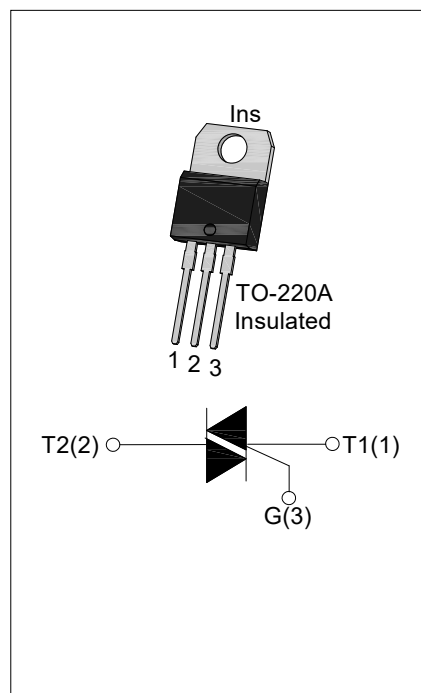




### DESCRIPTION:

With low holding and latching current, JST136A-600F triacs are especially recommended for use on middle and small resistance type power load. From all three terminals to external heatsink, JST136A-600F provides a rated insulation voltage of 2500  $V_{RMS}$ , complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant. (2011/65/EU)



### MAIN FEATURES

| Symbol            | Value | Unit |
|-------------------|-------|------|
| $I_{T(RMS)}$      | 4     | 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-220A<br>( $T_C=100^\circ\text{C}$ ) | $I_{T(RMS)}$ | 4               | A                |
| Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ ) |  | $I_{TSM}$    | 35              | A                |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ )                             |  | $I^2t$       | 6.1             | $A^2s$           |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )       | I - II -III                            | dI/dt        | 50              | A/ $\mu\text{s}$ |
|   | IV                                     |              | 10              |                  |
| Peak gate current   |  | $I_{GM}$     | 2               | A                |

|                                |             |     |   |
|--------------------------------|-------------|-----|---|
| Average gate power dissipation | $P_{G(AV)}$ | 0.5 | 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             |
|----------------------|--|-------------|-----|-------|------------------|
| $I_{GT}$             | $V_D=12\text{V } R_L=30\Omega$                                   | I - II -III | MAX | 25    | mA               |
|                      |  | IV          |     | 70    |                  |
| $V_{GT}$             |  | ALL         | MAX | 1.3   | V                |
| $V_{GD}$             | $V_D=V_{DRM} T_j=125^{\circ}\text{C}$<br>$R_L=3.3\text{K}\Omega$ | ALL         | MIN | 0.2   | V                |
| $I_L$                | $I_G=1.2I_{GT}$  | I -III      | MAX | 40    | mA               |
|                      |  | II -IV      |     | 60    |                  |
| $I_H$                | $I_T=100\text{mA}$   |             | MAX | 30    | mA               |
| dv/dt                | $V_D=2/3V_{DRM}$ Gate Open<br>$T_j=125^{\circ}\text{C}$          |             | MIN | 150   | V/ $\mu\text{s}$ |
| (dv/dt) <sub>c</sub> | (di/dt) <sub>c</sub> =1.7A/ms $T_j=125^{\circ}\text{C}$          |             | MIN | 5     | V/ $\mu\text{s}$ |

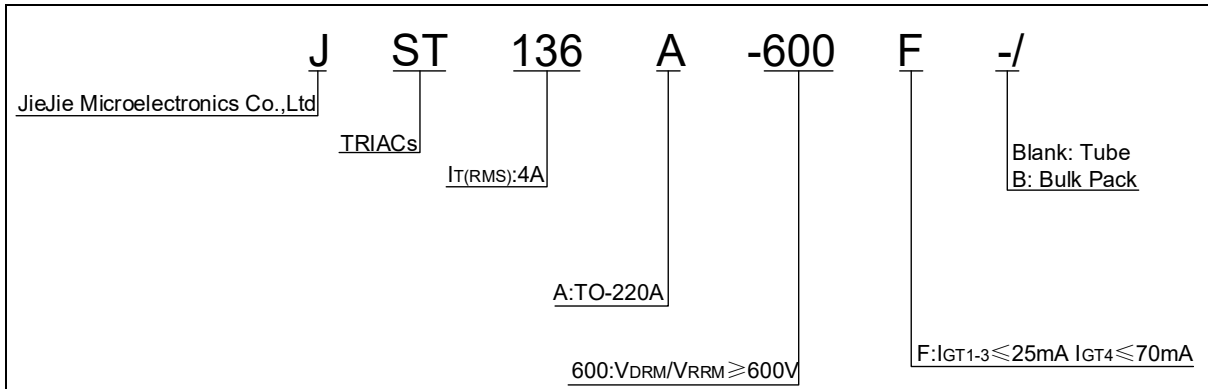
**STATIC CHARACTERISTICS**

| Symbol    | Parameter                                |                           | Value(MAX) | Unit          |
|-----------|--|---------------------------|------------|---------------|
| $V_{TM}$  | $I_{TM}=5.5\text{A } t_p=380\mu\text{s}$ | $T_j=25^{\circ}\text{C}$  | 1.6        | V             |
| $V_{TO}$  | Threshold voltage                        | $T_j=125^{\circ}\text{C}$ | 0.94       | V             |
| $R_d$     | Dynamic resistance                       | $T_j=125^{\circ}\text{C}$ | 105        | m $\Omega$    |
| $I_{DRM}$ | $V_D=V_{DRM} V_R=V_{RRM}$                | $T_j=25^{\circ}\text{C}$  | 5          | $\mu\text{A}$ |
| $I_{RRM}$ |  | $T_j=125^{\circ}\text{C}$ | 0.5        | mA            |

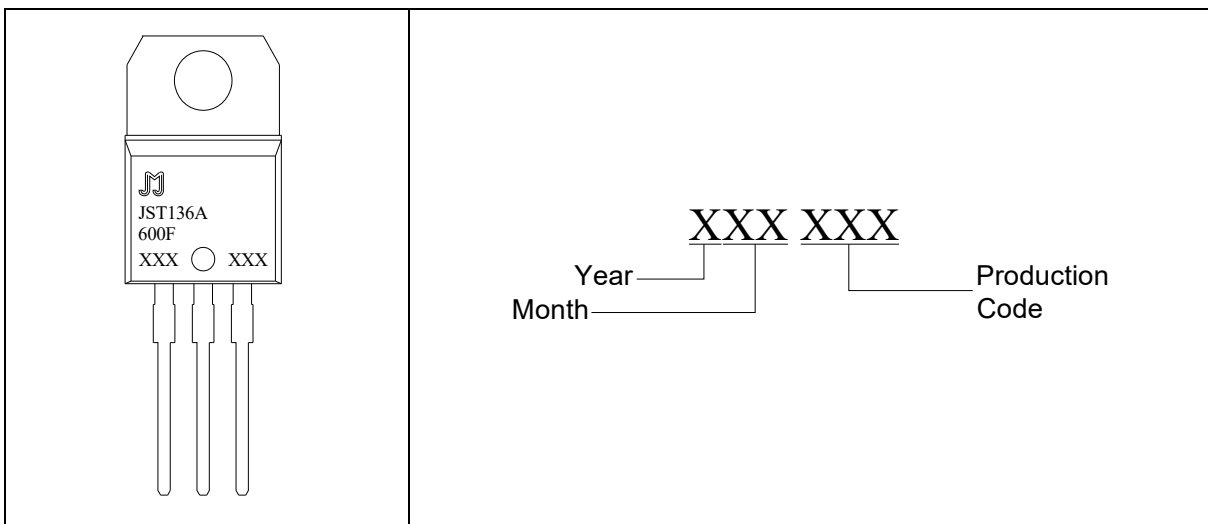
**THERMAL RESISTANCES**

| Symbol        | Parameter            |         | Value | Unit                        |
|---------------|----------------------|---------|-------|-----------------------------|
| $R_{th(j-c)}$ | junction to case(AC) | TO-220A | 3.5   | $^{\circ}\text{C}/\text{W}$ |

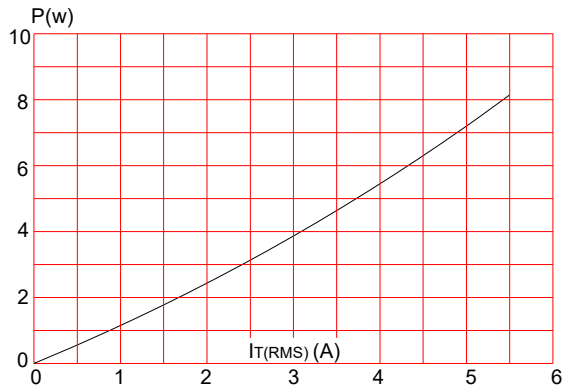
**ORDERING INFORMATION**



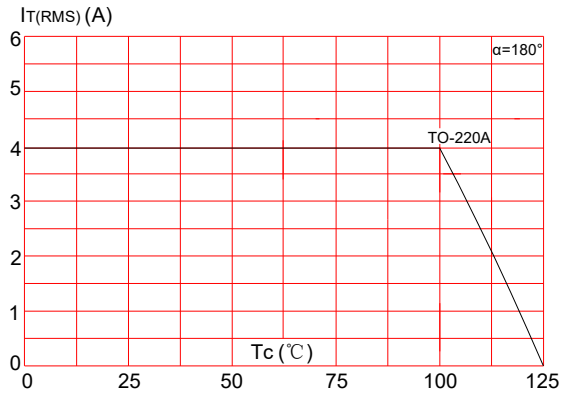
**MARKING**



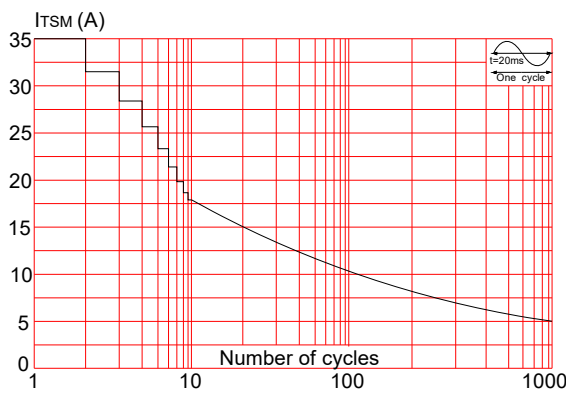
**FIG.1:** Maximum power dissipation versus RMS on-state current



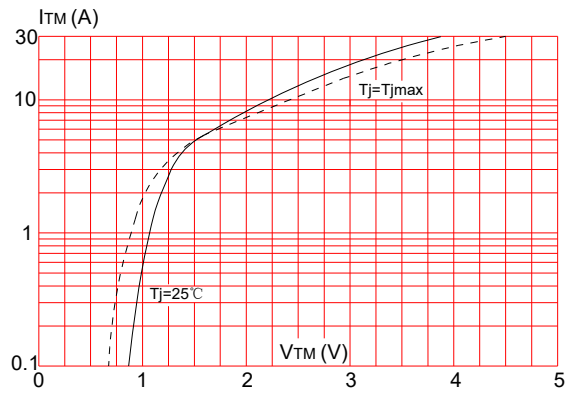
**FIG.2:** RMS on-state current versus case temperature



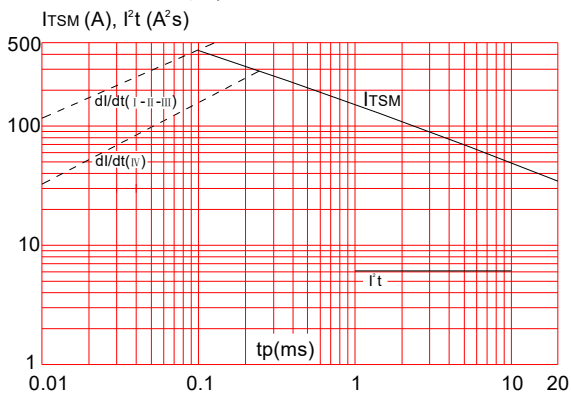
**FIG.3:** Surge peak on-state current versus number of cycles



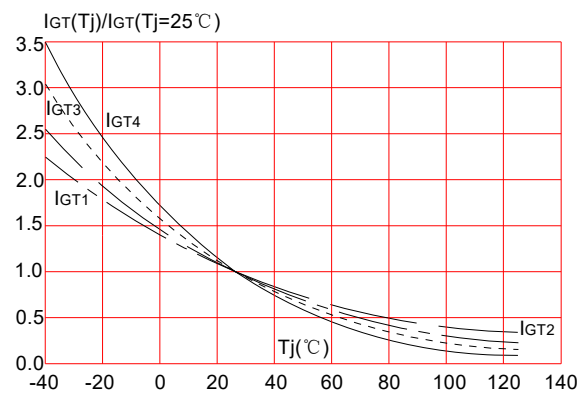
**FIG.4:** On-state characteristics (maximum values)



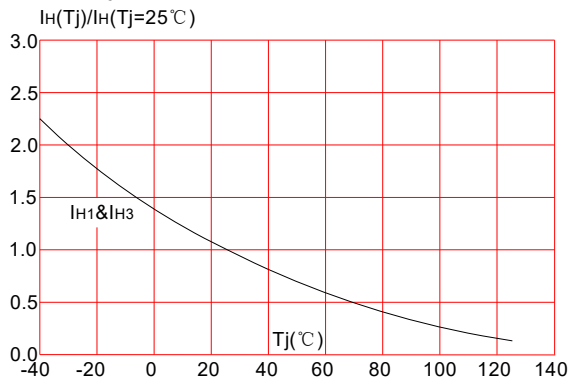
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$  and corresponding value of  $I^2t$  ( I - II -III:  $dI/dt < 50\text{A}/\mu\text{s}$ ; IV:  $dI/dt < 10\text{A}/\mu\text{s}$ )



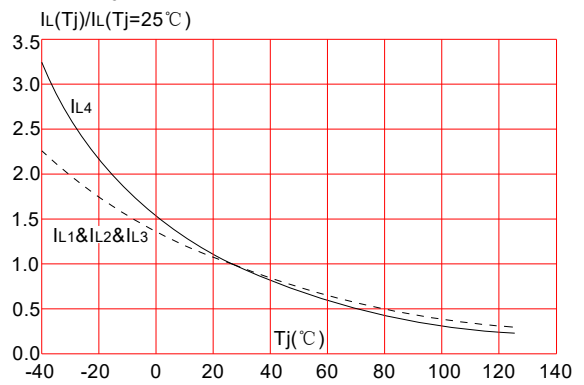
**FIG.6:** Relative variations of gate trigger current versus junction temperature



**FIG.7:** Relative variations of holding current versus junction temperature



**FIG.8:** Relative variations of latching current versus junction temperature



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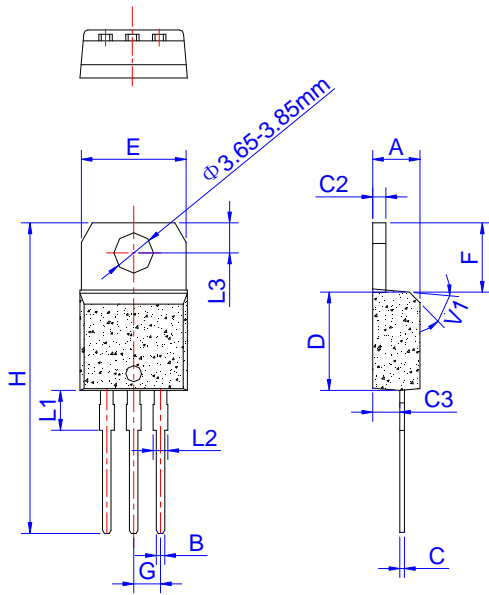
**ORDERING INFORMATION**

| Order code   | Voltage<br>V <sub>DRM</sub> /V <sub>RPM</sub> (V) | IGT(mA)   |    | Package | Base qty.<br>(pcs) | Delivery<br>mode |
|--------------|---|-----------|----|---------|--------------------|------------------|
|              |   | I -II-III | IV |         |                    |                  |
| JST136A-600F | 600   | 25        | 70 | TO-220A | 50                 | Tube             |

**Document Revision History**

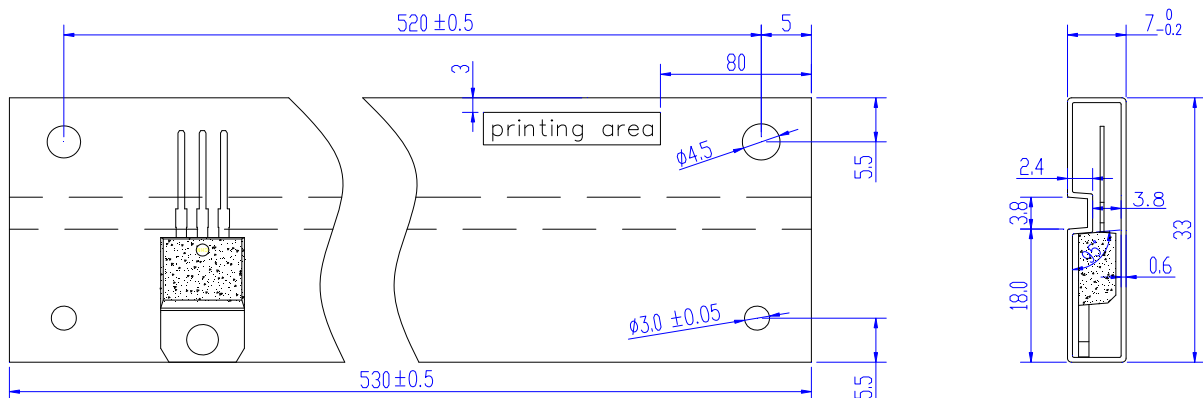
| Date         | Revision | Changes     |
|--------------|----------|-------------|
| Mar 18, 2022 | 1        | Last update |

PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.40        |      | 4.60 | 0.173  |       | 0.181 |
| B    | 0.61        |      | 0.88 | 0.024  |       | 0.035 |
| C    | 0.46        |      | 0.70 | 0.018  |       | 0.028 |
| C2   | 1.21        |      | 1.32 | 0.048  |       | 0.052 |
| C3   | 2.40        |      | 2.72 | 0.094  |       | 0.107 |
| D    | 8.60        |      | 9.70 | 0.339  |       | 0.382 |
| E    | 9.80        |      | 10.4 | 0.386  |       | 0.409 |
| F    | 6.55        |      | 6.95 | 0.258  |       | 0.274 |
| G    | 2.40        |      | 2.70 | 0.094  |       | 0.106 |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.75 |      |        | 0.148 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   | 2.65        |      | 2.95 | 0.104  |       | 0.116 |
| V1   |             | 45°  |      |        | 45°   |       |


DELIVERY MODE



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



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