

Triacs

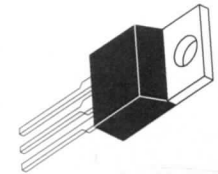
Bidirectional Triode Thyristors

... designed primarily for full-wave ac control applications, such as light dimmers, motor controls, heating controls and power supplies.

- Blocking Voltage to 600 Volts
- All Diffused and Glass Passivated Junctions for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- T2800 — Four Quadrant Gating

**T2800
 SERIES**

**TRIACs
 8 AMPERES RMS
 200 thru 600 VOLTS**



(TO-220AB)

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted.)

| Rating | Symbol | Value | Unit |
|--|---------------------|-------------------|----------------------|
| Peak Repetitive Off-State Voltage ⁽¹⁾ ($T_J = -40$ to $+100^\circ\text{C}$, Gate Open) | V_{DRM} | | Volts |
| | | T2800 B D M | 200 400 600 |
| RMS On-State Current (Conduction Angle = 360°) | $I_{\text{T(RMS)}}$ | 8 | Amps |
| Peak Non-repetitive Surge Current (One Full Cycle, 60 Hz, $T_J = +80^\circ\text{C}$) | I_{TSM} | 100 | Amps |
| Circuit Fusing ($t = 8.3$ ms) | I^2t | 40 | A^2s |
| Peak Gate Power (Pulse Width = 1 μs) | P_{GM} | 16 | Watts |
| Average Gate Power | $P_{\text{G(AV)}}$ | 0.35 | Watt |
| Peak Gate Trigger Current (Pulse Width = 1 μs) | I_{GTM} | 4 | Amps |
| Operating Junction Temperature Range | T_J | -40 to +100 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -40 to +150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|-----------------------|-----|--------------------|
| Thermal Resistance, Junction to Case | $R_{\theta\text{JC}}$ | 2.2 | $^\circ\text{C/W}$ |

1. V_{DRM} for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

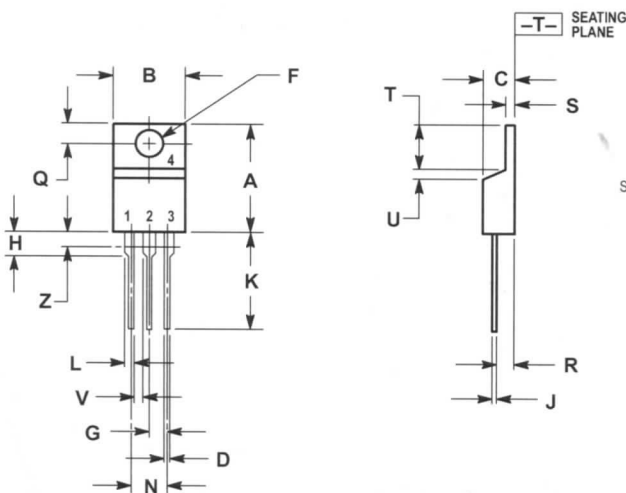


T2800 SERIES

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|------------------|----------------------|----------------------|----------------------|----------|
| Peak Blocking Current (V _D = Rated V _{DRM} , Gate Open) T _C = 25°C T _C = 100°C | I _{DRM} | — — | — — | 10 2 | μA mA |
| Peak On-State Voltage (Either Direction)* (I _T = 30 A Peak) | V _{TM} | — | 1.7 | 2 | Volts |
| Gate Trigger Current (Continuous dc) (V _D = 12 Vdc, R _L = 12 Ohms) MT2(+), G(+) T2800 MT2(+), G(-) T2800 MT2(-), G(-) T2800 MT2(-), G(+) T2800 | I _{GT} | — — — — | 10 20 15 30 | 25 60 25 60 | mA |
| Gate Trigger Voltage (Continuous dc) (All Polarities) (V _D = 12 Vdc, R _L = 100 Ohms) (R _L = 125 Ohms, V _D = V _{DRM} , T _C = 100°C) | V _{GT} | — 0.2 | 1.25 — | 2.5 — | Volts |
| Holding Current (Either Direction) (V _D = 12 Vdc, Gate Open) T2800 | I _H | — | 15 | 30 | mA |
| Gate Controlled Turn-On Time (V _D = Rated V _{DRM} , I _T = 10 A, I _{GT} = 80 mA, Rise Time = 0.1 μs) | t _{gt} | — | 1.6 | — | μs |
| Critical Rate-of-Rise of Commutation Voltage (V _D = Rated V _{DRM} , I _T (RMS) = 8 A, Commutating di/dt = 4.1 A/ms, Gate Unenergized, T _C = 80°C) | dv/dt(c) | — | 10 | — | V/μs |
| Critical Rate-of-Rise of Off-State Voltage (V _D = Rated V _{DRM} , Exponential Voltage Rise, Gate Open, T _C = 100°C) | dv/dt | T2800 B D M | 100 — — 60 | — — — — | V/μs |

*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.



STYLE 4:
PIN 1. MAIN TERMINAL 1
2. MAIN TERMINAL 2
3. GATE
4. MAIN TERMINAL 2

- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.570 | 0.620 | 14.48 | 15.75 |
| B | 0.380 | 0.405 | 9.66 | 10.28 |
| C | 0.160 | 0.190 | 4.07 | 4.82 |
| D | 0.025 | 0.035 | 0.64 | 0.88 |
| F | 0.142 | 0.147 | 3.61 | 3.73 |
| G | 0.095 | 0.105 | 2.42 | 2.66 |
| H | 0.110 | 0.155 | 2.80 | 3.93 |
| J | 0.014 | 0.022 | 0.36 | 0.55 |
| K | 0.500 | 0.562 | 12.70 | 14.27 |
| L | 0.045 | 0.055 | 1.15 | 1.39 |
| N | 0.190 | 0.210 | 4.83 | 5.33 |
| Q | 0.100 | 0.120 | 2.54 | 3.04 |
| R | 0.080 | 0.110 | 2.04 | 2.79 |
| S | 0.045 | 0.055 | 1.15 | 1.39 |
| T | 0.235 | 0.255 | 5.97 | 6.47 |
| U | 0.000 | 0.050 | 0.00 | 1.27 |
| V | 0.045 | — | 1.15 | — |
| Z | — | 0.080 | — | 2.04 |