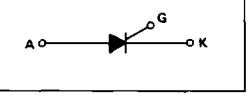
Silicon Controlled Rectifiers
Reverse Blocking Triode Thyristors

MCR63-( )A Series
MCR64 Series
MCR65 Series

SCRs
55 AMPERES RMS
50 thru 800 VOLTS

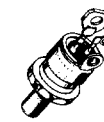
. . . designed for industrial and consumer applications such as power supplies; battery chargers; temperature, motor, light, and welder controls.

- 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



CASE 263-04
STYLE 1
MCR64 Series

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



CASE 311-02
STYLE 1
MCR65 Series

MAXIMUM RATINGS (T_J = 25°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) MCR63-( )A MCR64- MCR65-	2 3 4 6 8 10	V_{DRM} or V_{RRM}	50 100 200 400 600 800	Volts
Non-Repetitive Peak Reverse Blocking Voltage (t ≤ 5 ms), Note 1 MCR63-( )A MCR64- MCR65-	2 3 4 6 8 10	V_{RSM}	75 150 300 500 700 900	Volts
Forward Current RMS		$I_{T(RMS)}$	55	Amps
Peak Surge Current (One Cycle, 60 Hz, T_J = −40 to +125°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	°C
Storage Temperature Range		T_{stg}	−40 to +150	°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.

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THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted.)

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

FIGURE 1 – AVERAGE CURRENT DERATING

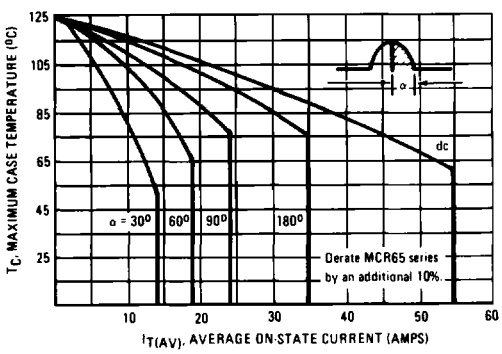

FIGURE 2 – POWER DISSIPATION