## T2050H-6E 20A TRIAC

Rev.A.1.1

The T2050H-6E triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Compared to traditional triacs, T2050H-6E provides a very high switching capability up to junction temperatures of 150 °C. Package TO-263 is RoHS compliant.

| Symbol | Value | Unit |
|---|---|---|
| $I_{T(RMS)}$ | 20 | A |
| $V_{DRM}$ /$V_{RRM}$ | 600 | V |
| $I_{GT}$ / / | 50/50/50 | mA |

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Storage junction temperature range | $T_{stg}$ | -40-150 | |
| Operating junction temperature range | $T_j$ | -40-150 | |
| Repetitive peak off-state voltage ($T_j$=25 ) | $V_{DRM}$ | 600 | V |
| Repetitive peak reverse voltage ($T_j$=25 ) | $V_{RRM}$ | 600 | V |
| RMS on-state current ($T_C \leq$ 121 ) | $I_{T(RMS)}$ | 20 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=20ms , $T_j$=25 ) | $I_{TSM}$ | 200 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=16.6ms , $T_j$=25 ) | | 220 | |
| $I^2t$ value for fusing ($t_p$=10ms , $T_j$=25 ) | $I^2t$ | 200 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2 × $I_{GT}$ , f=100Hz , $T_j$=150 ) | dI/dt | 100 | A/μs |
| Peak gate current ($t_p$=20μs , $T_j$=150 ) | $I_{GM}$ | 4 | A |
| Average gate power dissipation ($T_j$=150 ) | $P_{G(AV)}$ | 1 | W |
| Peak gate power | $P_{GM}$ | 10 | W |

| | | | |
|---|---|---|---|
| Peak pulse voltage<br>($T_j$=25 ; non-repetitive,off-state;FIG.8) | $V_{pp}$ | 4 | kV |

($T_j$=25 unless otherwise specified)

| Symbol | Test Condition | Quadrant | Value | Unit |
|---|---|---|---|---|
| $I_{GT}$ | $V_D$ =12V $R_L$ =33Ω | מ | מ | |

20 50 H -6 E -/

S):20A

50:$I_{GT1-3} \leq 50mA$

High junction temperature

6:$V_{DRM}$ /$V_{RRM} \geq 600V$

E:TO-263

Blank:Tube
-TR:Tape & Reel

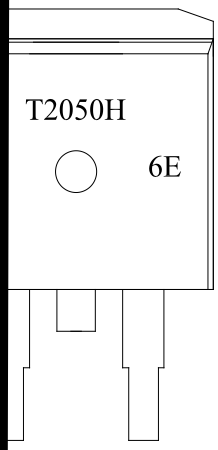


**FIG.1:** Maximum power dissipation versus RMS on-state current



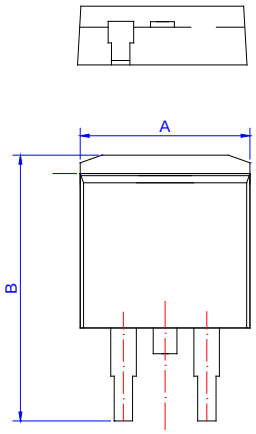
**FIG.2:** RMS on-state current versus case temperature

**FIG.7:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(mA) | Package | Base qty. (pcs) | Delivery mode |
|---|---|---|---|---|---|
| | | - - | | | |
| T2050H-6E | 600 | 50 | TO-263 | 50 | Tube |
| T2050H-6E-TR | | | | 800 | Tape & Reel |




| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 9.90 | | 10.20 | 0.390 | | 0.402 |
| | | | | | | |
| B | 14.70 | | 15.80 | 0.579 | | 0.622 |
| | | | | | | |
| C | 9.40 | | 9.60 | 0.370 | | 0.378 |
| | | | | | | |
| D | 2.40 | | | 0.094 | | |
| E | 1.20 | | 1.50 | 0.047 | | 0.059 |
| F | 0.75 | | 0.85 | 0.029 | | 0.033 |
| | | | | | | |
| | | | | | | |
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