



## T0435H-6E 4A TRIAC

Rev.A.1.1

## DESCRIPTION:

The T0435H-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, T0435H-6E provides a very high switching capability up to junction temperatures of 150°C. Package TO-263 is RoHS compliant.

## MAIN FEATURES

## ABSOLUTE MAXIMUM RATINGS

| 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 ( $T_j=25^\circ\text{C}$ )                                                     | $V_{DRM}$    | 600     | V                    |
| Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )                                                       | $V_{RRM}$    | 600     | V                    |
| RMS on-state current ( $T_c=0137^\circ\text{C}$ )                                                                | $I_{T(RMS)}$ | 4       | A                    |
| Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )             | $I_{TSM}$    | 40      | A                    |
| Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )           |              | 44      |                      |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )                                           | $I^2t$       | 8       | $\text{A}^2\text{s}$ |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=150^\circ\text{C}$ ) | $di/dt$      | 80      | $\text{A/s}$         |
| Peak gate current ( $t_p=20\text{ }\mu\text{s}$ , $T_j=150^\circ\text{C}$ )                                      | $I_{GM}$     | 4       | A                    |
| Average gate power dissipation ( $T_j=150^\circ\text{C}$ )                                                       | $P_{G(AV)}$  | 1       | W                    |
| Peak gate power                                                                                                  | $P_{GM}$     | 10      | W                    |

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

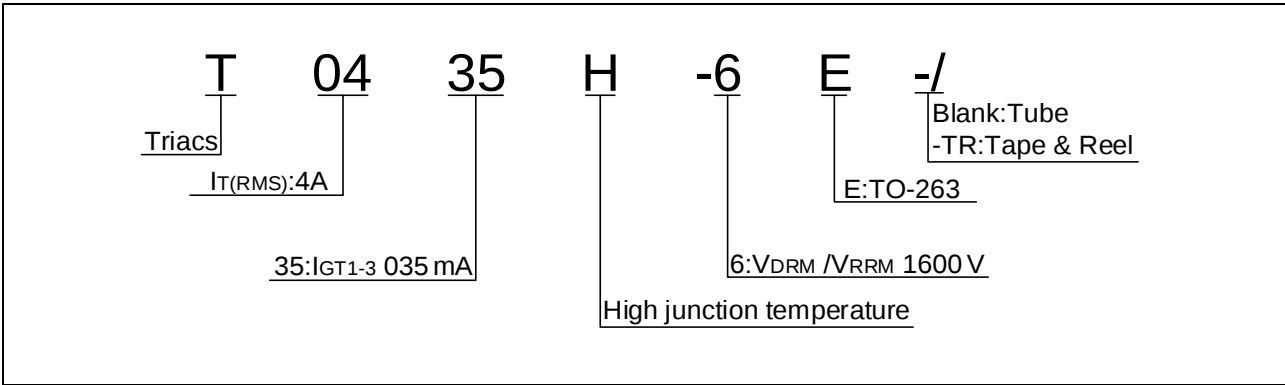
## ELECTRICAL CHARACTERISTICS (unless otherwise specified)

| Symbol      |                                                                |     |      |      |      |
|-------------|----------------------------------------------------------------|-----|------|------|------|
| $I_{GT}$    | $V_D=12\text{V } R_L=33\Omega$                                 | - - | MAX  | 35   | mA   |
| $V_{GT}$    |                                                                | - - | MAX  | 1    | V    |
| $V_{GD}$    | $V_D=V_{DRM} T_j=150^\circ\text{C}$<br>$R_L=3.3\text{k}\Omega$ | - - | MIN. | 0.2  | V    |
| $I_L$       | $I_L=1.2I_{GT}$                                                | -   | MAX  | 40   | mA   |
| $I_H$       | $I_H=100\text{mA}$                                             |     | MAX  | 30   | mA   |
| $dV/dt$     | $V_D=150\text{V}$                                              |     | MIN. | 1200 | V/s  |
| $(dI/dt)_c$ | $V_G=9\text{V } V_W=150\text{V } F=1\text{MHz}$                |     | MIN. | 8    | A/ms |
| $t_{on}$    | $V_G=40\text{mA } I_L=200\text{mA } I_R=20\text{mA}$           |     | TYP. | 3    | s    |
| $t_{off}$   | $T_j=25^\circ\text{C}$                                         |     |      | 30   |      |

## STATIC CHARACTERISTICS

| Symbol   | Parameter                                                              | Value(MAX.) | Unit |
|----------|------------------------------------------------------------------------|-------------|------|
| $V_{TM}$ | $I_{TM}=5.5\text{A } t_p=380\text{ }\mu\text{s } T_j=25^\circ\text{C}$ |             |      |

ORDERING INFORMATION



MARKING

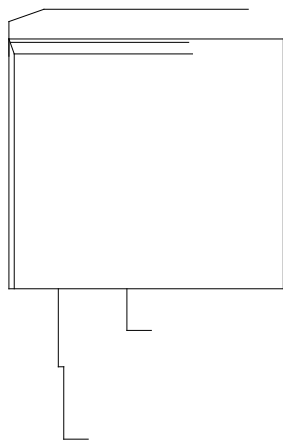


FIG.1: Maximum power dissipation versus RMS on-state current

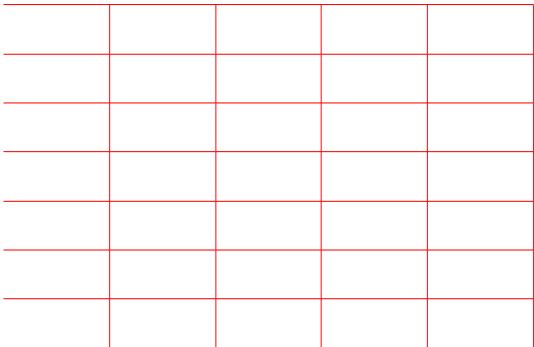


FIG.2: RMS on-state current versus case temperature

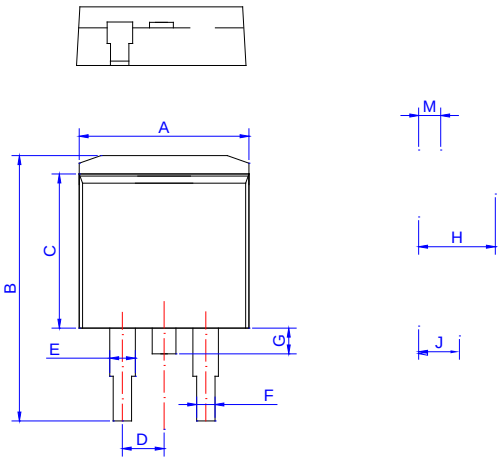
FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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

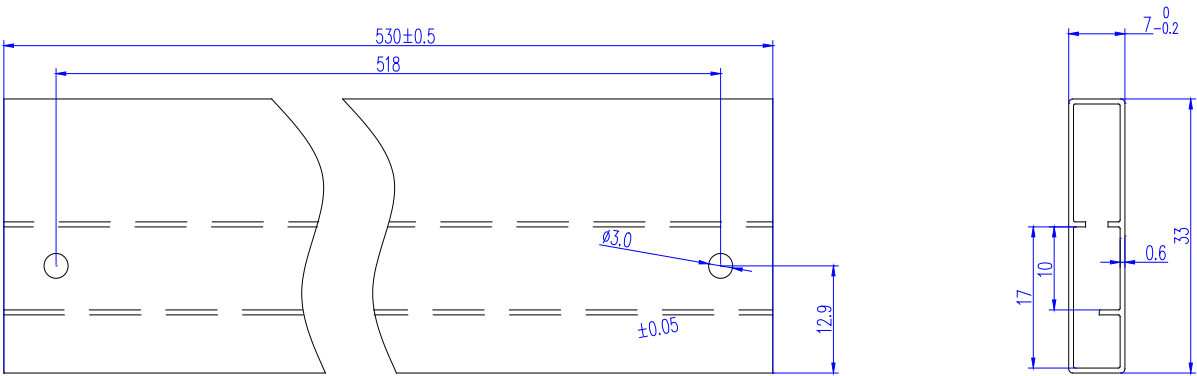


PACKAGE MECHANICAL DATA



| 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 |
|      |             |      |       |        |      |       |
|      |             |      |       |        |      |       |
|      |             |      |       |        |      |       |
|      |             |      |       |        |      |       |

DELIVERY MODE



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