New Jersey Semi-Conductor Products, Inc.

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MCR63-1 thru 10
MCR64-1 thru 10
MCR65-1 thru 10

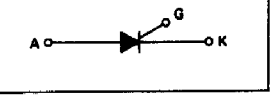
Silicon Controlled Rectifier

Reverse Blocking Triode Thyristor

. . . 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

SCRs
55 AMPERES RMS
25 thru 800 VOLTS




MCR64 Series


MCR63 Series


MCR65 Series

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage	-1	V_{DRM}[1] or V_{RRM}	25	Volts
	-2		50	
	-3		100	
MCR63	-4		200	
MCR64	-5		300	
MCR65	-6		400	
	-7		500	
	-8		600	
	-9		700	
	-10		800	
Non-Repetitive Peak Reverse Blocking Voltage (t ≤ 5 ms)	-1	V_{RSM}	35	Volts
	-2		75	
	-3		150	
MCR63	-4		300	
MCR64	-5		400	
MCR65	-6		500	
	-7		600	
	-8		700	
	-9		800	
	-10		900	
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_J = −40 to +125°C, t = 1 to 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.

Quality Semi-Conductors

THERMAL CHARACTERISTICS

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

(1) V_{RRM} for all types can be applied on a continuous dc basis without incurring damage Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode.

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

Characteristic		Symbol	Min	Max	Unit
Peak Forward or Reverse Blocking Current (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