

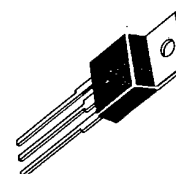
Silicon Controlled Rectifier Reverse Blocking Triode Thyristor

... 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 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 600 Volts
- Different Lead Form Configurations,
Suffix (2) thru (6) available, see Thyristor Selection Guide for Information

C122 Series

SCRs
8 AMPERES RMS
50 thru 800 VOLTS



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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive Peak Off-State Voltage, Note 1	V_{DRM}	50	Volts
Repetitive Peak Reverse Voltage	V_{RRM}	100	
C122F		200	
C122A		400	
C122B		600	
C122D		800	
C122M			
C122N			
Non-Repetitive Peak Reverse Voltage	V_{RSM}	75	Volts
C122F		200	
C122A		300	
C122B		500	
C122D		700	
C122M		800	
C122N			
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^2t	34	A ² s

Note 1. V_{DRM} for all types can be applied on a continuous dc basis without incurring damage. Ratings apply for zero or negative gate voltage. (cont.)
Devices should not be tested for blocking capability in a manner such that the voltage supplied exceeds the rated blocking voltage.

MAXIMUM RATINGS — continued

Rating	Symbol	Value	Unit
Forward Peak Gate Power ($t = 10 \mu s$)	PGM	5	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 +100	°C
Storage Temperature Range	T_{stg}	-40 to +125	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.8	°C/W

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ C$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}) $T_C = 25^\circ C$ $T_C = 100^\circ C$	I_{DRM}, I_{RRM}	—	—	10 0.5	μA mA
Peak On-State Voltage, Note 1 ($I_{TM} = 16 A$ Peak, $T_C = 25^\circ C$)	V_{TM}	—	—	1.83	Volts
Gate Trigger Current (Continuous dc) ($V_D = 6 V, R_L = 91 \text{ Ohms}, T_C = 25^\circ C$) ($V_D = 6 V, R_L = 45 \text{ Ohms}, T_C = -40^\circ C$)	I_{GT}	—	—	25 40	mA
Gate Trigger Voltage (Continuous dc) ($V_D = 6 V, R_L = 91 \text{ Ohms}, T_C = 25^\circ C$) ($V_D = 6 V, R_L = 45 \text{ Ohms}, T_C = -40^\circ C$) ($V_D = \text{Rated } V_{DRM}, R_L = 1000 \text{ Ohms}, T_C = 100^\circ C$)	V_{GT}	— — 0.2	— — —	1.5 2 —	Volts
Holding Current ($V_D = 24 V_{dc}, I_T = 0.5 A, 0.1$ to 10 ms Pulse, Gate Trigger Source = $7 V, 20 \text{ Ohms}$) $T_C = 25^\circ C$ $T_C = -40^\circ C$	I_H	— —	— —	30 60	mA
Turn-Off Time ($V_D = \text{Rated } V_{DRM}$) ($I_{TM} = 8 A, I_R = 8 A$)	t_q	—	50	—	μs
Critical Rate-of-Rise of Off-State Voltage ($V_D = \text{Rated } V_{DRM}$, Linear, $T_C = 100^\circ C$)	dv/dt	—	50	—	$V/\mu s$

Note 1. Pulse Test: Pulse Width = 1 ms, Duty Cycle $\leq 2\%$.

FIGURE 1 — CURRENT DERATING (HALF-WAVE)

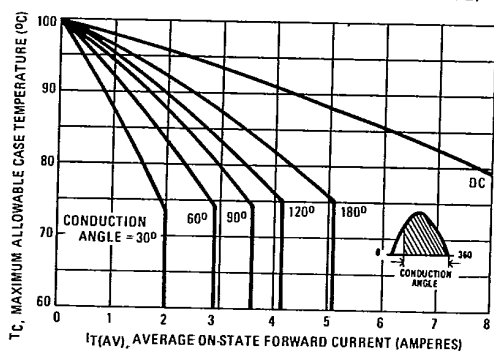
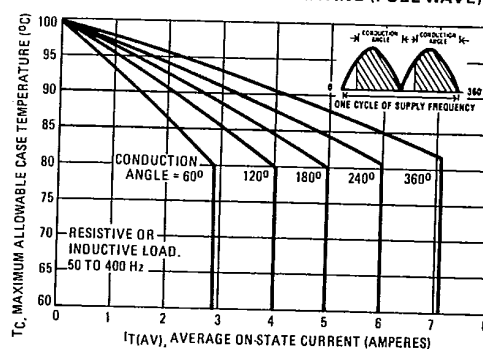


FIGURE 2 — CURRENT DERATING (FULL-WAVE)



C122 Series

FIGURE 3 - MAXIMUM POWER DISSIPATION (HALF-WAVE)

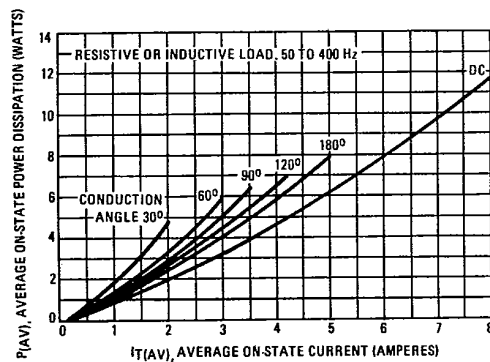


FIGURE 4 - MAXIMUM POWER DISSIPATION (FULL-WAVE)

