

Silicon Controlled Rectifiers

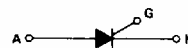
Reverse Blocking Triode Thyristors

... designed for industrial and consumer applications such as power supplies; battery chargers; temperature, motor, light, and welder controls.

- Economical for a Wide Range of Uses
- High Surge Current — $I_{TSM} = 550$ Amps
- Rugged Construction in Either Pressfit, Stud, or Isolated Stud
- Glass Passivated Junctions for Maximum Reliability

MCR63-()A
Series
MCR64 Series
MCR65 Series

SCRs
55 AMPERES RMS
50 thru 800 VOLTS



MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage, Note 1 ($T_J = 25$ to 125°C , Gate Open)	V_{DRM} or V_{RRM}	50 100 200 400 600 800	Volts
Non-Repetitive Peak Reverse Blocking Voltage ($t \leq 5$ ms), Note 1	V_{RSM}	75 150 300 500 700 900	Volts
Forward Current RMS	$I_T(\text{RMS})$	55	Amps
Peak Surge Current (One Cycle, 60 Hz, $T_J = -40$ to $+125^\circ\text{C}$)	I_{TSM}	550	Amps
Circuit Fusing Considerations ($t = 8.3$ ms)	I^2t	1255	A^2s
Peak Gate Power	P_{GFM}	20	Watts
Average Gate Power (Pulse Width ≤ 2 μs)	$P_{GF(AV)}$	0.5	Watt
Peak Forward Gate Current	I_{GFM}	2	Amps
Peak Gate Voltage — Forward Reverse	V_{GFM} V_{GRM}	10 10	Volts
Operating Junction Temperature Range	T_J	-40 to $+125$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to $+150$	$^\circ\text{C}$
Stud Torque	—	30	in. lb.

Note 1. V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.



CASE 263-04
STYLE 1
MCR64 Series



CASE 174-04
STYLE 1
MCR63-()A Series



CASE 311-02
STYLE 1
MCR65 Series

MCR63-()A Series • MCR64 Series • MCR65 Series

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case Pressfit and Stud Isolated Stud	$R_{\theta JC}$	1 1.1	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
Peak Forward or Reverse Blocking Current ($V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}, \text{ Gate Open}$) $T_J = 25^{\circ}\text{C}$ $T_J = 125^{\circ}\text{C}$	I_{DRM}, I_{RRM}	— —	10 2	μA mA
Forward "On" Voltage ($I_{TM} = 175 \text{ A Peak}$)	V_{TM}	—	2	Volts
Gate Trigger Current (Continuous dc) ($V_D = 12 \text{ V}, R_L = 50 \Omega$) $T_C = 25^{\circ}\text{C}$ $T_C = -40^{\circ}\text{C}$	I_{GT}	— —	40 75	mA
Gate Trigger Voltage (Continuous dc) ($V_D = 12 \text{ V}, R_L = 50 \Omega$) $T_C = 25^{\circ}\text{C}$ $T_C = -40^{\circ}\text{C}$ ($V_D = \text{Rated } V_{DRM}, R_L = 1 \text{ k}\Omega, T_J = 125^{\circ}\text{C}$)	V_{GT}	— — 0.2	3 3.5 —	Volts
Holding Current ($V_D = 12 \text{ V}, R_L = 50 \Omega, \text{ Gate Open}$)	I_H	—	60	mA
Forward Voltage Application Rate ($T_J = 125^{\circ}\text{C}, V_D = \text{Rated } V_{DRM}$)	dv/dt	50	—	$\text{V}/\mu\text{s}$

FIGURE 1 — AVERAGE CURRENT DERATING

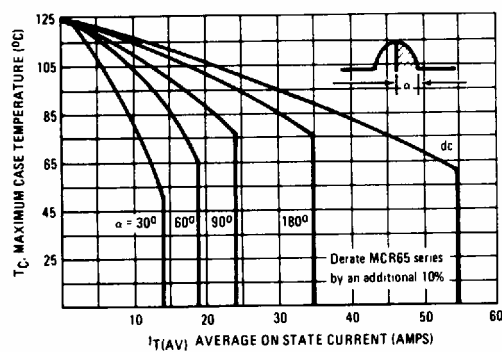


FIGURE 2 — POWER DISSIPATION

