

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

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
MCR63-()A			
MCR64-			
MCR65-			
Non-Repetitive Peak Reverse Blocking Voltage ($t \leq 5$ ms, Note 1)	V_{RSM}	75 150 300 500 700 900	Volts
MCR63-()A			
MCR64-			
MCR65-			
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 $\leq 2 \mu\text{s}$)	$P_{GF(\text{AV})}$	0.5	Watt
Peak Forward Gate Current	I_{GFM}	2	Amps
Peak Gate Voltage — Forward	V_{GFM}	10	Volts
Reverse	V_{GRM}	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.

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

**SCRs
55 AMPERES RMS
50 thru 800 VOLTS**



**CASE 283-04
STYLE 1
MCR64 Series**



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



**CASE 311-02
STYLE 1
MCR65 Series**



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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case Presafit and Stud	R _{θJC}	1	°C/W
Isolated Stud		1.1	

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)	I _{DRM} , I _{RRM}	—	10	μA
		—	2	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)	I _{GT}	—	40	mA
		—	75	
Gate Trigger Voltage (Continuous dc) (V _D = 12 V, R _L = 50 Ω)	V _{GT}	—	3	Volts
		—	3.5	
(V _D = Rated V _{DRM} , R _L = 1 kΩ, T _J = 125°C)		0.2	—	
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

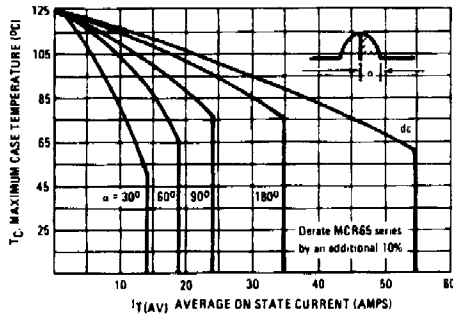


FIGURE 2 - POWER DISSIPATION

