New Jersey Semi-Conductor Products, Inc.

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MCR218

Series

SCRs

8 AMPERES RMS

50 thru 800 VOLTS

Thyristors Silicon-Controlled Rectifiers

... designed primarily for half-wave ac control applications, such as motor controls, heating controls and power supplies; or wherever half-wave silicon gate-controlled, solid-state devices are needed.

- Glass-Passivated Junctions
- Blocking Voltage to 800 Volts
- TO-220 Construction Low Thermal Resistance, High Heat Dissipation and Durability





MAXIMUM RATINGS (T_J = 25°C unless otherwise noted.)

Rating	Symbol	Value	Unit Volts	
Peak Repetitive Forward and Reverse Voltage ⁽¹⁾ (T _J = 25 to 125°C, Gate Open) MCR218-2 MCR218-3 MCR218-4 MCR218-6 MCR218-8 MCR218-10	V _{DRM} V _{RRM}	50 100 200 400 600 800		
Forward Current RMS (All Conduction Angles)	IT(RMS)	8	Amps	
Peak Forward Surge Current (1/2 Cycle, Sine Wave, 60 Hz)	Чтsm	80	Amps	
Circuit Fusing Considerations (t = 8.3 ms)	² t	26	A ² s	
Forward Peak Gate Power	PGM	5	Watts	
Forward Average Gate Power	PG(AV)	0.5	Watt	
Forward Peak Gate Current	IGM	2	Amps	
Operating Junction Temperature Range	Тј	-40 to +125	°C	
Storage Temperature Range	Tstg	40 to +150	°C	

VDRM and VRRM 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.



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

MCR218 Series

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	2	°C/W

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

Characteristic	Symbol	Min	Тур	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
Peak On-State Voltage ⁽¹⁾ (I _{TM} = 16 A Peak)	∨тм	-	1.5	1.8	Volts
Gate Trigger Current (Continuous dc) (V _D = 12 V, R _L = 100 Ohms)	IGT	_	10	25	mA
Gate Trigger Voltage (Continuous dc) (V _D = 12 V, R _L = 100 Ohms) (Rated V _{DRM} , R _L = 1000 Ohms, TJ ≠ 125°C)	VGT		_	1.5	Voits
Holding Current (Anode Voltage = 24 Vdc, Peak Initiating On-State Current = 0.5 A, 0.1 to 10 ms Pulse, Gate Trigger Source = 7 V, 20 Ohms)	ιн	-	16	30	mA
Critical Rate-of-Rise of Off-State Voltage (V _D = Rated V _{DRM} , Exponential Waveform, Gate Open, T _J = 125°C)	dv/dt	-	100	-	V/µs

1. Pulse Test: Pulse Width = 1 ms, Duty Cycle ≤ 2%.



FIGURE 1 --- CURRENT DERATING



FIGURE 3 - NORMALIZED GATE TRIGGER CURRENT

