

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
 SPRINGFIELD, NEW JERSEY 07081
 U.S.A.

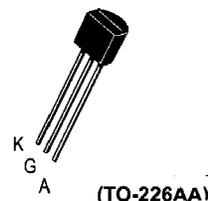
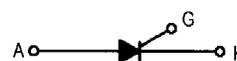
Silicon Controlled Rectifiers

... designed and tested for repetitive peak operation required for CD ignition, fuel ignitors, flash circuits, motor controls and low-power switching applications.

- 150 Amperes for 2 μ s Safe Area
- High dv/dt
- Very Low Forward "On" Voltage at High Current
- Low-Cost TO-226AA (TO-92)

**MCR22-2
 thru
 MCR22-8**

**SCRs
 1.5 AMPERES RMS
 50 thru 600 VOLTS**



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

Rating	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage ($R_{GK} = IK, T_J = 25 \text{ to } 125^\circ\text{C}$)	V_{DRM} V_{RRM}		Volts
MCR22-2		50	
MCR22-3		100	
MCR22-4		200	
MCR22-6		400	
MCR22-8		600	
On-State Current RMS (All Conduction Angles)	$I_T(\text{RMS})$	1.5	Amps
Peak Non-repetitive Surge Current, $T_A = 25^\circ\text{C}$ (1/2 Cycle, Sine Wave, 60 Hz)	I_{TSM}	15	Amps
Circuit Fusing Considerations ($t = 8.3 \text{ ms}$)	I^2t	0.9	A^2s
Peak Gate Power, $T_A = 25^\circ\text{C}$	P_{GM}	0.5	Watt
Average Gate Power, $T_A = 25^\circ\text{C}$	$P_{G(AV)}$	0.1	Watt
Peak Forward Gate Current, $T_A = 25^\circ\text{C}$ (300 μ s, 120 PPS)	I_{FGM}	0.2	Amp
Peak Reverse Gate Voltage	V_{RGM}	5	Volts
Operating Junction Temperature Range @ Rated V_{RRM} and V_{DRM}	T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$
Lead Solder Temperature (Lead Length $\geq 1/16''$ from case, 10 s Max)	—	+230	$^\circ\text{C}$

NJ Semi-Conductors reserves the right to change test conditions, parameter 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.

Quality Semi-Conductors



MCR22-2 thru MCR22-8

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	50	$^{\circ}C/W$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	160	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted. $R_{GK} = 1000$ Ohms.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current ($V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}$)	I_{DRM}, I_{RRM}	—	—	10 200	μA μA
Forward "On" Voltage ($I_{TM} = 1$ A Peak)	V_{TM}	—	1.2	1.7	Volts
Gate Trigger Current (Continuous dc) ⁽¹⁾ (Anode Voltage = 6 Vdc, $R_L = 100$ Ohms)	I_{GT}	—	30	200 500	μA
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7 Vdc, $R_L = 100$ Ohms)	V_{GT}	—	—	0.8 1.2	Volts
Gate Trigger Voltage (Continuous dc) (Anode Voltage = Rated V_{DRM} , $R_L = 100$ Ohms)	V_{GD}	0.1	—	—	—
Holding Current (Anode Voltage = 12 Vdc)	I_H	—	2	5 10	mA
Forward Voltage Application Rate ($T_C = 125^{\circ}C$)	dv/dt	—	25	—	V/ μs

1. R_{GK} Current Not Included in Measurement.

CURRENT DERATING

FIGURE 1 — MAXIMUM CASE TEMPERATURE

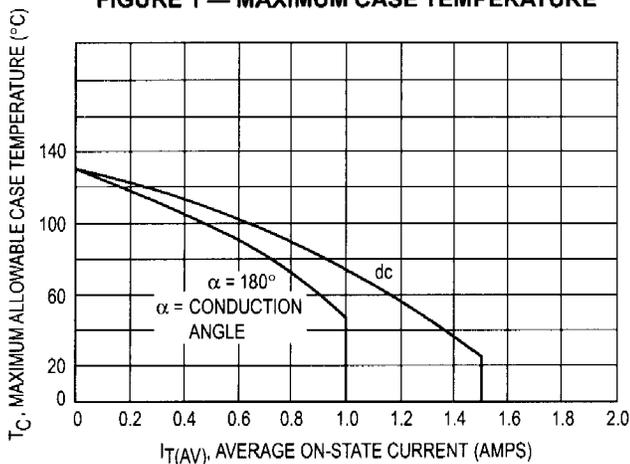


FIGURE 2 — MAXIMUM AMBIENT TEMPERATURE

