



## JST04C-800SW 4A TRIACs

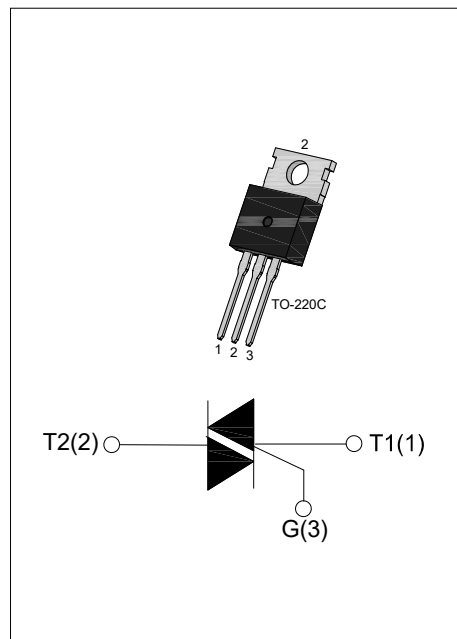
Rev.1

### DESCRIPTION:

With high ability to withstand the shock loading of large current, JST04C-800SW triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, especially recommended for use on inductive load.complying with UL standards (File ref: E252906). Package TO-220C is RoHS compliant. (2011/65/EU)

### MAIN FEATURES

| Symbol            | Value | Unit |
|-------------------|-------|------|
| $V_{DRM}/V_{RRM}$ | 800   | V    |
| $I_{T(RMS)}$      | 4     | A    |



### ABSOLUTE MAXIMUM RATINGS

| Parameter                                                              |                                          | Symbol       | Value     | Unit                   |
|------------------------------------------------------------------------|------------------------------------------|--------------|-----------|------------------------|
| Storage junction temperature range                                     |                                          | $T_{stg}$    | -40 - 150 | °C                     |
| Operating junction temperature range                                   |                                          | $T_j$        | -40 - 125 | °C                     |
| Repetitive peak off-state voltage ( $T_j=25^{\circ}\text{C}$ )         |                                          | $V_{DRM}$    | 800       | V                      |
| Repetitive peak reverse voltage ( $T_j=25^{\circ}\text{C}$ )           |                                          | $V_{RRM}$    | 800       | V                      |
| RMS on-state current                                                   | TO-220C<br>( $T_c=105^{\circ}\text{C}$ ) | $I_{T(RMS)}$ | 4         | A                      |
| Non repetitive surge peak on-state current<br>(full cycle, F=50Hz)     |                                          | $I_{TSM}$    | 40        | A                      |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ )                          |                                          | $I^2t$       | 8         | $\text{A}^2\text{s}$   |
| Critical rate of rise of on-state current<br>( $I_G=2 \times I_{GT}$ ) |                                          | $di/dt$      | 50        | $\text{A}/\mu\text{s}$ |
| Peak gate current                                                      |                                          | $I_{GM}$     | 4         | A                      |
| Average gate power dissipation                                         |                                          | $P_{G(AV)}$  | 1         | W                      |
| Peak gate power                                                        |                                          | $P_{GM}$     | 5         | W                      |

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

| Symbol   | Test Condition                                                   | Quadrant    |     | Value | Unit             |
|----------|------------------------------------------------------------------|-------------|-----|-------|------------------|
| $I_{GT}$ | $V_D=12\text{V } R_L=33\Omega$                                   | I - II -III | MAX | 10    | mA               |
| $V_{GT}$ |                                                                  | I - II -III | MAX | 1.5   | V                |
| $V_{GD}$ | $V_D=V_{DRM} T_j=125^{\circ}\text{C}$<br>$R_L=3.3\text{K}\Omega$ | I - II -III | MIN | 0.2   | V                |
| $I_L$    | $I_G=1.2I_{GT}$                                                  | I -III      | MAX | 20    | mA               |
|          |                                                                  | II          |     | 35    |                  |
| $I_H$    | $I_T=100\text{mA}$                                               |             | MAX | 15    | mA               |
| dv/dt    | $V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$             |             | MIN | 100   | V/ $\mu\text{s}$ |

**STATIC CHARACTERISTICS**

| Symbol    | Parameter                                |                           | Value(MAX) | Unit          |
|-----------|------------------------------------------|---------------------------|------------|---------------|
| $V_{TM}$  | $I_{TM}=5.5\text{A } t_p=380\mu\text{s}$ | $T_j=25^{\circ}\text{C}$  | 1.5        | V             |
| $V_{TO}$  | Threshold voltage                        | $T_j=125^{\circ}\text{C}$ | 0.93       | V             |
| $R_d$     | Dynamic resistance                       | $T_j=125^{\circ}\text{C}$ | 97         | m $\Omega$    |
| $I_{DRM}$ | $V_D=V_{DRM} V_R=V_{RRM}$                | $T_j=25^{\circ}\text{C}$  | 10         | $\mu\text{A}$ |
| $I_{RRM}$ |                                          | $T_j=125^{\circ}\text{C}$ | 0.75       | mA            |

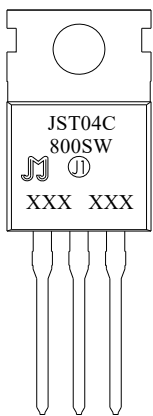
**THERMAL RESISTANCES**

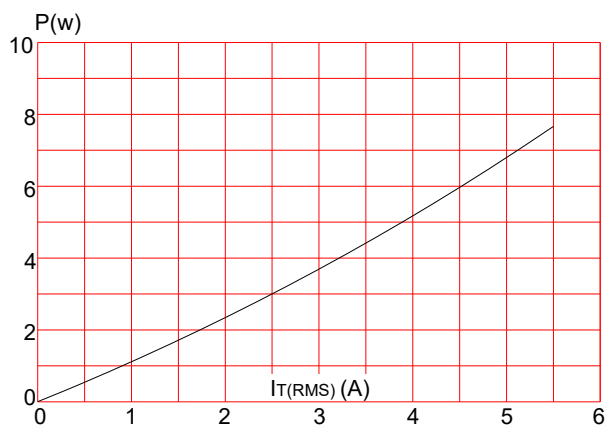
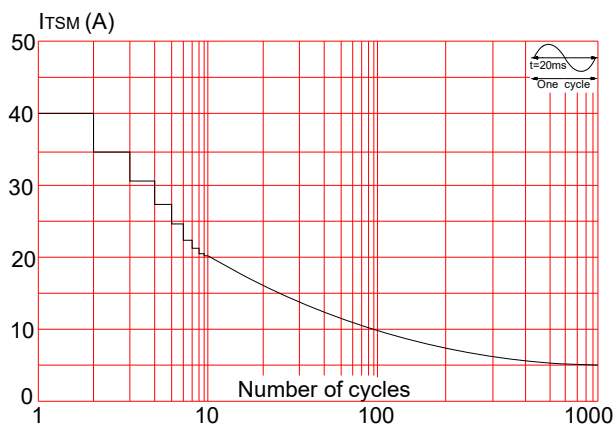
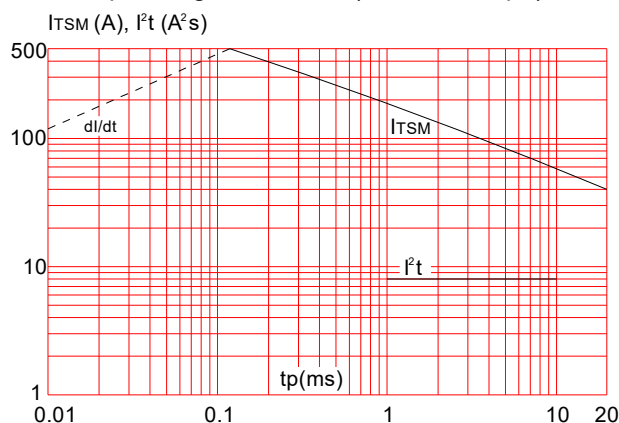
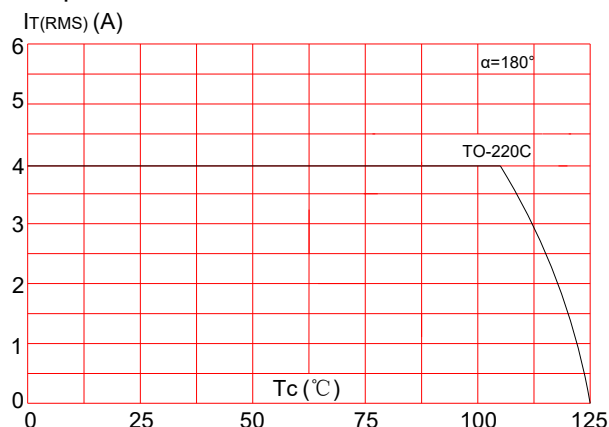
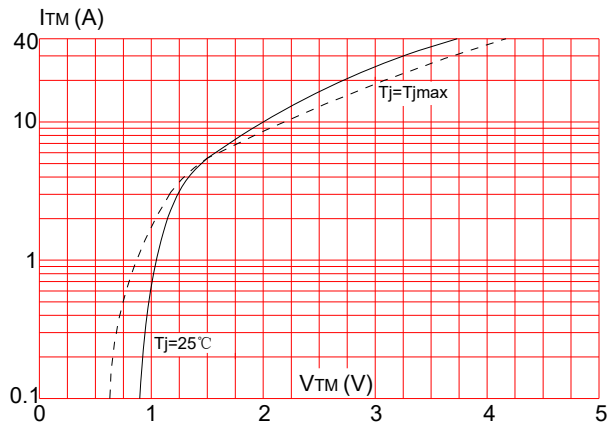
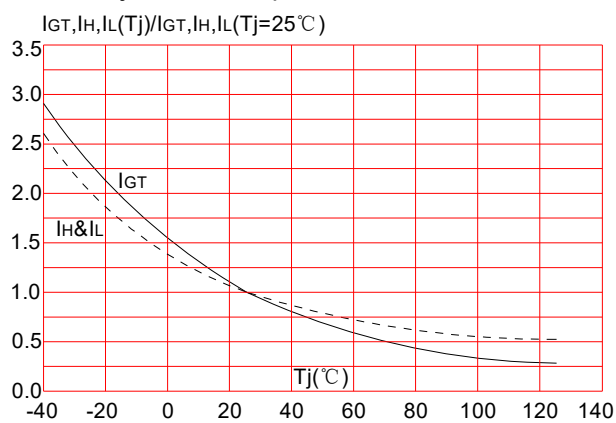
| Symbol        | Parameter            |         | Value | Unit                 |
|---------------|----------------------|---------|-------|----------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220C | 2.5   | $^{\circ}\text{C/W}$ |

## ORDERING INFORMATION

|                                 |           |                 |          |             |                           |                                    |
|---------------------------------|-----------|-----------------|----------|-------------|---------------------------|------------------------------------|
| <u>J</u>                        | <u>ST</u> | <u>04</u>       | <u>C</u> | <u>-800</u> | <u>SW</u>                 | <u>-/</u>                          |
| JieJie Microelectronics Co.,Ltd | Triacs    | $I_{T(RMS)}:4A$ |          |             |                           | Blank: Tube                        |
|                                 |           | C:TO-220C       |          |             | SW: $I_{GT1-3} \leq 10mA$ |                                    |
|                                 |           |                 |          |             |                           | 800: $V_{DRM} / V_{RRM} \geq 800V$ |

## MARKING

|                                                                                                                                                                                                                                                            |                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|  <p>Diagram showing the marking on the JST04C-800SW component. The marking includes the part number JST04C 800SW, the JieJie logo, and the production code XXX XXX.</p> | <p>XXX XXX</p> <p>Year _____<br/>Month _____</p> <p>Production Code</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|

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

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

**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$  and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )

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

**FIG.4:** On-state characteristics (maximum values)

**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature


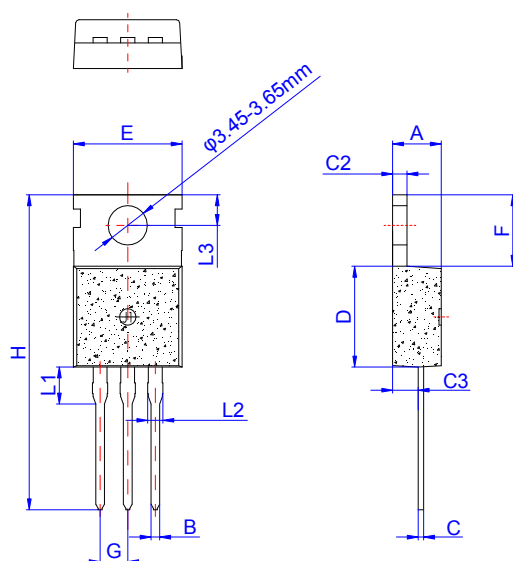
**ORDERING INFORMATION**

| Order code   | Voltage<br>$V_{\text{DRM}}/V_{\text{RRM}}$ (V) | IGT(mA) | Package | Base qty.<br>(pcs) | Delivery<br>mode |
|--------------|------------------------------------------------|---------|---------|--------------------|------------------|
| JST04C-800SW | 800                                            | 10      | TO-220C | 50                 | Tube             |

**Document Revision History**

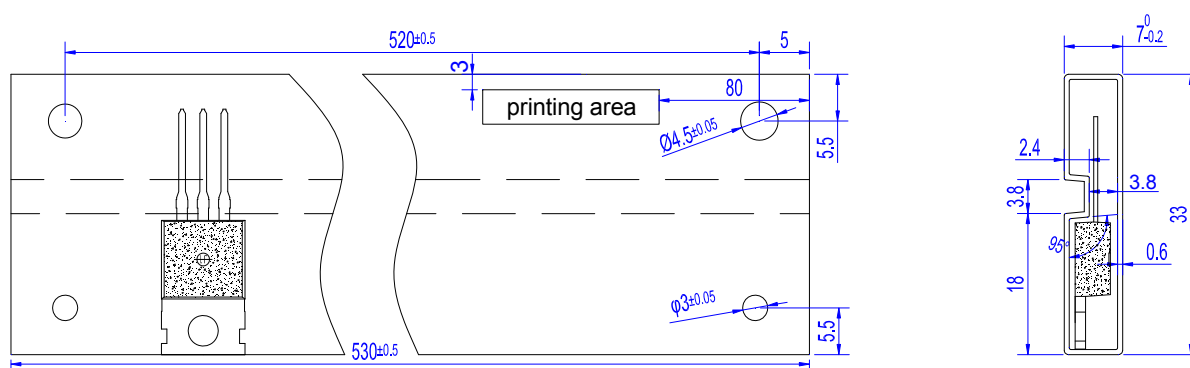
| Date         | Revision | Changes     |
|--------------|----------|-------------|
| Mar 21, 2022 | 1        | Last update |

## PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.70        |      | 0.90 | 0.028  |       | 0.035 |
| C    | 0.45        |      | 0.60 | 0.018  |       | 0.024 |
| C2   | 1.23        |      | 1.32 | 0.048  |       | 0.052 |
| C3   | 2.20        |      | 2.60 | 0.087  |       | 0.102 |
| D    | 8.90        |      | 9.90 | 0.350  |       | 0.390 |
| E    | 9.90        |      | 10.3 | 0.390  |       | 0.406 |
| F    | 6.30        |      | 6.90 | 0.248  |       | 0.272 |
| G    |             | 2.54 |      |        | 0.1   |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.39 |      |        | 0.133 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |

## DELIVERY MODE



| PACKAGE | OUTLINE | TUBE (PCS) | INNER BOX (PCS) | PER CARTON |
|---------|---------|------------|-----------------|------------|
| TO-220C | TUBE    | 50         | 1,000           | 5,000      |



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