

## DESCRIPTION:

The JST136K-600E 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. Package TO-252 is RoHS compliant.

## MAIN FEATURES

| Symbol            | Value       | Unit |
|-------------------|-------------|------|
| $I_{T(RMS)}$      | 4           | A    |
| $V_{DRM}/V_{RRM}$ | 600         | V    |
| $I_{GT} / / /$    | 10/10/10/25 | mA   |

## ABSOLUTE MAXIMUM RATINGS

| Parameter                                                                                                         |     | Symbol              | Value   | Unit             |
|-------------------------------------------------------------------------------------------------------------------|-----|---------------------|---------|------------------|
| Storage junction temperature range                                                                                |     | T <sub>stg</sub>    | -40-150 |                  |
| Operating junction temperature range                                                                              |     | T <sub>j</sub>      | -40-125 |                  |
| Repetitive peak off-state voltage (T <sub>j</sub> =25 )                                                           |     | V <sub>DRM</sub>    | 600     | V                |
| Repetitive peak reverse voltage (T <sub>j</sub> =25 )                                                             |     | V <sub>RRM</sub>    | 600     | V                |
| RMS on-state current (T <sub>c</sub> 083 )                                                                        |     | I <sub>T(RMS)</sub> | 4       | A                |
| Non repetitive surge peak on-state current<br>(full cycle , t <sub>p</sub> =20ms , T <sub>j</sub> =25 )           |     | I <sub>TSM</sub>    | 35      | A                |
| Non repetitive surge peak on-state current<br>(full cycle , t <sub>p</sub> =16.6ms , T <sub>j</sub> =25 )         |     |                     | 38.5    |                  |
| I <sup>2</sup> t value for fusing (t <sub>p</sub> =10ms , T <sub>j</sub> =25 )                                    |     | I <sup>2</sup> t    | 6.1     | A <sup>2</sup> s |
| Critical rate of rise of on-state current<br>(I <sub>G</sub> =2×I <sub>GT</sub> , f=100Hz , T <sub>j</sub> =125 ) | - - | di/dt               | 80      | A s              |
|                                                                                                                   |     |                     | 40      |                  |
| Peak gate current (t <sub>p</sub> =20 s , T <sub>j</sub> =125 )                                                   |     | I <sub>GM</sub>     | 2       | A                |
| Average gate power dissipation (T <sub>j</sub> =125 )                                                             |     | P <sub>G(AV)</sub>  | 0.5     | W                |
| Peak gate power                                                                                                   |     | P <sub>GM</sub>     | 5       | W                |
| Peak pulse voltage<br>(T <sub>j</sub> =25 ; non-repetitive,off-state;FIG.8)                                       |     | V <sub>pp</sub>     | 3.5     | kV               |

## ELECTRICAL CHARACTERISTICS (unless otherwise specified)

| Symbol               | Test Condition                                                                        | Quadrant | Value |     | Unit |
|----------------------|---------------------------------------------------------------------------------------|----------|-------|-----|------|
| I <sub>GT</sub>      | V <sub>D</sub> =12V R <sub>L</sub> =33                                                | - -      | MAX.  | 10  | mA   |
|                      |                                                                                       |          |       | 25  |      |
| V <sub>GT</sub>      |                                                                                       | ALL      | MAX.  | 1   | V    |
| V <sub>GD</sub>      | V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125<br>R <sub>L</sub> =3.3k          | ALL      | MIN.  | 0.2 | V    |
| I <sub>L</sub>       | I <sub>G</sub> =1.2I <sub>GT</sub>                                                    | -        | MAX.  | 20  | mA   |
|                      |                                                                                       | -        |       | 30  |      |
| I <sub>H</sub>       | I <sub>T</sub> =100mA                                                                 |          | MAX.  | 25  | mA   |
| dV/dt                | V <sub>D</sub> =400V Gate Open T <sub>j</sub> =110                                    |          | MIN.  | 300 | V s  |
| (dV/dt) <sub>c</sub> | (dI/dt) <sub>c</sub> =1.8A/ms, T <sub>j</sub> =110                                    |          | MIN.  | 6   | 9 V  |
| t <sub>on</sub>      | I <sub>G</sub> =40mA I <sub>A</sub> =200mA I <sub>R</sub> =20mA<br>T <sub>j</sub> =25 |          | TYP.  | 1.5 | s    |
| t <sub>off</sub>     |                                                                                       |          |       | 15  |      |

## STATIC CHARACTERISTICS

| Symbol    | Parameter                   |           | Value(MAX.) | Unit |
|-----------|-----------------------------|-----------|-------------|------|
| $V_{TM}$  | $I_{TM}=5A$ $t_p=380$ s     | $T_j=25$  | 1.7         | V    |
| $V_{TO}$  | Threshold voltage           | $T_j=125$ | 0.94        | V    |
| $R_D$     | Dynamic resistance          | $T_j=125$ | 124         | P    |
| $I_{DRM}$ | $V_D=V_{DRM}$ $V_R=V_{RRM}$ | $T_j=25$  | 5           | A    |
| $I_{RRM}$ |                             | $T_j=125$ | 0.3         | mA   |

## THERMAL RESISTANCES

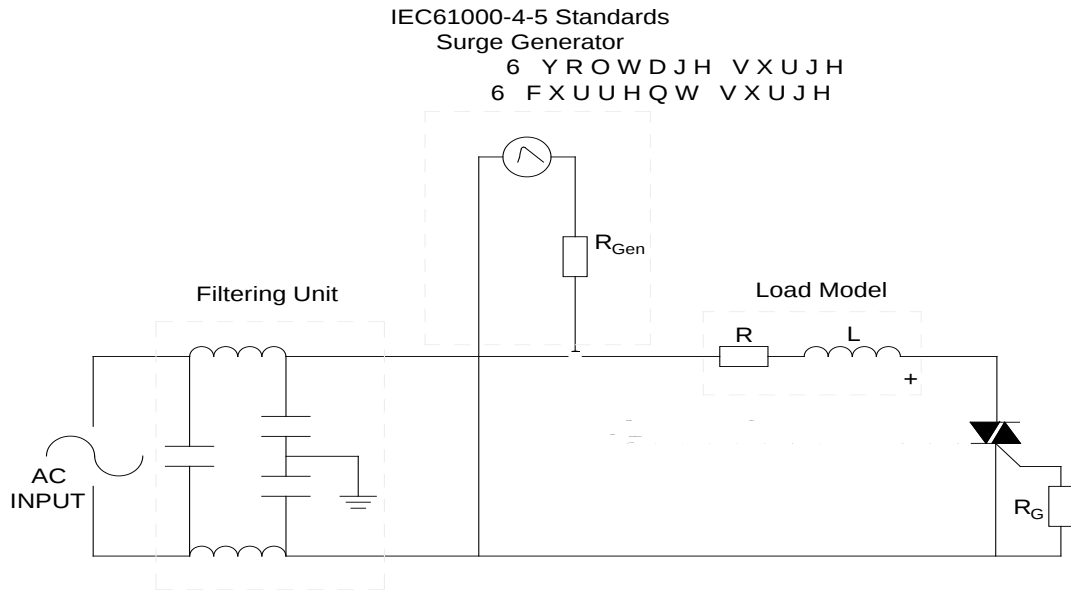
| Symbol        | Parameter                | Value | Unit |
|---------------|--------------------------|-------|------|
| $R_{th(j-c)}$ | junction to case (AC)    | 6.5   | /W   |
| $R_{th(j-a)}$ | junction to ambient (AC) | 150   | /W   |



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FIG.8 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards

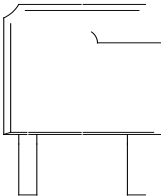


## ORDERING INFORMATION

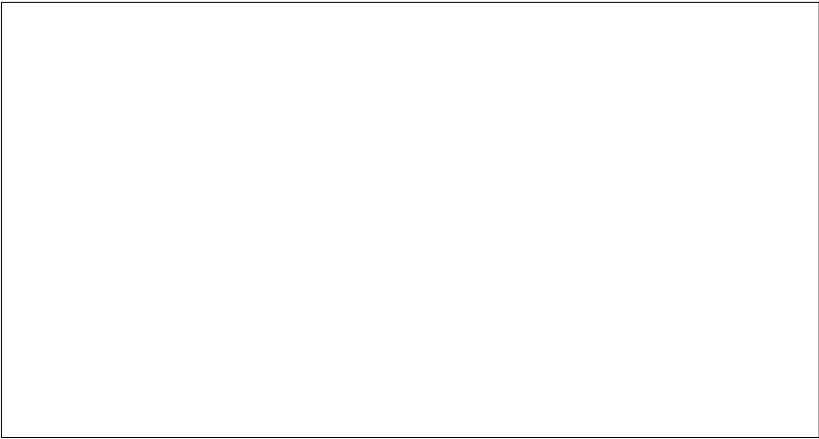
Order code

Voltage  
 $V_{\text{DRM}}$

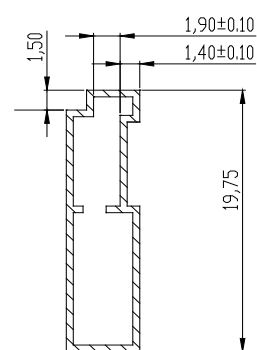
PACKAGE MECHANICAL DATA



| Ref.          | Dimensions      |      |      |        |      |       |
|---------------|-----------------|------|------|--------|------|-------|
|               | Millimeters     |      |      | Inches |      |       |
|               | Min.            | Typ. | Max. | Min.   | Typ. | Max.  |
| A             | 2.10            |      | 2.50 | 0.083  |      | 0.098 |
| A2            | 0               |      | 0.15 | 0      |      | 0.006 |
| B             | 0.66            |      | 0.86 | 0.026  |      | 0.034 |
| <del>B2</del> | <del>5.18</del> |      | 5.48 | 0.202  |      | 0.216 |
| C             | 0.40            |      | 0.60 | 0.016  |      | 0.024 |
| C2            | 0.44            |      | 0.58 | 0.017  |      | 0.023 |
| D             | 5.90            |      | 6.30 | 0.232  |      | 0.248 |
| D1            |                 |      |      |        |      |       |
| E             | 6.40            |      | 6.80 | 0.252  |      | 0.268 |
| E1            | 4.63            |      |      | 0.182  |      |       |
| G             | 4.47            |      | 4.67 | 0.176  |      | 0.184 |
| G1            | 2.18            |      | 2.38 | 0.086  |      | 0.094 |
|               |                 |      |      |        |      |       |
| L             | 1.09            |      | 1.21 | 0.043  |      | 0.048 |
| L2            | 1.35            |      | 1.65 | 0.053  |      | 0.065 |
|               |                 |      |      |        |      |       |



DELIVERY MODE



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