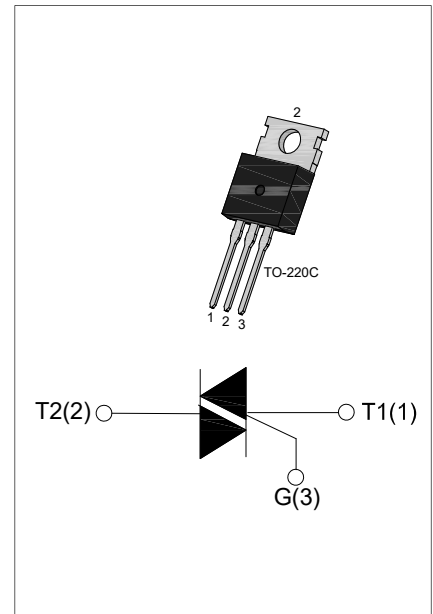




### DESCRIPTION:

With high ability to withstand the shock loading of large current, JST16C-600BW triac 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 |
|-------------------|-------|------|
| $I_{T(RMS)}$      | 16    | A    |
| $V_{DRM}/V_{RRM}$ | 600   | V    |

### 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 ( $T_j=25^\circ\text{C}$ )        |  | $V_{DRM}$    | 600             | V                      |
| Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )          |  | $V_{RRM}$    | 600             | V                      |
| Non repetitive surge peak Off-state voltage                         |  | $V_{DSM}$    | $V_{DRM} + 100$ | V                      |
| Non repetitive peak reverse voltage                                 |  | $V_{RSM}$    | $V_{RRM} + 100$ | V                      |
| RMS on-state current  | TO-220C<br>( $T_c=107^\circ\text{C}$ ) | $I_{T(RMS)}$ | 16              | A                      |
| Non repetitive surge peak on-state current (full cycle, F=50Hz)     |  | $I_{TSM}$    | 160             | A                      |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ )                       |  | $I^2t$       | 128             | $\text{A}^2\text{s}$   |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ ) |  | $di/dt$      | 50              | $\text{A}/\mu\text{s}$ |
| Peak gate current $t_p=20\mu\text{s}$                               |  | $I_{GM}$     | 4               | A                      |
| Average gate power dissipation                                      |  | $P_{G(AV)}$  | 1               | W                      |
| Peak gate power $t_p=20\mu\text{s}$                                 |  | $P_{GM}$     | 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   | 50   | mA               |
| $V_{GT}$ |  | I - II - III | MAX   | 1.3  | 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   | 70   | mA               |
|          |  | II           |       | 80   |                  |
| $I_H$    | $I_T = 100\text{mA}$   |              | MAX   | 60   | mA               |
| dv/dt    | $V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^{\circ}\text{C}$                 |              | MIN   | 1500 | V/ $\mu\text{s}$ |

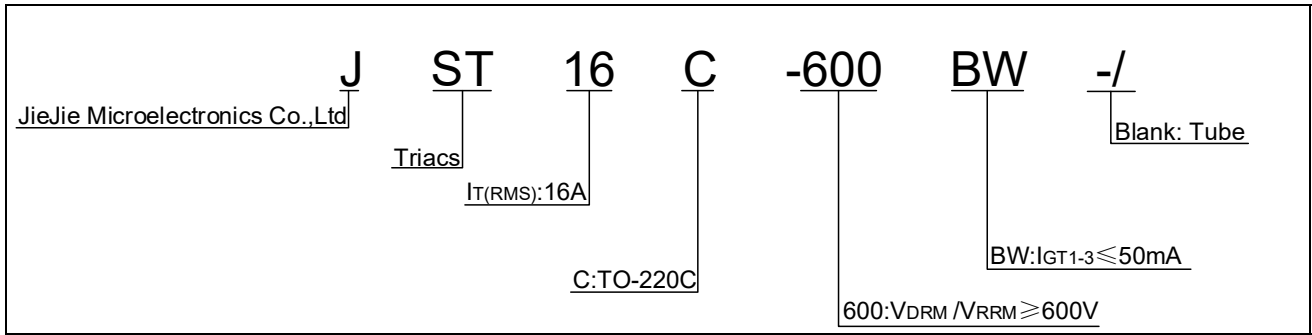
**STATIC CHARACTERISTICS**

| Symbol    | Parameter                                      |                             | Value(MAX) | Unit          |
|-----------|--|-----------------------------|------------|---------------|
| $V_{TM}$  | $I_{TM} = 22.5\text{A}$ $t_p = 380\mu\text{s}$ | $T_j = 25^{\circ}\text{C}$  | 1.5        | V             |
| $V_{TO}$  | Threshold voltage                              | $T_j = 125^{\circ}\text{C}$ | 0.93       | V             |
| $R_d$     | Dynamic resistance                             | $T_j = 125^{\circ}\text{C}$ | 26         | m $\Omega$    |
| $I_{DRM}$ | $V_D = V_{DRM}$ $V_R = V_{RRM}$                | $T_j = 25^{\circ}\text{C}$  | 5          | $\mu\text{A}$ |
| $I_{RRM}$ |  | $T_j = 125^{\circ}\text{C}$ | 1          | mA            |

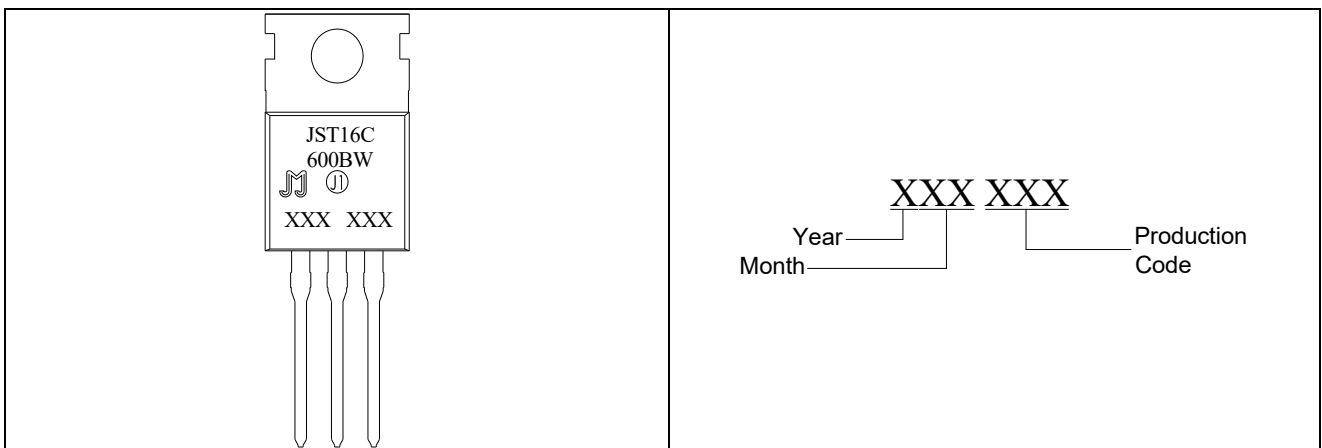
**THERMAL RESISTANCES**

| Symbol        | Parameter            |         | Value | Unit                        |
|---------------|----------------------|---------|-------|-----------------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220C | 1.7   | $^{\circ}\text{C}/\text{W}$ |

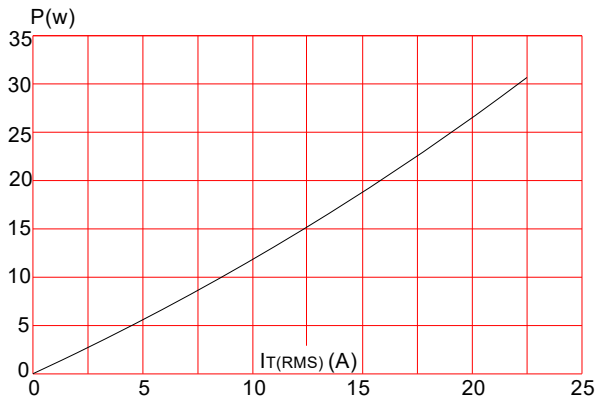
**ORDERING INFORMATION**



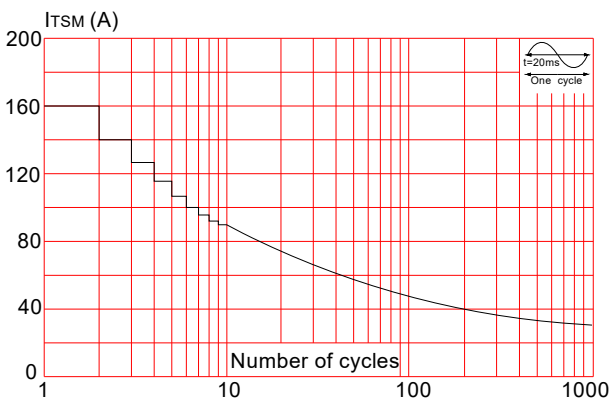
**MARKING**



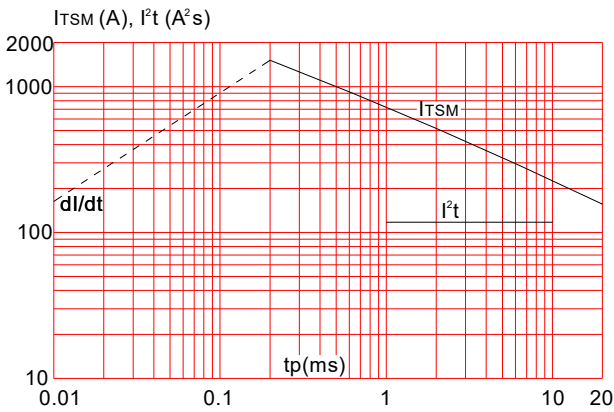
**FIG.1:** Maximum power dissipation versus RMS on-state current



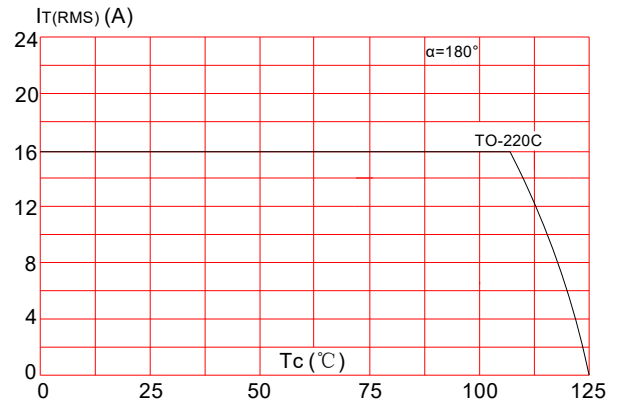
**FIG.3:** Surge peak on-state current versus number of cycles



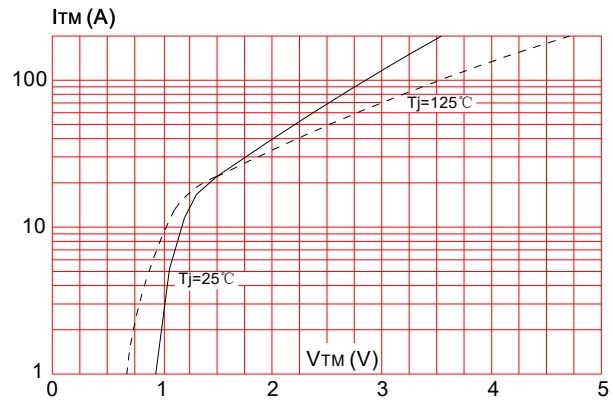
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



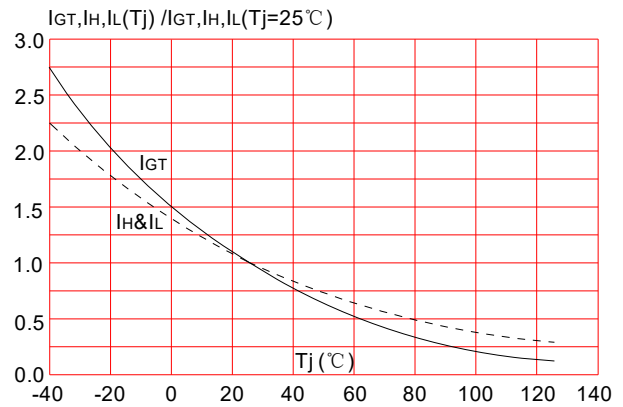
**FIG.2:** RMS on-state current versus case temperature



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



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



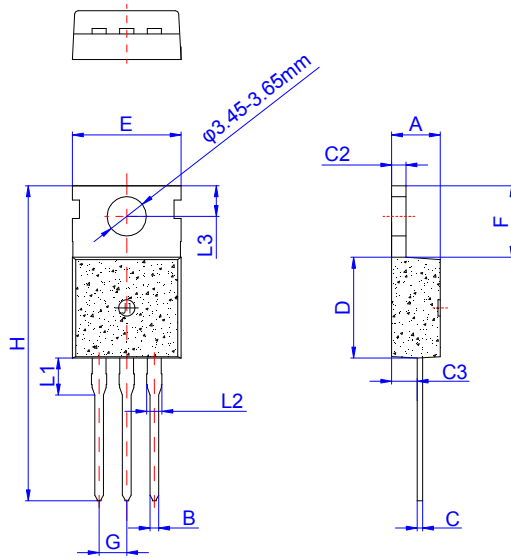
**ORDERING INFORMATION**

| Order code   | Voltage<br>$V_{DRM}/V_{RRM}$ (V) | IGT(mA) | Package | Base qty.<br>(pcs) | Delivery<br>mode |
|--------------|----------------------------------|---------|---------|--------------------|------------------|
| JST16C-600BW | 600                              | 50      | TO-220C | 50                 | Tube             |

**Document Revision History**

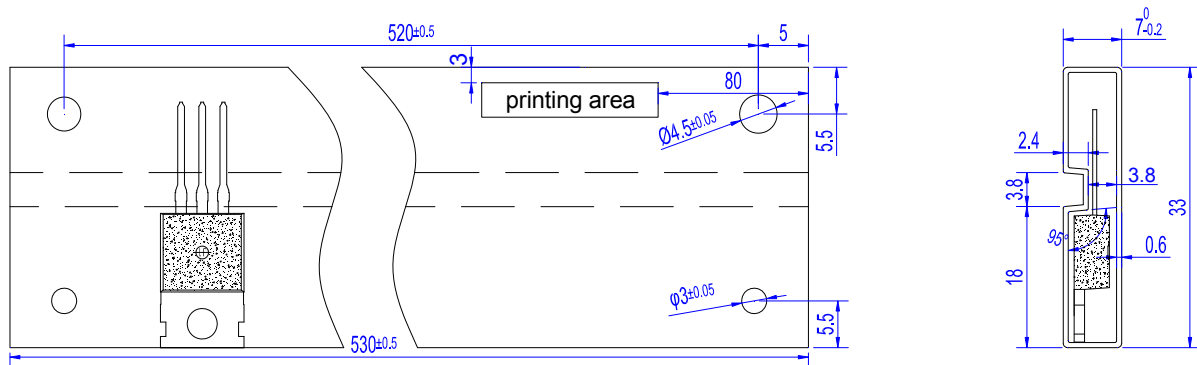
| Date         | Revision | Changes     |
|--------------|----------|-------------|
| Mar 21, 2022 | 1        | Last update |

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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