

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|--------------------|---------------------|------------------|
| Repetitive peak off-stage voltage⁽¹⁾ (T _J = -40 to +100°C, gate open) | | | |
| T2802B | V _{DRM} | 200 | Volts |
| T2802C | | 300 | |
| T2802D | | 400 | |
| T2802E | | 500 | |
| T2802M | | 600 | |
| RMS on-state current (conduction angle = 360°, T _C = 80°C) | | I _{T(RMS)} | |
| Peak non-repetitive surge current (One Cycle, 60Hz, T _J = 80°C) | I _{TSM} | 100 | Amps |
| Circuit fusing considerations (T _J = -40 to +100°C, t = 1.25 to 10ms) | I ² t | 50 | A ² s |
| Peak gate power (pulse width = 1.0μs) | P _{GM} | 16 | Watts |
| Average gate power | P _{G(AV)} | 0.35 | Watts |
| Peak gate trigger current (pulse width = 1.0μs) | I _{GM} | 4 | Amps |
| Operating junction temperature range | T _J | -40 to +100 | °C |
| Storage temperature range | T _{stg} | -40 to +150 | °C |

Note 1: Ratings apply for open gate conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.

THERMAL CHARACTERISTICS

| Characteristics | Symbol | Max | Unit |
|---|------------------|-----|------|
| Thermal resistance, junction to case | R _{θJC} | 2.2 | °C/W |

ELECTRICAL CHARACTERISTICS (T_C = 25°C and either polarity of MT2 to MT1 voltage unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|------------------|-----|------|-----|-------|
| Peak off state current (Rated V _{DRM} @ T _C = 100°C, gate open) | I _{DRM} | - | - | 2 | mA |
| Peak on-state voltage (I _{TM} = 30A peak) | V _{TM} | - | 1.7 | 2 | Volts |
| DC gate trigger current (continuous dc) (V _D = 12V, R _L = 12Ω) MT2(+), G(+) MT2(-), G(-) | I _{GT} | - | 25 | 50 | mA |
| DC gate trigger voltage (continuous dc) all polarities (V _D = 12V, R _L = 100Ω) (V _D = V _{DRM} , R _L = 125Ω, T _C = 100°C) | V _{GT} | - | 1.25 | 2.5 | Volts |
| Holding current (either direction) (V _D = 12V, gate open, I _T = 125mA) | I _H | - | 20 | 60 | mA |
| Gate controlled turn on time (V _D = Rated V _{DRM} , I _T = 10A, I _{GT} = 80mA, rise time = 0.1μs) | t _{gt} | - | 1.6 | - | μs |

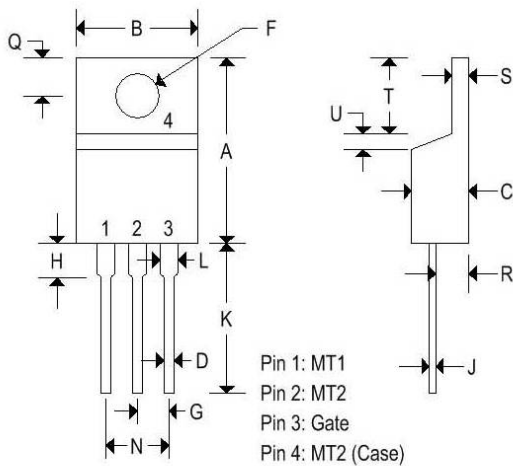
T2802 SERIES

SILICON BIDIRECTIONAL THYRISTORS

| | | | | | |
|--|----------|-----|----|---|------------|
| Critical rate of rise of commutating voltage (Rated V_{DRM} , $I_{T(RMS)} = 8A$, commutating $di/dt = 4.3A/ms$, gate unenergized, $T_C = 80^\circ C$) | dv/dt(c) | - | 10 | - | V/ μs |
| Critical rate of rise of off-state voltage (Rated V_{DRM} , exponential voltage rise, gate open, $T_C = 100^\circ C$) | dv/dt | | | | V/ μs |
| T2802B | | 100 | - | - | |
| T2802C | | 85 | - | - | |
| T2802D | | 75 | - | - | |
| T2802E | | 65 | - | - | |
| T2802M | | 60 | - | - | |

MECHANICAL CHARACTERISTICS

| | |
|---------|---------------|
| Case | TO-220AB |
| Marking | Alpha-numeric |
| Pin out | See below |



| | TO-220AB | | | |
|---|----------|-------|-------------|--------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| A | 0.575 | 0.620 | 14.600 | 15.750 |
| B | 0.380 | 0.405 | 9.650 | 10.290 |
| C | 0.160 | 0.190 | 4.060 | 4.820 |
| D | 0.025 | 0.035 | 0.640 | 0.890 |
| F | 0.142 | 0.147 | 3.610 | 3.730 |
| G | 0.095 | 0.105 | 2.410 | 2.670 |
| H | 0.110 | 0.155 | 2.790 | 3.930 |
| J | 0.014 | 0.022 | 0.360 | 0.560 |
| K | 0.500 | 0.562 | 12.700 | 14.270 |
| L | 0.045 | 0.055 | 1.140 | 1.390 |
| N | 0.190 | 0.210 | 4.830 | 5.330 |
| Q | 0.100 | 0.120 | 2.540 | 3.040 |
| R | 0.080 | 0.110 | 2.040 | 2.790 |
| S | 0.045 | 0.055 | 1.140 | 1.390 |
| T | 0.235 | 0.255 | 5.970 | 6.480 |
| U | - | 0.050 | - | 1.270 |
| V | 0.045 | - | 1.140 | - |
| Z | - | 0.080 | - | 2.030 |

T2802 SERIES

SILICON BIDIRECTIONAL THYRISTORS

FIGURE 1 – CURRENT DERATING

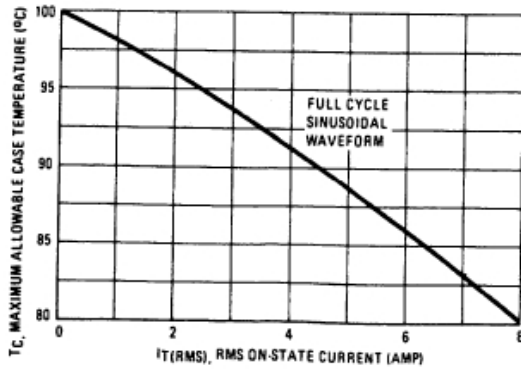


FIGURE 2 – POWER DISSIPATION

