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**T2700 Series**

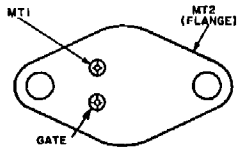
# High Voltage, 6-A Silicon Triacs

For Power-Control and Power-Switching Applications

**Features:**

- *800V, 125 Deg. C $T_J$ Operating*
- *High dv/dt and di/dt Capability*
- *Low Switching Losses*
- *High Pulse Current Capability*
- *Low Forward and Reverse Leakage*
- *Sipos Oxide Glass Multilayer Passivation System*
- *Advanced Unisurface Construction*
- *Precise Ion Implanted Diffusion Source*

**TERMINAL DESIGNATIONS**




**JEDEC TO-213AA**

**MAXIMUM RATINGS,** *Absolute-Maximum Values:*

| | T2700B | T2700D | T2700M | T2700N | |
|---|---|---|---|---|---|
| $V_{DRM}$* | 200 | 400 | 600 | 800 | V |
| $I_{T(RMS)}$ ($T_C$ = 100°C) | 6 | | | | A |
| $I_{TSM}$ (for 1 full cycle) 60 Hz | 100 | | | | A |
| di/dt | 100 | | | | A/μs |
| $I^2T$ (at 1.25 to 10 ms) | 50 | | | | $A^2s$ |
| $I_{GTM}$■ | 4 | | | | A |
| $P_{GM}$ (for 1 μs max.) | 16 | | | | W |
| $P_{G(AV)}$ (Averaging time 10ms max.) | 0.2 | | | | W |
| T Storage▲ | -65 to 150 | | | | °C |
| $T_C$ | -65 to 125 | | | | °C |
| $T_T$ (During soldering): For 10 s max. (terminals and case) | 225 | | | | °C |

*For either polarity of main terminal 2 voltage ($V_{MT2}$) with reference to main terminal 1.
■For either polarity of gate voltage ($V_G$) with reference to main terminal 1.
▲For temperature measurement reference point, *see Dimensional Outline.*

**ELECTRICAL CHARACTERISTICS**
At Maximum Ratings and at Indicated Case Temperature ($T_C$) Unless Otherwise Specified

| CHARACTERISTIC | SYMBOL | LIMITS For All Types Unless Otherwise Specified | | | UNITS |
|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | |
| Peak Off-State Current:* Gate open, $T_J$ = 125°C, $V_{DROM}$ = Max. rated value | $I_{DROM}$ | — | 0.1 | 4 | mA |
| Maximum On-State Voltage:* For $I_T$ = 30A (peak), $T_C$ = 25°C | $V_{TM}$ | — | 1.8 | 2.25 | V |
| DC Holding Current:* Gate open, Initial principal current = 150 mA (DC), $v_D$ = 12V: $T_C$ = 25°C | $I_{HO}$ | — | 15 | 30 | mA |
| For other case temperatures | | | See Fig. 5 | | |
| Critical Rate-of-Rise of Commutation Voltage:* For $v_D = V_{DROM}$, $I_{T(RMS)}$ = 6 A, Commutating di/dt = 3.2 A/ms, and gate unenergized At $T_C$ = +100°C | dv/dt | 3 | 10 | — | V/μs |
| Critical Rate of Rise of Off-State Voltage:* For $v_D = V_{DROM}$, exponential voltage rise, and gate open At $T_C$ = 125°C | | | | | |
| T2500B | dv/dt | 30 | 150 | — | V/μs |
| T2500D | | 20 | 100 | — | |
| T2500M | | 15 | 70 | — | |
| T2500N | | 10 | 50 | — | |
| DC Gate-Trigger Current:*† For $v_D$ = 12 volts (dc), $R_L$ = 30 Ω, $T_C$ = +25°C, and Specified Triggering Mode: | | | | | |
| I+ Mode: $V_{MT2}$ positive, $V_G$ positive | $I_{GT}$ | — | 15 | 25 | mA |
| III− Mode: $V_{MT2}$ negative, $V_G$ negative | | — | 20 | 30 | |
| I− Mode: $V_{MT2}$ positive, $V_G$ negative | | — | 25 | 40 | |
| III+ Mode: $V_{MT2}$ negative, $V_G$ positive | | — | 25 | 40 | |
| For other case temperatures | | | See Figs. 7 & 8 | | |
| DC Gate-Trigger Voltage:*† For $v_D$ = 12 V(DC), $R_L$ = 30 Ω | | | | | |
| $T_C$ = 25°C | $V_{GT}$ | — | 1 | 2.2 | V |
| For other case temperatures | | | See Fig. 9 | | |
| For $v_D = V_{DROM}$, $R_L$ = 125 Ω, $T_C$ = 125°C | | 0.2 | — | — | |
| Gate-Controlled Turn-On Time: (Delay Time + Rise Time) For $v_D = V_{DROM}$, $I_G$ = 160 mA, $t_r$ = 0.1 μs, $i_T$ = 10 A (peak), $T_C$ = 25°C (See Fig. 15) | $t_{gt}$ | — | 2.2 | — | μs |
| Thermal Resistance: Junction-to-Case (Steady-State) | $R_{\theta JA}$ | — | — | 4 | °C/W |
| Junction-to-Case (Transient) | | | See Fig. 10 | | |

*For either polarity of main terminal 2 voltage ($V_{MT2}$) with reference to main terminal 1.
†For either polarity of gate voltage ($V_G$) with reference to main terminal 1.