

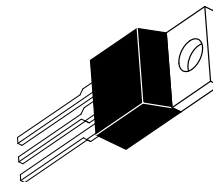
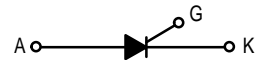
Silicon Controlled Rectifiers Reverse Blocking Triode Thyristors

... designed primarily for full-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 and Center Gate Fire for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Blocking Voltage to 800 Volts
- Different Leadform Configurations, Suffix (2) thru (6) available, see Leadform Options (Section 4) for Information

**C122()1
Series**

**SCRs
8 AMPERES RMS
50 thru 800 VOLTS**



**CASE 221A-04
(TO-220AB)
STYLE 3**

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

Rating	Symbol	Value	Unit
Repetitive Peak Off-State Voltage ⁽¹⁾ (T _J = 25 to 100°C, Gate Open)	V _{DRM}		Volts
Repetitive Peak Reverse Voltage	V _{RRM}	50 100 200 400 600 800	
Peak Non-repetitive Reverse Voltage ⁽¹⁾	V _{RSM}	75 200 300 500 700 800	Volts
Forward Current RMS (All Conduction Angles)	I _{T(RMS)}	8	Amps
Peak Forward Surge Current (1/2 Cycle, Sine Wave, 60 Hz)	I _{TSM}	90	Amps
Circuit Fusing Considerations (t = 8.3 ms)	I ² t	34	A ² s

1. V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, (cont.) 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.

MAXIMUM RATINGS — continued

Rating	Symbol	Value	Unit
Forward Peak Gate Power (t = 10 μs)	P _{GM}	5	Watts
Forward Average Gate Power	P _{G(AV)}	0.5	Watt
Forward Peak Gate Current	I _{GM}	2	Amps
Operating Junction Temperature Range	T _J	-40 to +100	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	1.8	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (V _{AK} = Rated V _{DRM} or V _{RRM} , Gate Open) T _C = 25°C T _C = 100°C	I _{DRM} , I _{RRM}	—	—	10 0.5	μA mA
Peak On-State Voltage ⁽¹⁾ (I _{TM} = 16 A Peak, T _C = 25°C)	V _{TM}	—	—	1.83	Volts
Gate Trigger Current (Continuous dc) (V _D = 6 V, R _L = 91 Ohms, T _C = 25°C) (V _D = 6 V, R _L = 45 Ohms, T _C = -40°C)	I _{GT}	—	—	25 40	mA
Gate Trigger Voltage (Continuous dc) (V _D = 6 V, R _L = 91 Ohms, T _C = 25°C) (V _D = 6 V, R _L = 45 Ohms, T _C = -40°C) (V _D = Rated V _{DRM} , R _L = 1000 Ohms, T _C = 100°C)	V _{GT}	— — 0.2	— — —	1.5 2 —	Volts
Holding Current (V _D = 24 Vdc, I _T = 0.5 A, 0.1 to 10 ms Pulse, Gate Trigger Source = 7 V, 20 Ohms) T _C = 25°C T _C = -40°C	I _H	— —	— —	30 60	mA
Turn-Off Time (V _D = Rated V _{DRM}) (I _{TM} = 8 A, I _R = 8 A)	t _q	—	50	—	μs
Critical Rate-of-Rise of Off-State Voltage (V _D = Rated V _{DRM} , Linear, T _C = 100°C)	dv/dt	—	50	—	V/μs

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

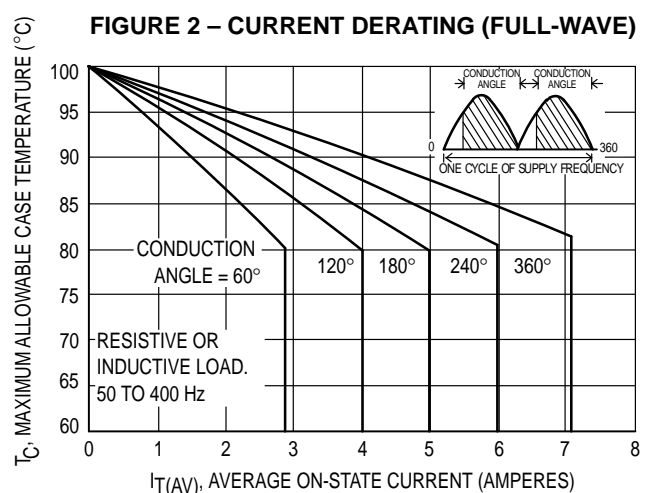
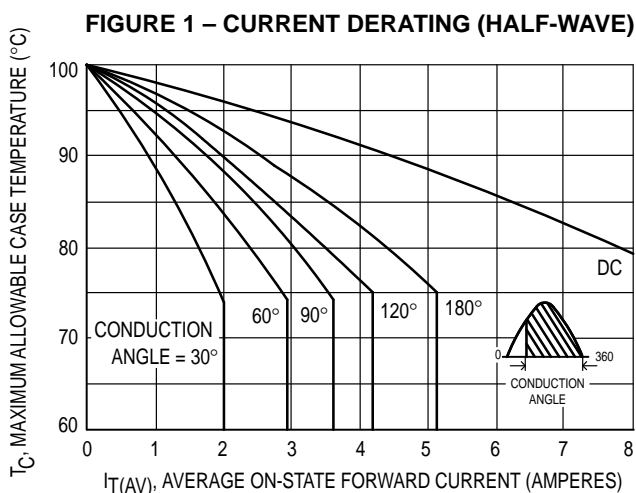


FIGURE 3 – MAXIMUM POWER DISSIPATION (HALF-WAVE)

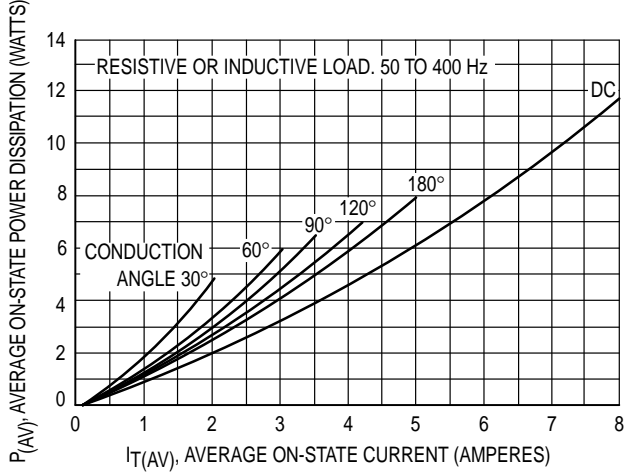


FIGURE 4 – MAXIMUM POWER DISSIPATION (FULL-WAVE)

