## JST41Z-800B 40A TRIAC

Rev.A.1.1

### DESCRIPTION:

The JST41Z-800B 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. By using an internal ceramic pad, JST41Z-800B provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.

### MAIN FEATURES

### ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Storage junction temperature range | $T_{stg}$ | -40-150 | Ņ |
| Operating junction temperature range | $T_j$ | -40-125 | Ņ |
| Repetitive peak off-state voltage ($T_j$=25Ņ) | $V_{DRM}$ | 800 | V |
| Repetitive peak reverse voltage ($T_j$=25Ņ) | $V_{RRM}$ | 800 | V |
| RMS on-state current ($T_C$ Ů 81Ņ) | $I_{T(RMS)}$ | 40 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=20ms , $T_j$=25Ņ) | $I_{TSM}$ | 420 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=16.6ms , $T_j$=25Ņ) | | 462 | |
| $I^2t$ value for fusing ($t_p$=10ms , $T_j$=25Ņ) | $I^2t$ | 1000 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2 ¦ $I_{GT}$, f=100Hz , $T_j$=125Ņ) | dI/dt | 100 | A/µs |

| | | | |
|---|---|---|---|
| Peak pulse voltage ($T_j$=25℃; non-repetitive,off-state;FIG.7) | $V_{pp}$ | 0.9 | kV |

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

| Symbol | Test Condition | Quadrant | Value | | Unit |
|---|---|---|---|---|---|
| $I_{GT}$ | $V_D$=12V $R_L$=33Ω | Ⅰ - Ⅱ - Ⅲ | MAX. | 50 | mA |
| | | Ⅳ | | 70 | |
| $V_{GT}$ | | ALL | MAX. | 1.3 | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$ $T_j$=125℃ $R_L$=3.3kΩ | ALL | MIN. | 0.2 | V |
| $I_L$ | $I_G$=1.2$I_{GT}$ | Ⅰ - Ⅲ - Ⅳ | MAX. | 80 | mA |
| | | Ⅱ | | 160 | |
| $I_H$ | $I_T$=500mA | | MAX. | 80 | mA |
| dV/dt | $V_D$=540V Gate Open $T_j$=125℃ | | MIN. | 1200 | V/μs |
| (dV/dt)c | (dI/dt)c=20A/ms, $T_j$=125℃ | | MIN. | 20 | V/μs |
| $t_{on}$ | $I_G$=80mA $I_A$=400mA $I_R$=40mA $T_j$=25℃ | | TYP. | 10 | μs |
| $t_{off}$ | | | | 70 | |

## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX.) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$=60A $t_p$=380μs | $T_j$=25℃ | 1.4 | V |
| $V_{TO}$ | Threshold voltage | $T_j$=125℃ | 0.73 | V |
| $R_D$ | Dynamic resistance | $T_j$=125℃ | 10 | mΩ |
| $I_{DRM}$ | $V_D$=$V_{DRM}$ $V_R$=$V_{RRM}$ | $T_j$=25℃ | 5 | μA |
| $I_{RRM}$ | | $T_j$=125℃ | 5 | mA |

## THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{th(j-c)}$ | junction to case (AC) | 0.85 | ℃/W |
| $R_{th(j-a)}$ | junction to ambient (AC) | 50 | ℃/W |

## ORDERING INFORMATION

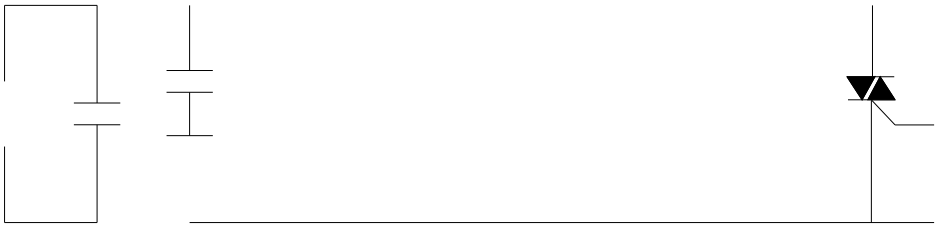


**FIG.1:** Maximum power dissipation versus RMS on-state current



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

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



## ORDERING INFORMATION

| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(mA) | | Package | Base qty. (pcs) | Delivery mode |
|---|---|---|---|---|---|---|
| | | - - | | | | |
| JST41Z-800B | 800 | 50 | 70 | TO-3P(Ins) | 30 | Tube |

### Document Revision History

| Date | Revision | Changes |
|---|---|---|
| Apr.14, 2023 | A.1.0 | Last update |
| Oct.17, 2025 | A.1.1 | Revise PACKAGE MECHANICAL DATA |

## PACKAGE MECHANICAL DATA



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