——Reverse Peak Gate Voltage ---------- 5V

Electrical Characteristics (T_a=25℃ unless otherwise specified)

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
I_{DRM}	Repetitive Peak Off-State Current			10 200	uA	$V_{AK}=V_{DRM}$ T_a=25℃ T_a=125℃
V_{TM}	Peak On-State Voltage (1)		1.2	1.7	V	I_{TM}=1A,PEAK
I_{GT}	Gate Trigger Current (2)			200 500	uA	V_{AK} =6V(DC), R_L=100 ohm T_a=25℃ T_a= -40℃
V_{GT}	Gate Trigger Voltage (2)			0.8 1.2	V	V_{AK} =6V(DC), R_L=100 ohm T_a=25℃ T_a= -40℃
V_{GD}	Non-Trigger Gate Voltage	0.2			V	V_{AK} =12V, R_L=100 ohm T_a=125℃
I_H	Holding Current		2.0	5.0 10	mA	I_T=100mA,Gate open, T_a=25℃ T_a= -40℃
Rth(j-c)	Thermal Resistance			50	℃/W	Junction to Case
Rth(j-a)	Thermal Resistance			160	℃/W	Junction to Ambient
dv/dt	Critical Rate of Rise Off-state Voltage	200			V/μs	$V_D=V_{DRM}$67% exponential Waveform Rjk=1Kohm Tj=125℃

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

Performance Curves

FIGURE 1 – Gate Characteristics

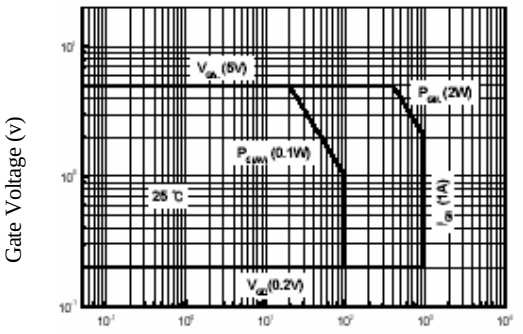


FIGURE 2 – Maximum CaseTemperture

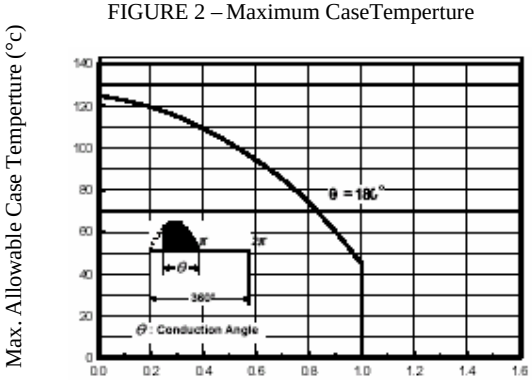


FIGURE 3-Typical Forward Voltage(V)

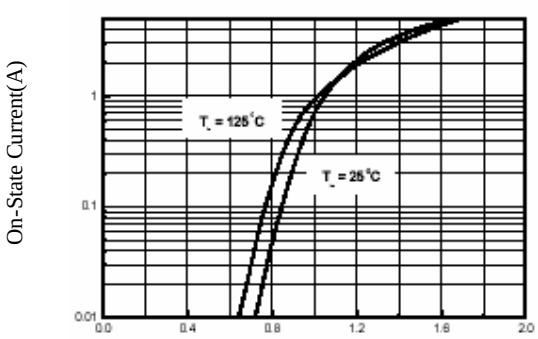


FIGURE 4-Thermal Response

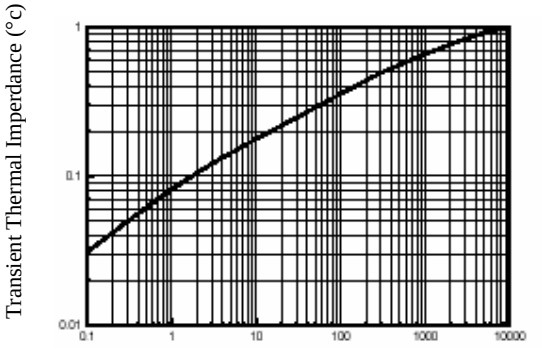


FIGURE 5-Typical Gate Trigger Voltage VS Junction Temperature

FIGURE 6-Typical Gate Trigger Current VS Junction Temperature

FIGURE 7-Typical Holding Current

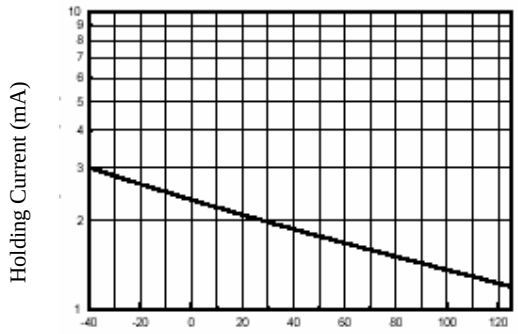


FIGURE 8-Power Dissipation