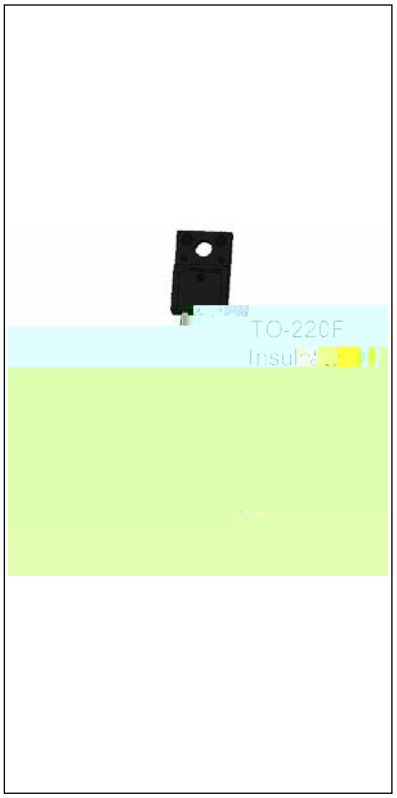
## JST04F-600CW 4A TRIAC

Rev.A.1.1

### DESCRIPTION:

The JST04F-600CW 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. JST04F-600CW snubberless triac is especially recommended for use on inductive loads.By using an external plastic package, JST04F-600CW provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.




### MAIN FEATURES

| Symbol | Value | Unit |
|---|---|---|
| $I_{T(RMS)}$ | 4 | A |
| $V_{DRM}$ /$V_{RRM}$ | 600 | V |
| $I_{GT}$ / / | 35/35/35 | mA |

### 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 reverse voltage ($T_j$=25 ) | $V_{RRM}$ | 600 | V |
| RMS on-state current ($T_C \leq$ 97 ) | $I_{T(RMS)}$ | 4 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=20ms , $T_j$=25 ) | $I_{TSM}$ | 40 | A |
| Non repetitive surge peak on-state current (full cycle , $t_p$=16.6ms , $T_j$=25 ) | | 44 | |
| $I^2t$ value for fusing ($t_p$=10ms , $T_j$=25 ) | $I^2t$ | 8 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2 × $I_{GT}$ , f=100Hz , $T_j$=125 ) | dI/dt | 80 | A/μs |
| Peak gate current ($t_p$=20μs , $T_j$=125 ) | $I_{GM}$ | 4 | A |
| Average gate power dissipation ($T_j$=125 ) | $P_{G(AV)}$ | 0.5 | W |

| | | | |
|---|---|---|---|
| Peak gate power | $P_{GM}$ | 10 | W |
| Peak pulse voltage ($T_j$=25 ; non-repetitive,off-state;FIG.7) | $V_{pp}$ | 4 | kV |

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

| Symbol | Test Condition | Quadrant | Value | | Unit |
|---|---|---|---|---|---|
| $I_{GT}$ | $V_D$ =12V $R_L$ =33Ω | - - | MAX. | 35 | 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. | 50 | mA |
| | | | | 60 | |
| $I_H$ | $I_T$ =100mA | | MAX. | 35 | mA |
| dV/dt | $V_D$=400V Gate Open $T_j$ =125 | | MIN. | 1500 | V/μs |
| (dI/dt)c | (dV/dt)c=20V/μs, $T_j$=125 | | MIN. | 8 | A/ms |
| $t_{on}$ | $I_G$=40mA $I_A$=200mA $I_R$=20mA $T_j$=25 | | TYP. | 3 | μs |
| $t_{off}$ | | | | 30 | |

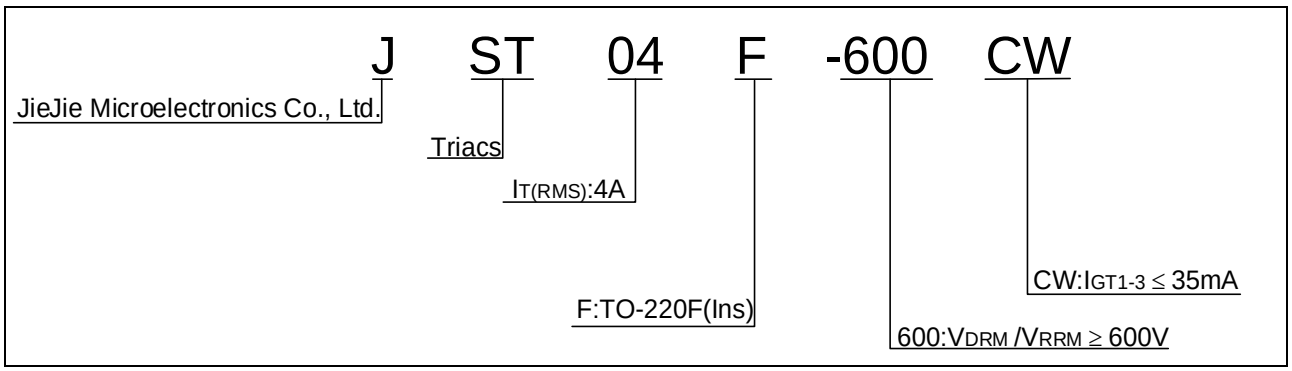
## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX.) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$ =5A $t_p$=380μs | $T_j$=25 | 1.65 | V |
| $V_{TO}$ | Threshold voltage | $T_j$=125 | 0.799 | V |
| $R_D$ | Dynamic resistance | $T_j$=125 | 151 | mΩ |
| $I_{DRM}$ | $V_D$ =$V_{DRM}$ $V_R$ =$V_{RRM}$ | $T_j$=25 | 5 | μA |
| $I_{RRM}$ | | $T_j$=125 | 0.2 | mA |

## THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{th(j-c)}$ | junction to case (AC) | 4.5 | /W |
| $R_{th(j-a)}$ | junction to ambient (AC) | 60 | /W |

## ORDERING INFORMATION




## MARKING Á ) } Ţ # £ )

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

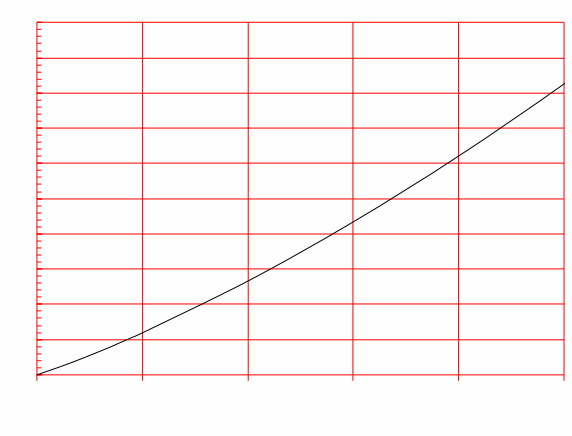


**FIG.2:** RMS on-state current versus case temperature

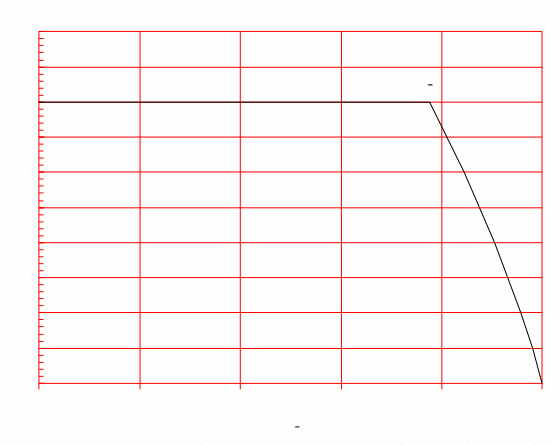


**FIG.3:** Surge peak on-state current versus number of cycles

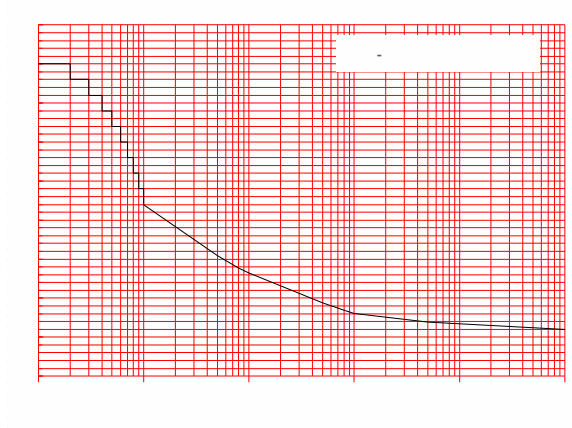
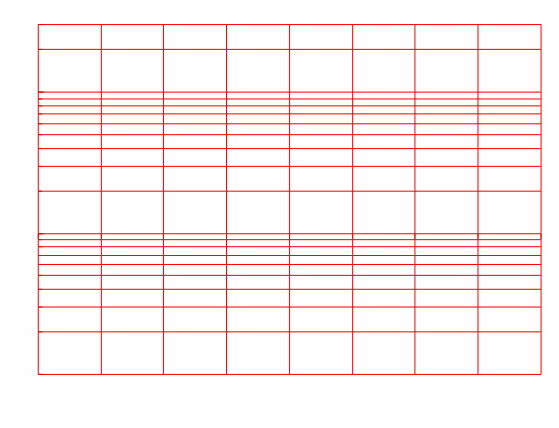


**FIG.4:** On-state characteristics



## ORDERING INFORMATION

| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(mA) | Package | Base qty. (pcs) | Delivery mm Ń |
|---|---|---|---|---|---|

## PACKAGE MECHANICAL DATA



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