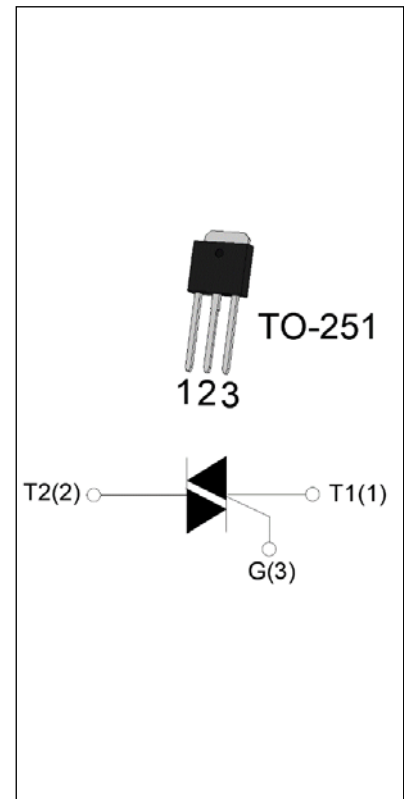


**JST08H-800SW 8A TRIAC**

Rev.A.1.1

**DESCRIPTION:**

The JST08H-800SW 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. JST08H-800SW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. From T2 terminals to external heatsink. Package TO-251 is RoHS compliant.


**MAIN FEATURES**

| Symbol             | Value    | Unit |
|--------------------|----------|------|
| $I_{T(RMS)}$       | 8        | A    |
| $V_{DRM}/V_{RRM}$  | 800      | V    |
| $I_{GT\ I/II/III}$ | 10/10/10 | mA   |

**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 ( $T_j=25^{\circ}C$ )                                              | $V_{DRM}$    | 800     | V                |
| Repetitive peak reverse voltage ( $T_j=25^{\circ}C$ )                                                | $V_{RRM}$    | 800     | V                |
| RMS on-state current ( $T_c \leq 91^{\circ}C$ )                                                      | $I_{T(RMS)}$ | 8       | A                |
| Non repetitive surge peak on-state current (full cycle , $t_p=20ms$ , $T_j=25^{\circ}C$ )            | $I_{TSM}$    | 80      | A                |
| Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$ , $T_j=25^{\circ}C$ )          |              | 88      |                  |
| $I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25^{\circ}C$ )                                           | $I^2t$       | 32      | A <sup>2</sup> s |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100Hz$ , $T_j=125^{\circ}C$ ) | $di/dt$      | 50      | A/ $\mu s$       |
| Peak gate current ( $t_p=20\mu s$ , $T_j=125^{\circ}C$ )                                             | $I_{GM}$     | 4       | A                |
| Average gate power dissipation ( $T_j=125^{\circ}C$ )                                                | $P_{G(AV)}$  | 0.5     | W                |

|                                                                                      |          |     |    |
|--------------------------------------------------------------------------------------|----------|-----|----|
| Peak gate power                                                                      | $P_{GM}$ | 10  | W  |
| Peak pulse voltage<br>( $T_j=25^{\circ}\text{C}$ ; non-repetitive, off-state; FIG.7) | $V_{pp}$ | 1.5 | kV |

**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   | 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.  | 25  | mA               |
|             |                                                                                    | II          |       | 30  |                  |
| $I_H$       | $I_T=100\text{mA}$                                                                 |             | MAX.  | 15  | mA               |
| $dV/dt$     | $V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$                              |             | MIN.  | 400 | V/ $\mu\text{s}$ |
| $(dI/dt)_c$ | $(dV/dt)_c=10\text{V}/\mu\text{s}$ , $T_j=125^{\circ}\text{C}$                     |             | MIN.  | 3   | A/ms             |
| $t_{on}$    | $I_G=20\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$<br>$T_j=25^{\circ}\text{C}$ |             | TYP.  | 2.5 | $\mu\text{s}$    |
| $t_{off}$   |                                                                                    |             |       | 25  |                  |

**STATIC CHARACTERISTICS**

| Symbol    | Parameter                                |                           | Value(MAX.) | Unit             |
|-----------|------------------------------------------|---------------------------|-------------|------------------|
| $V_{TM}$  | $I_{TM}=11\text{A}$ $t_p=380\mu\text{s}$ | $T_j=25^{\circ}\text{C}$  | 1.5         | V                |
| $V_{TO}$  | Threshold voltage                        | $T_j=125^{\circ}\text{C}$ | 0.8         | V                |
| $R_D$     | Dynamic resistance                       | $T_j=125^{\circ}\text{C}$ | 44          | $\text{m}\Omega$ |
| $I_{DRM}$ | $V_D=V_{DRM}$ $V_R=V_{RRM}$              | $T_j=25^{\circ}\text{C}$  | 5           | $\mu\text{A}$    |
| $I_{RRM}$ |                                          | $T_j=125^{\circ}\text{C}$ | 0.35        | mA               |

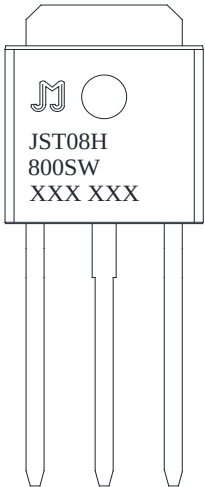
**THERMAL RESISTANCES**

| Symbol        | Parameter                | Value | Unit                        |
|---------------|--------------------------|-------|-----------------------------|
| $R_{th(j-c)}$ | junction to case (AC)    | 3     | $^{\circ}\text{C}/\text{W}$ |
| $R_{th(j-a)}$ | junction to ambient (AC) | 120   | $^{\circ}\text{C}/\text{W}$ |

ORDERING INFORMATION

|                                   |                   |                 |          |                            |                       |
|-----------------------------------|-------------------|-----------------|----------|----------------------------|-----------------------|
| <u>J</u>                          | <u>ST</u>         | <u>08</u>       | <u>H</u> | <u>-800</u>                | <u>SW</u>             |
| JieJie Microelectronics Co., Ltd. | Triacs            |                 |          |                            |                       |
|                                   | <u>IT(RMS):8A</u> |                 |          |                            |                       |
|                                   |                   | <u>H:TO-251</u> |          |                            |                       |
|                                   |                   |                 |          |                            | <u>SW:IGT1-3≤10mA</u> |
|                                   |                   |                 |          | <u>800:VDRM /VRRM≥800V</u> |                       |

MARKING

|                                                                                                                                                                                                                   |                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
|  <p>The diagram shows a TO-251 package with a marking area containing the following text:<br/>JST08H<br/>800SW<br/>XXX XXX</p> | <p>XXX XXX</p> <p>Year<br/>Month</p> <p>Production Code</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|

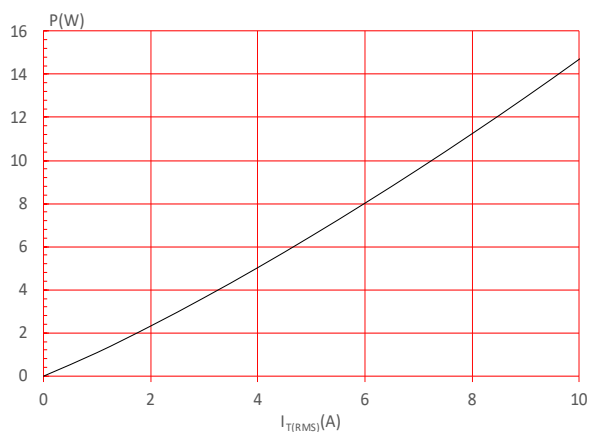
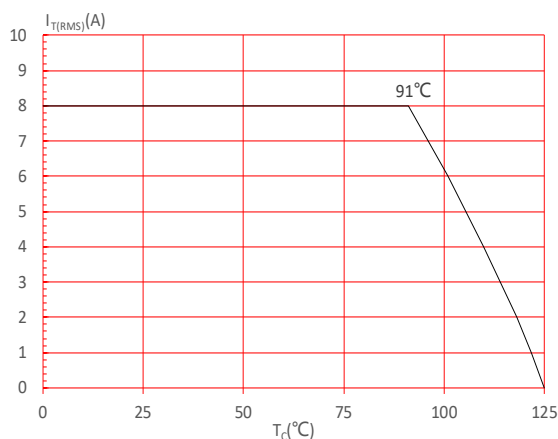
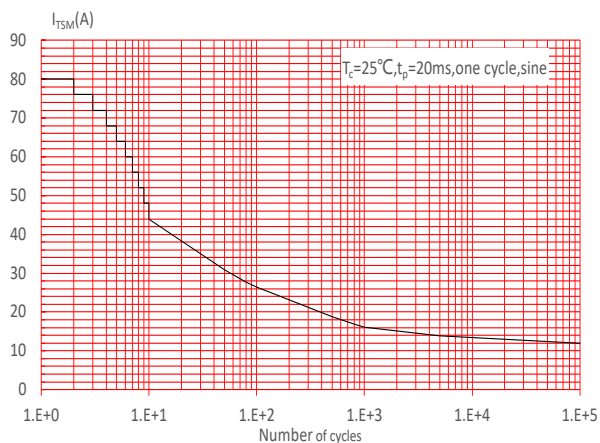
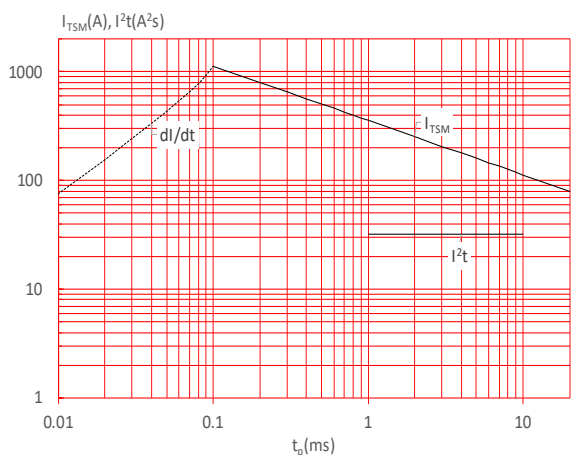
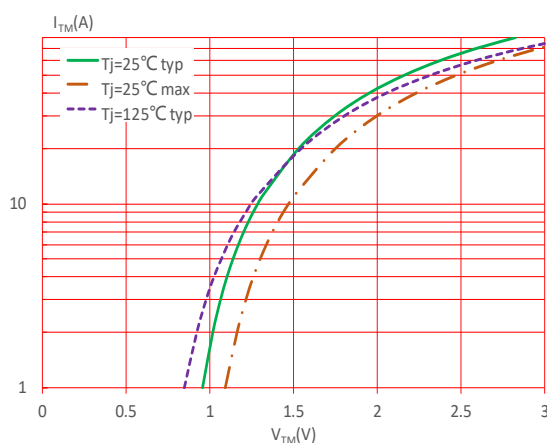
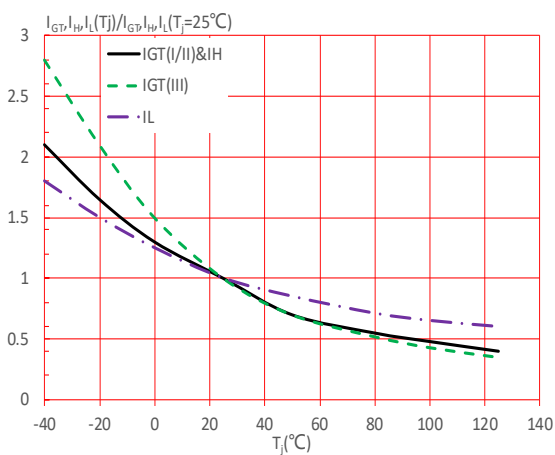
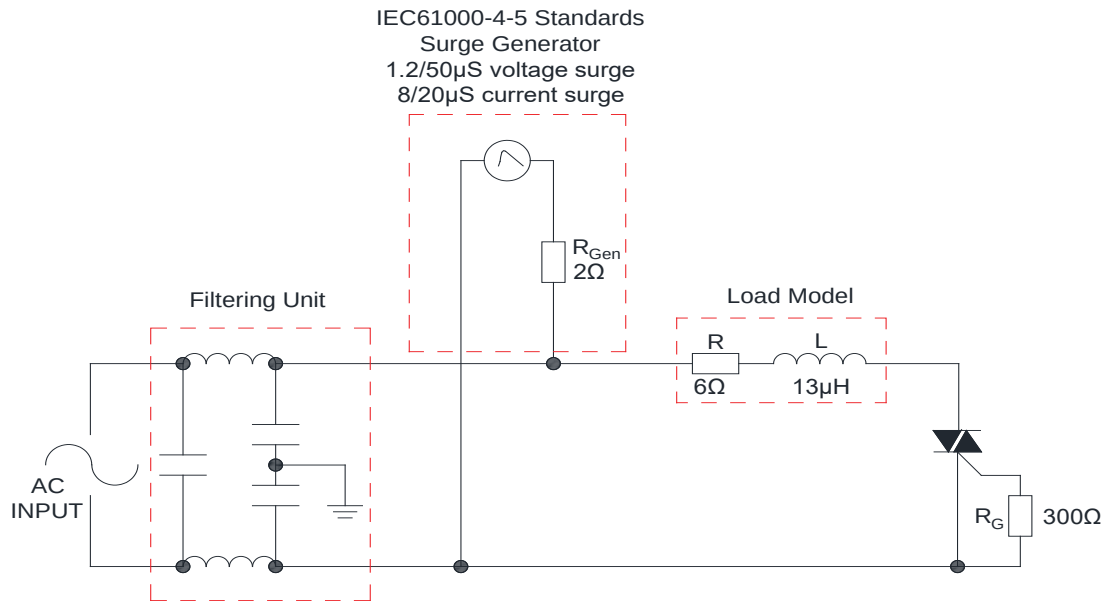
**FIG.1:** Maximum power dissipation versus RMS on-state current**FIG.2:** RMS on-state current versus case temperature**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20ms$ , and corresponding value of  $I^2t$  ( $di/dt < 50A/\mu s$ )**FIG.4:** On-state characteristics**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



## LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics

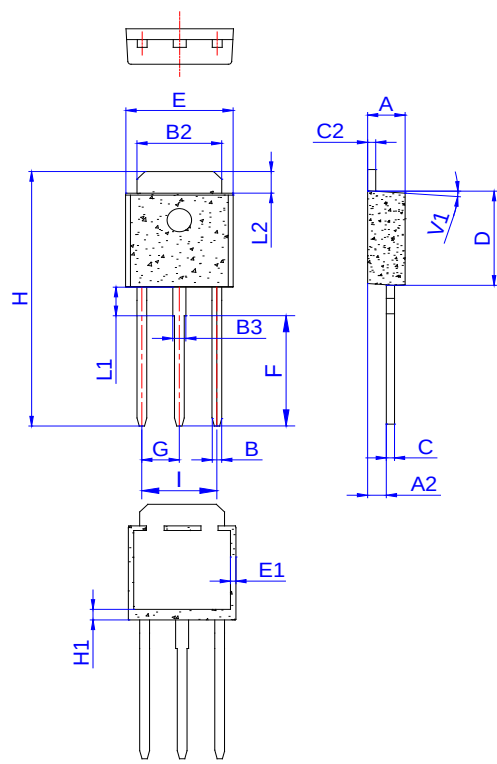
**ORDERING INFORMATION**

| Order code   | Voltage<br>$V_{\text{DRM}}/V_{\text{RRM}}$ (V) | IGT(mA)      | Package | Base qty.<br>(pcs) | Delivery<br>mode |
|--------------|------------------------------------------------|--------------|---------|--------------------|------------------|
|              |                                                | I - II - III |         |                    |                  |
| JST08H-800SW | 800                                            | 10           | TO-251  | 80                 | Tube             |

**Document Revision History**

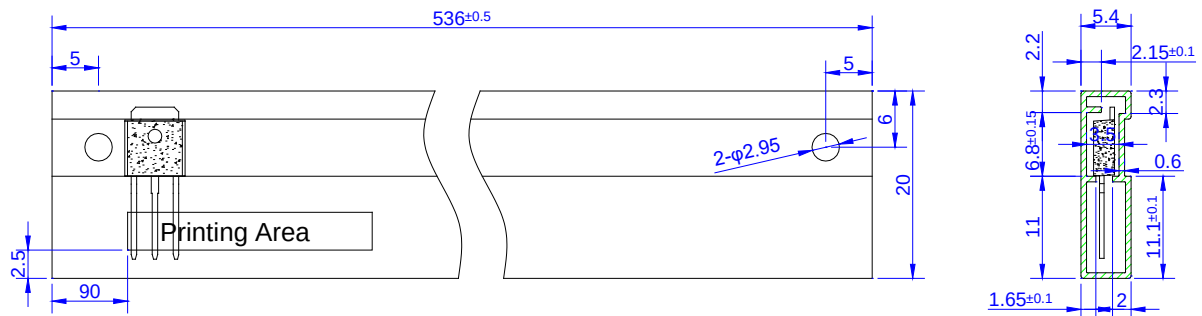
| Date         | Revision | Changes                        |
|--------------|----------|--------------------------------|
| Apr.12, 2023 | A.1.0    | Last updated                   |
| Oct.16, 2025 | A.1.1    | Revise PACKAGE MECHANICAL DATA |

PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |       |        |      |       |
|------|-------------|------|-------|--------|------|-------|
|      | Millimeters |      |       | Inches |      |       |
|      | Min.        | Typ. | Max.  | Min.   | Typ. | Max.  |
| A    | 2.20        |      | 2.40  | 0.086  |      | 0.095 |
| A2   | 1.00        |      | 1.30  | 0.039  |      | 0.051 |
| B    | 0.50        |      | 0.70  | 0.020  |      | 0.028 |
| B2   | 5.10        |      | 5.40  | 0.200  |      | 0.213 |
| B3   | 0.70        |      | 1.00  | 0.028  |      | 0.039 |
| C    | 0.45        |      | 0.62  | 0.018  |      | 0.024 |
| C2   | 0.48        |      | 0.62  | 0.019  |      | 0.024 |
| D    | 6.00        |      | 6.20  | 0.236  |      | 0.244 |
| E    | 6.40        |      | 6.70  | 0.252  |      | 0.264 |
| E1   | 0.60        |      | 1.00  | 0.024  |      | 0.039 |
| F    | 6.90        |      | 7.30  | 0.272  |      | 0.287 |
| G    | 2.20        |      | 2.40  | 0.087  |      | 0.094 |
| H    | 16.00       |      | 17.00 | 0.630  |      | 0.669 |
| H1   | 1.45        |      | 1.85  | 0.057  |      | 0.073 |
| I    | 4.40        |      | 4.80  | 0.173  |      | 0.189 |
| L1   | 1.80        |      | 2.20  | 0.071  |      | 0.087 |
| L2   | 1.25        |      | 1.55  | 0.049  |      | 0.061 |
| V1   |             | 4°   |       |        | 4°   |       |

DELIVERY MODE



| PACKAGE | OUTLINE | TUBE (PCS) | INNER BOX (PCS) | PER CARTON |
|---------|---------|------------|-----------------|------------|
| TO-251  | TUBE    | 80         | 4,000           | 20,000     |

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