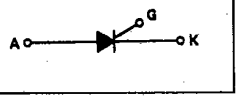
MCR202 thru MCR206

Silicon Controlled Rectifiers
Reverse Blocking Triode Thyristors

SCRs
0.5 AMPERES RMS
30 thru 200 VOLTS

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 μA Maximum
- Low Reverse and Forward Blocking Current — 100 μA Maximum, T_C = 125°C
- Low Holding Current — 5 mA Maximum
- Passivated Surface for Reliability and Uniformity
- TO-18 Hermetically Sealed Metal Package



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

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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)	$I_{T(RMS)}$	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	P_{GM}	0.1	Watt
Average Forward Gate Power	$P_{GF(AV)}$	0.01	Watt
Peak Forward Gate Current (300 μs, 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	°C
Storage Temperature Range	T_{stg}	−65 to +150	°C

T-25-11

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	150	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	400	°C/W

ELECTRICAL CHARACTERISTICS (R_{GK} = 1000 Ohms)

Characteristic		Symbol	Min	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}) T_C = 25°C T_C = 125°C		I_{DRM}, I_{RRM}	— —	10 100	μA μA
Peak On-State Voltage (I_{TM} = 1.2 A peak, ImS, Duty Cycle ≤ 1%)		V_{TM}	—	1.7	Volts
Gate Trigger Current (Continuous dc) (Note 1) (Anode Voltage = 7 Vdc, R_L = 100 Ohms)	T_C = 25°C T_C = −65°C	I_{GT}	— —	200 350	μA
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7 Vdc, R_L = 100 Ohms)	T_C = 25°C T_C = −65°C T_C = 125°C	V_{GT}	— — 0.1	0.8 1.2 —	Volts
Holding Current (Anode Voltage = 7 Vdc, initiating current = 20 mA)	T_C = 25°C T_C = −65°C	I_H	— —	5 10	mA

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

FIGURE 1 – CURRENT DERATING
(REFERENCE: CASE TEMPERATURE)

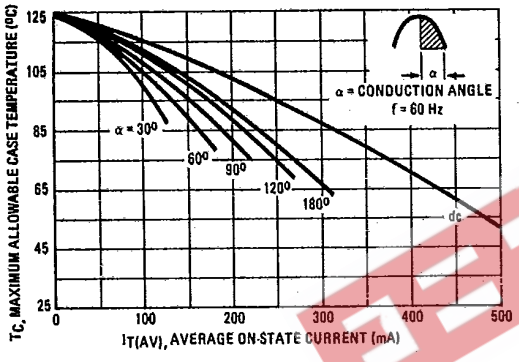

FIGURE 2 – POWER DISSIPATION

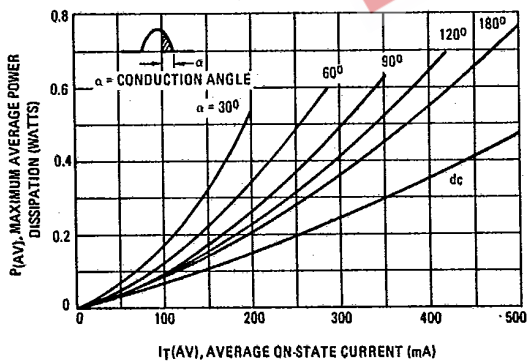

FIGURE 3 – FORWARD VOLTAGE

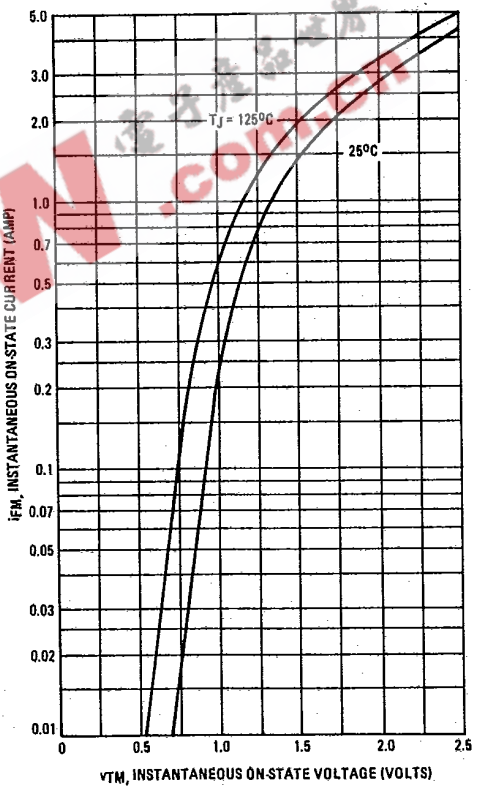

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FIGURE 4 – SURGE RATINGS

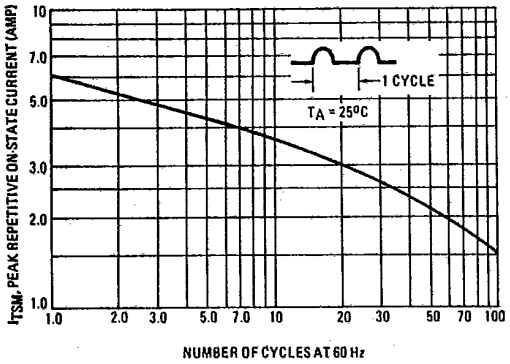


FIGURE 5 – CURRENT DERATING
(REFERENCE: AMBIENT TEMPERATURE)

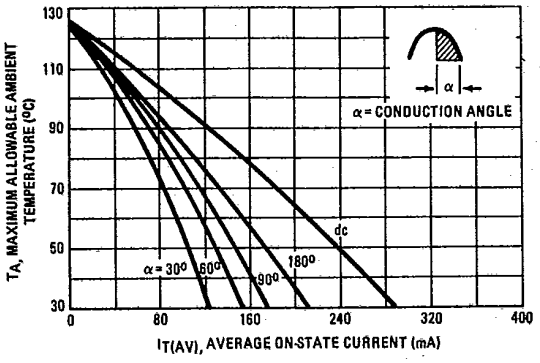
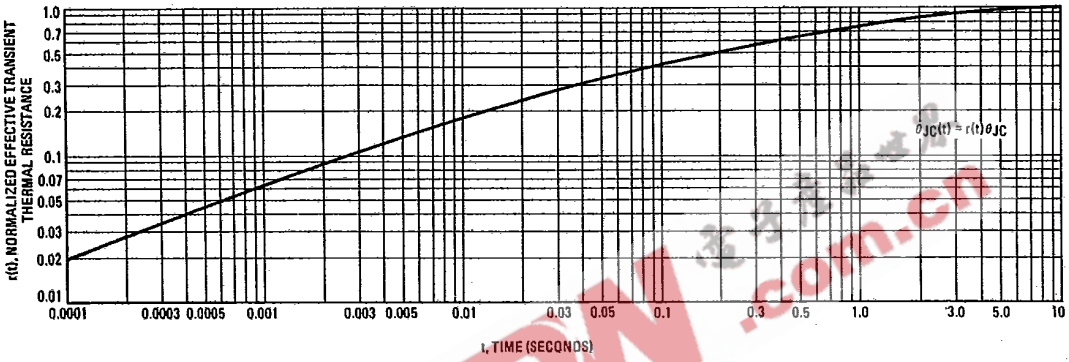


FIGURE 6 – THERMAL RESPONSE



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