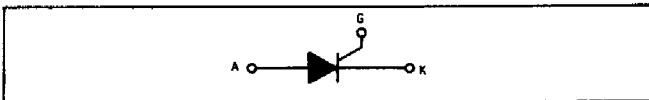


MCR201 (SILICON)
thru
MCR206

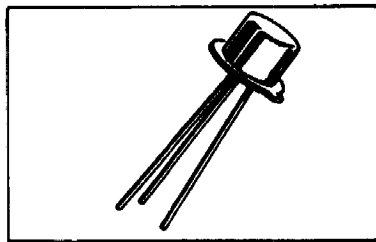


SIGNAL THYRISTORS

... Annular PNP devices designed for industrial/military applications such as relay and lamp drivers, small motor controllers and drivers for larger thyristors, and in sensing and detection circuits.

- Sensitive Gate Trigger Current – 200 μ A Maximum
- Low Reverse and Forward Blocking Current – 100 μ A Maximum, $T_C = 125^\circ\text{C}$
- Low Holding Current – 5.0 mA Maximum
- Passivated Surface for Reliability and Uniformity
- TO-18 Metal Package

SILICON CONTROLLED RECTIFIERS
0.5 AMPERE RMS
15 thru 200 VOLTS



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage	V_{RRM}	15 30 60 100 150 200	Volts
Forward Current RMS (See Figures 4 & 5) (All Conduction Angles)	$I_T(\text{RMS})$	0.5	Amp
Peak Forward Surge Current, $T_A = 25^\circ\text{C}$ (1/2 cycle, Sine Wave, 60 Hz)	I_{TSM}	6.0	Amp
Circuit Fusing Considerations, $T_A = 25^\circ\text{C}$ ($t = 1.0$ to 8.3 ms)	I^2t	0.15	A^2s
Peak Gate Power – Forward, $T_A = 25^\circ\text{C}$	P_{GM}	0.1	Watt
Average Gate Power – Forward, $T_A = 25^\circ\text{C}$	$P_{GF(AV)}$	0.01	Watt
Peak Gate Current – Forward, $T_A = 25^\circ\text{C}$ (300 μs , 120 PPS)	I_{GFM}	1.0	Amp
Peak Gate Voltage – Reverse	V_{GRM}	4.0	Volts
Operating Junction Temperature Range @ Rated V_{RRM} and $V_{DRM}(1)$	T_J	-65 to +110	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	150	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	θ_{JA}	400	$^\circ\text{C/W}$

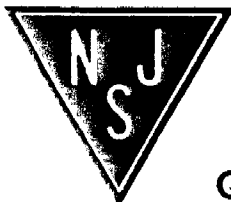
STYLE 6:
PIN 1. CATHODE
2. GATE
3. ANODE

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.31	5.94	0.209	0.230
B	4.52	4.95	0.178	0.195
C	4.32	5.33	0.170	0.210
D	0.408	0.533	0.016	0.021
E	—	0.762	—	0.030
F	0.408	0.483	0.016	0.019
G	2.64 BSC	—	0.100 BSC	—
H	0.914	1.17	0.036	0.046
J	0.711	1.22	0.028	0.048
K	12.70	—	0.500	—
L	6.35	—	0.250	—
M	45 $^\circ$ BSC	—	45 $^\circ$ BSC	—
N	1.27 BSC	—	0.050 BSC	—
P	—	1.27	—	0.050

All JEDEC notes and dimensions apply.
(TO-18)

(1) Higher Temperature Devices Available – Consult Factory.

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.



MCR201 thru MCR206 (continued)

ELECTRICAL CHARACTERISTICS (R_{GK} = 1000 Ohms)

Characteristic		Symbol	Min	Max	Unit
Peak Forward Blocking Voltage (Note 1)	MCR201	V _{DRM}	—	—	Volts
	MCR202				
	MCR203				
	MCR204				
	MCR205				
	MCR206				
Peak Forward Blocking Current (Rated V _{DRM} @ T _C = 110°C)		I _{DRM}	—	100	μA
Peak Reverse Blocking Current (Rated V _{RRM} @ T _C = 110°C)		I _{RRM}	—	1.5	μA
Forward "On" Voltage (Note 2) (I _{TM} = 500 mA peak @ T _A = 25°C)		V _{TM}	—	1.7	Volts
Gate Trigger Current (Continuous dc) (Note 3) (Anode Voltage = 7.0 Vdc, R _L = 100 Ohms)	T _C = 25°C	I _{GT}	—	200	μA
	T _C = -65°C			350	
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7.0 Vdc, R _L = 100 Ohms) (Anode Voltage = Rated V _{DRM})	T _C = 25°C	V _{GT}	—	0.8	Volts
	T _C = -65°C	V _{GD}	—	1.2	
	T _C = 110°C		0.1	—	
Holding Current (Anode Voltage = 7.0 Vdc, initiating current = 20 mA)	T _C = 25°C	I _H	—	5.0	mA
	T _C = -65°C			10	

1. Ratings apply for zero or negative gate voltage but positive gate voltage shall not be applied concurrently with a negative potential on the anode. When checking forward or reverse blocking capability, thyristor devices should not be tested with a constant current source in a manner that the voltage applied exceeds the rated blocking voltage.
2. Forward current applied for 1.0 ms maximum duration, duty cycle ≤ 1.0%.
3. R_{GK} current is not included in measurement.

FIGURE 1 - SURGE RATINGS

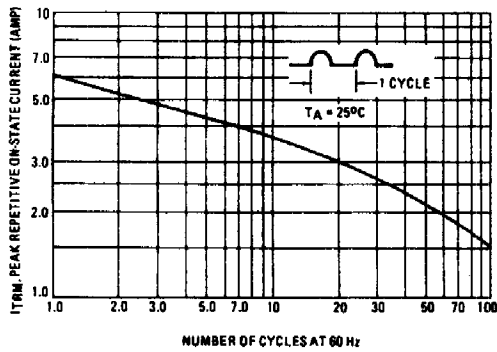


FIGURE 2 - POWER DISSIPATION

