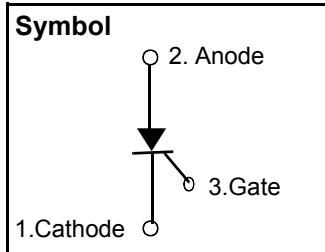
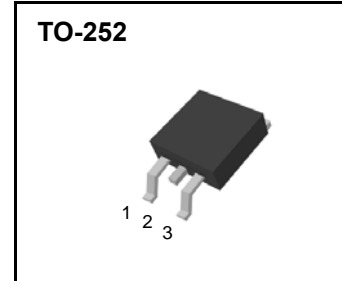


## Sensitive Gate Silicon Controlled Rectifiers



$BV_{DRM} = 600V$
$I_{T(RMS)} = 5A$
$I_{TSM} = 36A$



### Features

- ◆ Repetitive Peak Off-State Voltage : 600V
  - ◆ R.M.S On-State Current (  $I_{T(RMS)} = 5 A$  )
- Non-isolated TO-252 Package

### General Description

Apollo Electron's SCR is suitable for the application where requiring high bidirectional 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 ( $T_j = 25^{\circ}C$ unless otherwise specified )

Symbol	Parameter	Condition	Ratings	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage	sine wave, 50 to 60Hz	600	V
$I_{T(RMS)}$	R.M.S On-State Current	180° Conduction Angle	5	A
$I_{TSM}$	Surge On-State Current	1/2 Cycle, 60Hz, Sine Wave Non-Repetitive	36	A
$P_{GM}$	Forward Peak Gate Power Dissipation	$T_j = 110^{\circ}C$	1	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	$T_j = 110^{\circ}C$	0.1	W
$I_{FGM}$	Forward Peak Gate Current	$T_j = 110^{\circ}C$	1	A
$T_j$	Operating Junction Temperature		- 40 ~ 125	$^{\circ}C$
$T_{STG}$	Storage Temperature		- 40 ~ 150	$^{\circ}C$

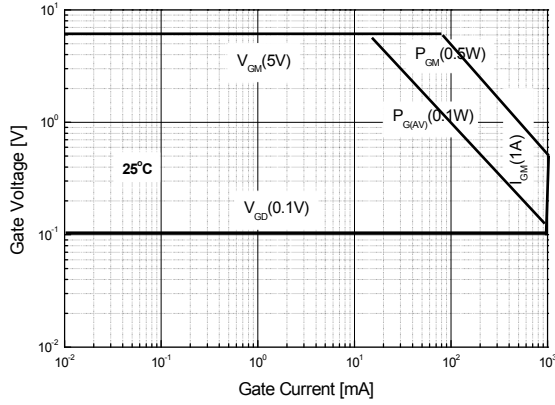


## Electrical Characteristics ( $T_j = 25\text{ }^\circ\text{C}$ unless otherwise noted )

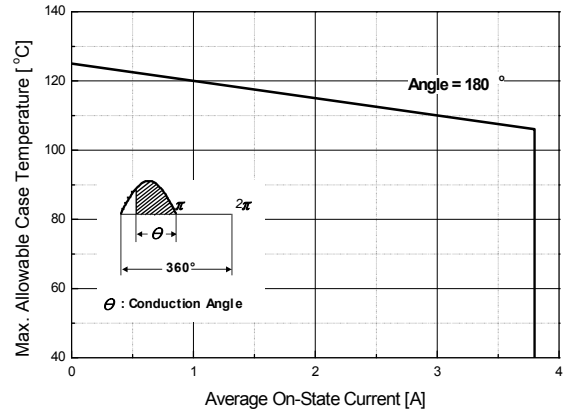
Symbol	Items	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
$I_{\text{DRM}}$	Repetitive Peak Off-State Current	$V_{\text{AK}} = V_{\text{DRM}}$ $T_j = 125\text{ }^\circ\text{C}$	—	—	100	$\mu\text{A}$
$V_{\text{TM}}$	Peak On-State Voltage (1)	$I_T = 4\text{ A}$	—	—	1.4	V
$I_{\text{GT}}$	Gate Trigger Current (2)	$V_{\text{AK}} = 12\text{V(DC)}$ , $R_L = 100\ \Omega$	—	—	200	$\mu\text{A}$
$V_{\text{GT}}$	Gate Trigger Voltage (2)	$V_D = 12\text{V(DC)}$ , $R_L = 100\ \Omega$	—	—	1.2	V
$V_{\text{GD}}$	Non-Trigger Gate Voltage (1)	$V_{\text{AK}} = 12\text{ V}$ , $R_L = 100\ \Omega$ $T_j = 125\text{ }^\circ\text{C}$	0.1	—	—	V
dv/dt	Critical Rate of Rise Off-State Voltage	Linear slope upto $DV = V_{\text{DRM}} 67\%$ , Gate open $T_j = 125\text{ }^\circ\text{C}$	10	—	—	V/us
$I_{\text{H}}$	Holding Current	$V_D = 24\text{V}$ , $I_{\text{GT}} = 50\text{mA}$	—	—	5	mA



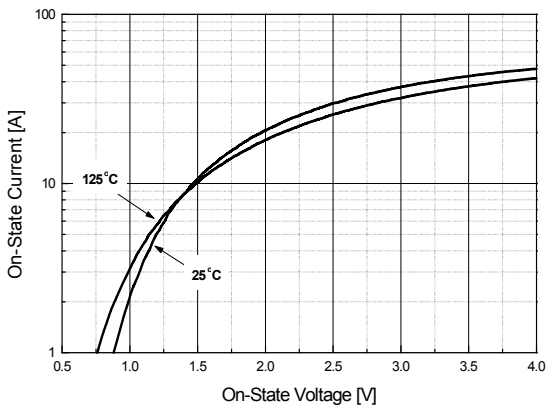
**Fig 1. Gate Characteristics**



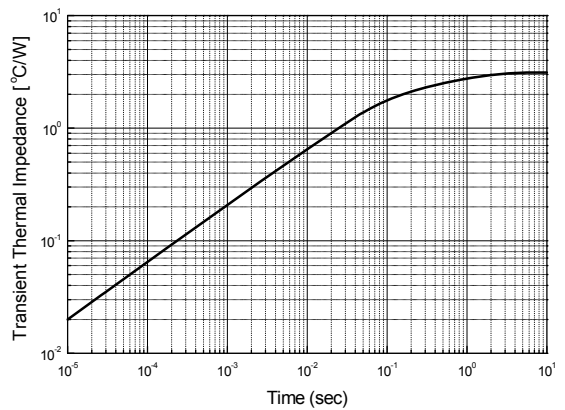
**Fig 2. Maximum Case Temperature**



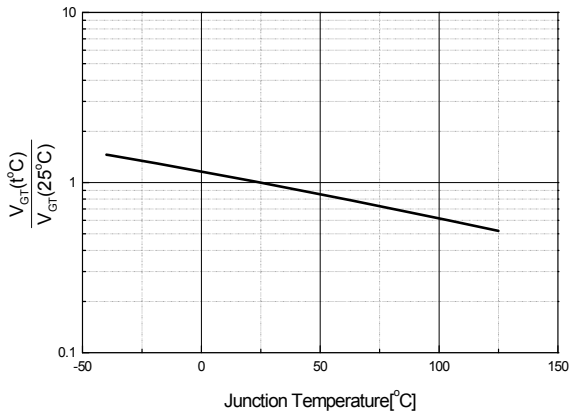
**Fig 3. Typical Forward Voltage**



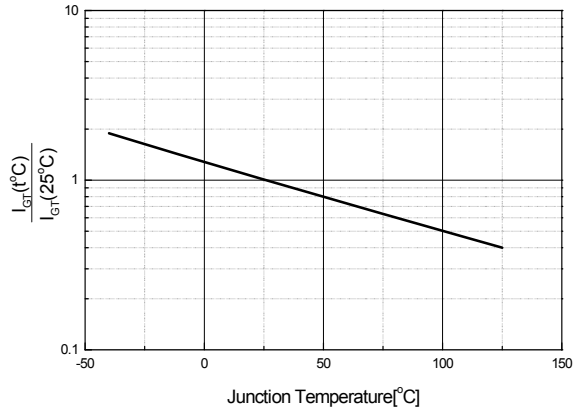
**Fig 4. Thermal Response**



**Fig 5. Typical Gate Trigger Voltage vs. Junction Temperature**



**Fig 6. Typical Gate Trigger Current vs. Junction Temperature**



# CD6C60S



Fig 7. Typical Holding Current

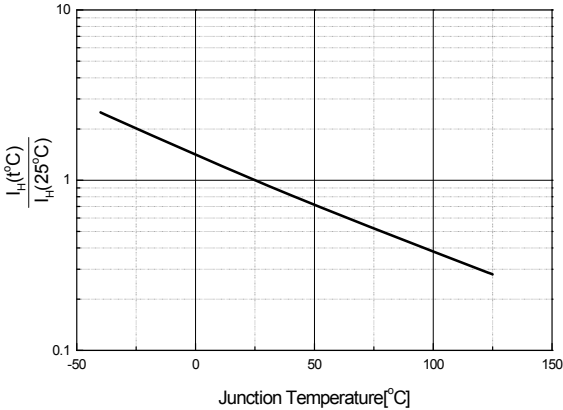
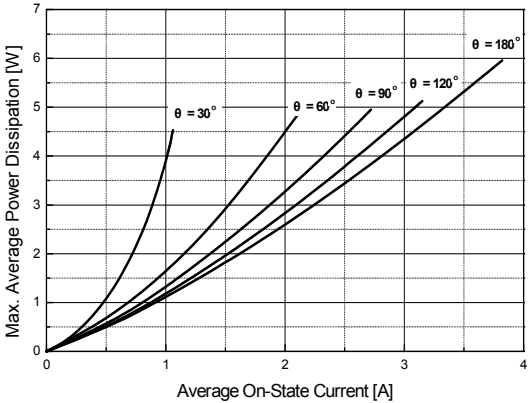


Fig 8. Power Dissipation





TO-252 Package Dimension

Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20	2.3	2.40	0.087	0.0905	0.094
B	1.30	1.4	1.50	0.051	0.055	0.059
b	0.55	0.6	0.65	0.022	0.024	0.026
b1	0.46	0.51	0.56	0.018	0.02	0.022
C	0.46	0.51	0.56	0.018	0.02	0.022
D	6.40	6.5	6.60	0.252	0.256	0.260
D1	5.20	5.3	5.40	0.205	0.2085	0.212
E	5.40	2.285	5.60	0.212	0.09	0.220
e1	2.25	2.3	2.35	0.089	0.091	0.093
e2	4.50	4.6	4.70	0.177	0.181	0.185
L1	9.25	9.5	9.75	0.346	0.365	0.384
L2	0.95	1.2	1.45	0.037	0.047	0.057

