

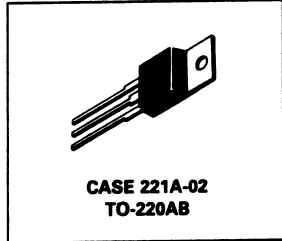
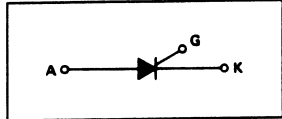
Thyristors Silicon Controlled Rectifiers

... designed primarily for half-wave ac control applications, such as motor controls, heating controls and power supply crowbar circuits.

- Glass Passivated Junctions with Center Gate Fire for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Constructed for Low Thermal Resistance, High Heat Dissipation and Durability
- Blocking Voltage to 1000 Volts
- 300 A Surge Current Capability

**2N6504
 thru
 2N6509
 MCR225-5
 MCR225-7
 MCR225-9
 MCR225-12**

**SCRs
 50 thru 100 VOLTS**



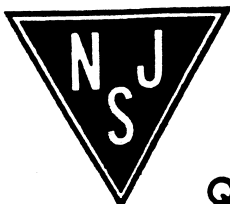
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage (1)	V_{RRM}	50 100 200 300 400 500 600 700 800 1000	Volts
Forward Current ($T_C = 85^\circ\text{C}$) (All Conduction Angles)	$I_T(\text{RMS})$ $I_T(\text{AV})$	25 16	Amps
Peak Non-Repetitive Surge Current — 8.3 ms (1/2 Cycle, Sine Wave) 1.5 ms	I_{TSM}	300 350	Amps

*Indicates JEDEC Registered Data.

(cont.)

(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 should not be tested for blocking capability in a manner such that the voltage supplied exceeds the rated blocking voltage.



2N6504 thru 2N6509 • MCR225-5 • MCR225-7 • MCR225-9 • MCR225-12

MAXIMUM RATINGS — continued

Rating	Symbol	Value	Unit
Forward Peak Gate Power	PGM	20	Watts
Forward Average Gate Power	PG(AV)	0.5	Watt
Forward Peak Gate Current	IGM	2	Amps
Operating Junction Temperature Range	T _J	-40 to +125	°C
Storage Temperature Range	T _{stg}	-40 to +150	°C

*THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	1.5	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward Blocking Voltage (T _J = 125°C)	V _{DRM}	50 100 200 300 400 500 600 700 800 1000	—	—	Volts
*Peak Forward or Reverse Blocking Current (Rated V _{DRM} or V _{RRM}) T _J = 25°C T _J = 125°C	I _{DRM} , I _{RRM}	—	—	10 2	μA mA
*Forward "On" Voltage (1) (I _{TM} = 50 A)	V _{TM}	—	—	1.8	Volts
*Gate Trigger Current (Continuous dc) (Anode Voltage = 12 Vdc, R _L = 100 Ohms) T _C = 25°C T _C = -40°C	I _{GT}	—	— 25	40 75	mA
*Gate Trigger Voltage (Continuous dc) (Anode Voltage = 12 Vdc, R _L = 100 Ohms, T _C = -40°C)	V _{GT}	—	1	1.5	Volts
Gate Non-Trigger Voltage (Anode Voltage = Rated V _{DRM} , R _L = 100 Ohms, T _J = 125°C)	V _{GD}	0.2	—	—	Volts
*Holding Current (Anode Voltage = 12 Vdc, T _C = -40°C)	I _H	—	35	40	mA
*Turn-On Time (I _{TM} = 25 A, I _{GT} = 50 mAdc)	t _{gt}	—	1.5	2	μs
Turn-Off Time (V _{DRM} = rated voltage) (I _{TM} = 25 A, I _R = 25 A) (I _{TM} = 25 A, I _R = 25 A, T _J = 125°C)	t _q	—	— 15 35	—	μs
Critical Rate of Rise of Off-State Voltage (Gate Open, Rated V _{DRM} , Exponential Waveform)	dv/dt	—	50	—	V/μs

*Indicates JEDEC Registered Data.
 (1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

