# JST12E-600BW 12A TRIAC

Rev.A.1.1

## DESCRIPTION:

The JST12E-600BW 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. JST12E-600BW snubberless triac is especially recommended for use on inductive loads. 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 | $T_j$ | -40-125 | |
| Repetitive peak off-state voltage ($T_j$=25 ) | $V_{DRM}$ | 600 | V |

Repetitive peak re (tTc 0.006 TwTc -0.002 Tw 12 0 0 1276.88 360.6 253.32 0.482 0 4.48 re f 4964

| | | | |
|---|---|---|---|
| Peak pulse voltage ($T_j$=25 ; non-repetitive,off-state;FIG.8) | $V_{pp}$ | 4.5 | kV |

## ELECTRICAL CHARACTERISTICS ($T_j$=25 unless otherwise specified)

| Symbol | Test Condition | Quadrant | Value | | Unit |
|---|---|---|---|---|---|
| $I_{GT}$ | $V_D$ =12V $R_L$ =33Ω | - - | MAX. | 50 | mA |
| $V_{GT}$ | | - - | MAX. | 1 | V |
| $V_{GD}$ | $V_D$ =$V_{DRM}$ $T_j$ =125 $R_L$ =3.3kΩ | - - | MIN. | 0.2 | V |
| $I_L$ | $I_G$ =1.2$I_{GT}$ | - | MAX. | 70 | mA |
| | | | | 90 | |
| $I_H$ | $I_T$ =500mA | | MAX. | 50 | mA |
| dV/dt | $V_D$=400V Gate Open $T_j$ =125 | | MIN. | 2000 | V/μs |
| (dI/dt)c | (dV/dt)c=20V/μs $T_j$=125 | | MIN. | 20 | A/ms |
| $t_{on}$ | $I_G$=80mA $I_A$=400mA $I_R$=40mA $T_j$=25 | | TYP. | 5 | μs |
| $t_{off}$ | | | | 50 | |

## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX.) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$ =17A $t_p$=380μs | $T_j$=25 | 1.5 | V |
| $V_{TO}$ | Threshold voltage | $T_j$=125 | 0.77 | V |
| $R_D$ | Dynamic resistance | $T_j$=125 | 35 | mΩ |
| $I_{DRM}$ | $V_D$ =$V_{DRM}$ $V_R$ =$V_{RRM}$ | $T_j$=25 | 5 | μA |
| $I_{RRM}$ | | $T_j$=125 | 0.4 | mA |

## THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{th(j-c)}$ | junction to case (AC) | 1.3 | /W |
| $R_{th(j-a)}$ | junction to ambient (AC, in free air, S=2cm$^2$) | 45 | /W |

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

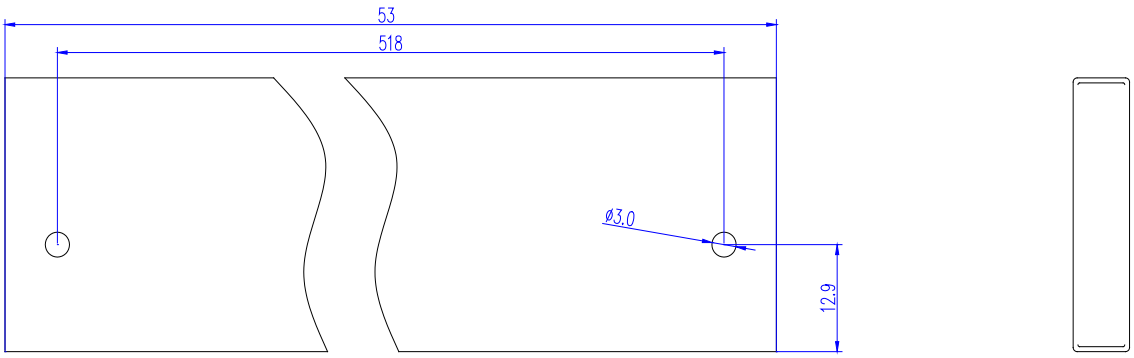
## ORDERING INFORMATION

| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(mA) | Package | Base qty. (pcs) | Delivery mode |
|---|---|---|---|---|---|
| | | - - | | | |
| JST12E-600BW | 600 | 50 | TO-263 | 50 | Tube |
| JST12E-600BW-TR | | | | 800 | Tape& Reel |

### Document Revision History

| Date | Revision | Changes |
|---|---|---|
| Apr.11, 2023 | A.1.0 | Last updated |
| Oct.20, 2025 | A.1.1 | Revise PACKAGE MECHANICAL DATA |

## DELIVERY MODE



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