

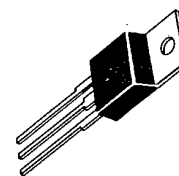
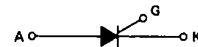
Silicon Controlled Rectifier Reverse Blocking Triode Thyristor

... 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} | 100 200 400 600 800 | |
| Non-Repetitive Peak Reverse Voltage | 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^2t | 34 | A^2s |

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 μs) | 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 |

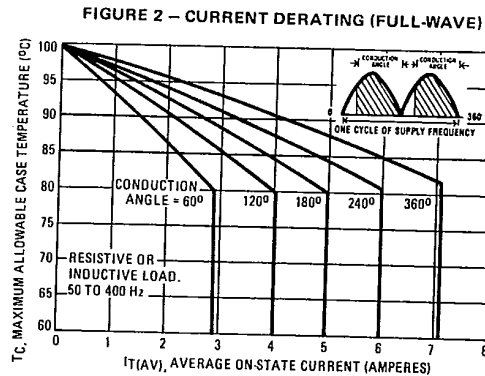
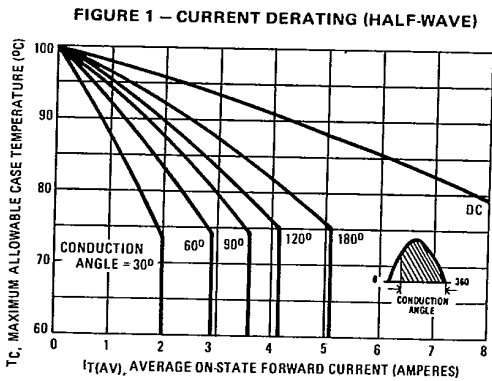
THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|------------------|-----|------|
| Thermal Resistance, Junction to Case | R _{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 (Rated V _{DRM} or V _{RRM}) T _C = 25°C T _C = 100°C | I _{DRM} , I _{RRM} | — | — | 10 0.5 | μA mA |
| Peak On-State Voltage, Note 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 |

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



C122 Series

FIGURE 3 - MAXIMUM POWER DISSIPATION (HALF-WAVE)

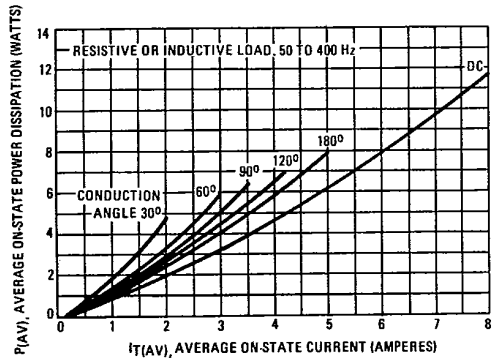
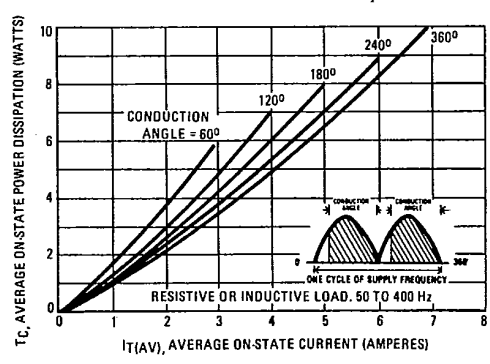


FIGURE 4 - MAXIMUM POWER DISSIPATION (FULL-WAVE)



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