

Silicon Controlled Rectifiers

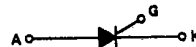
Reverse Blocking Triode Thyristors

Annular PNPN devices designed for industrial/military applications such as relay and lamp drivers, small motor controllers and drivers for larger thyristors, and in sensing and detection circuits.

- Sensitive Gate Trigger Current — 200 μ A Maximum
- Low Reverse and Forward Blocking Current — 100 μ A Maximum, $T_C = 125^\circ\text{C}$
- Low Holding Current — 5 mA Maximum
- Passivated Surface for Reliability and Uniformity
- TO-18 Hermetically Sealed Metal Package

**MCR202
thru
MCR206**

**SCRs
0.5 AMPERES RMS
30 thru 200 VOLTS**



**CASE 22-03
(TO-206AA)
STYLE 6**

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Off-State and Reverse Voltage MCR202 MCR203 MCR204 MCR206	V_{DRM} V_{RRM}	30 60 100 200	Volts
RMS On-State Current (All Conduction Angles) (See Figures 4 & 5)	$I_T(\text{RMS})$	0.5	Amps
Peak Non-Repetitive Forward Surge Current (1/2 cycle, Sine Wave, 60 Hz)	I_{TSM}	6	Amps
Circuit Fusing Considerations ($t = 8.3$ ms)	I^2t	0.15	A^2s
Peak Forward Gate Power	PGM	0.1	Watt
Average Forward Gate Power	PGF(AV)	0.01	Watt
Peak Forward Gate Current (300 μ s, 120 PPS)	I_{GFM}	1	Amp
Peak Reverse Gate Voltage	V_{GRM}	4	Volts
Operating Junction Temperature Range @ Rated V_{RRM} and V_{DRM}	T_J	-65 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	160	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	400	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($R_{GK} = 1000 \text{ Ohms}$)

Characteristic	Symbol	Min	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}) $T_C = 25^{\circ}C$ $T_C = 125^{\circ}C$	I_{DRM}, I_{RRM}	—	10 100	μA μA
Peak On-State Voltage ($I_{TM} = 1.2 \text{ A peak, } 1\text{mS, Duty Cycle } \leq 1\%$)	V_{TM}	—	1.7	Volts
Gate Trigger Current (Continuous dc) (Note 1) (Anode Voltage = 7 Vdc, $R_L = 100 \text{ Ohms}$)	I_{GT}	—	200 350	μA
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7 Vdc, $R_L = 100 \text{ Ohms}$)	V_{GT}	—	0.8 1.2	Volts
Holding Current (Anode Voltage = 7 Vdc, initiating current = 20 mA)	I_H	—	5 10	mA

Note: 1. R_{GK} current is not included in measurement.

FIGURE 1 - CURRENT DERATING
(REFERENCE: CASE TEMPERATURE)

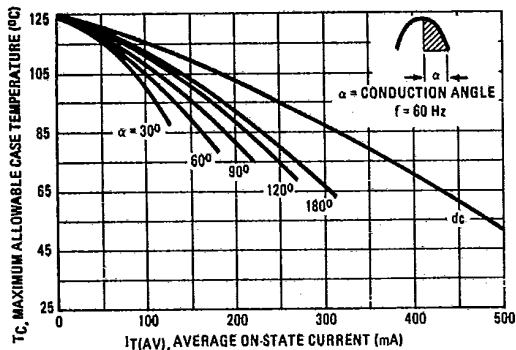


FIGURE 2 - POWER DISSIPATION

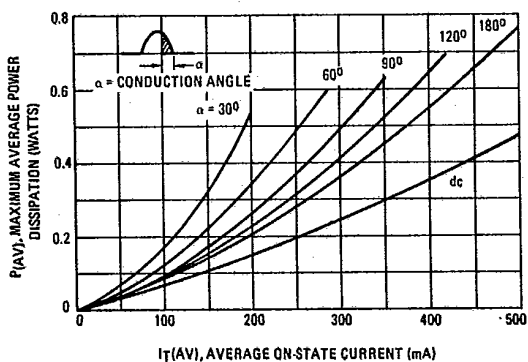


FIGURE 3 - FORWARD VOLTAGE

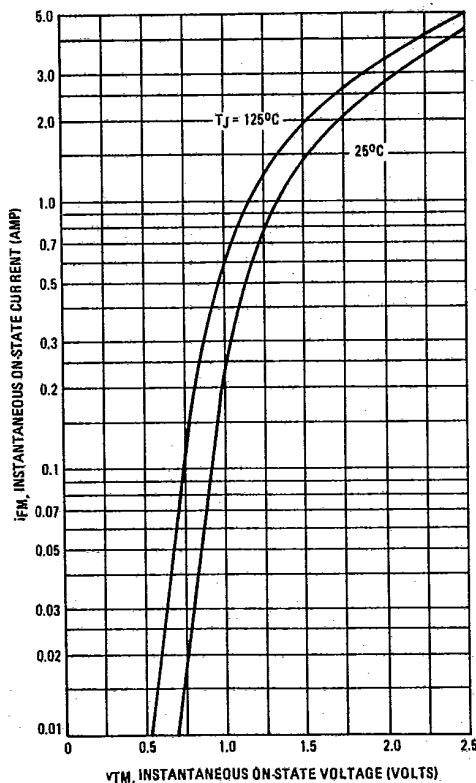


FIGURE 4 - SURGE RATINGS

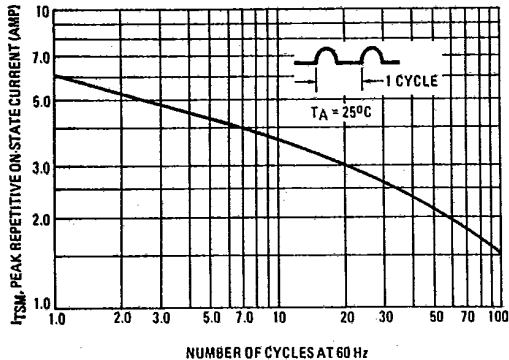


FIGURE 5 - CURRENT DERATING
(REFERENCE: AMBIENT TEMPERATURE)

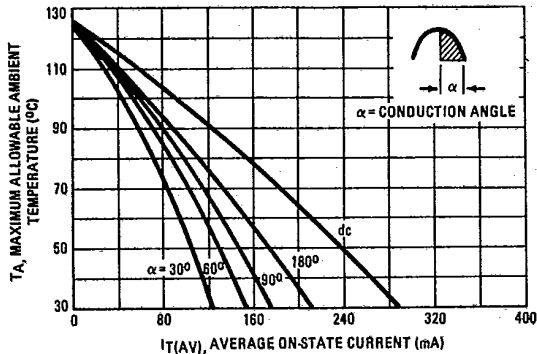


FIGURE 6 - THERMAL RESPONSE

