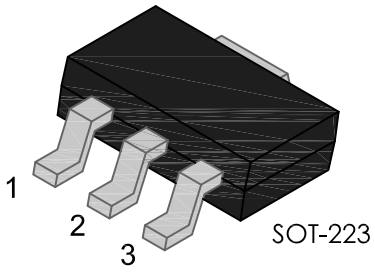
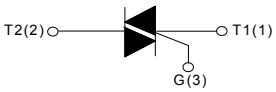
JSMICRO SEMICONDUCTOR

# BT134W-600E

## DESCRIPTION:

B T134 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load.




## 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 | ℃ |
| Operating junction temperature range | | $T_j$ | -40 - 125 | ℃ |
| Repetitive peak off-state voltage($T_j$ =25℃) | | $V_{DRM}$ | 600 | V |
| Repetitive peak reverse voltage($T_j$ =25℃) | | $V_{RRM}$ | 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 | SOT-223 ($T_C$=75℃) | $I_{T(RMS)}$ | 4 | A |

| | | | | |
|---|---|---|---|---|
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | | $I_{TSM}$ | 25 | A |
| $I^2t$ value for fusing (tp =10ms) | | $I^2t$ | 3.1 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$ =2×$I_{GT}$) | Ⅰ-Ⅱ-Ⅲ | dI/dt | 50 | A/μs |
| | 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℃ unless otherwise specified)

| Symbol | Test Condition | Quadrant | | Value | Unit |
|---|---|---|---|---|---|
| | | | | E | |
| $I_{GT}$ | $V_D$=12V $R_L$=33Ω | Ⅰ-Ⅱ-Ⅲ | MAX | 5 | mA |
| | | Ⅳ | | 10 | |
| $V_{GT}$ | | ALL | MAX | 1.3 | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$ $T_j$=125℃ $R_L$=3.3KΩ | ALL | MIN | 0.2 | V |
| $I_L$ | $I_G$=1.2$I_{GT}$ | Ⅰ-Ⅲ-Ⅳ | MAX | 10 | mA |
| | | Ⅱ | | 15 | |
| $I_H$ | $I_T$=100mA | | MAX | 10 | mA |
| dV/dt | $V_D$=2/3$V_{DRM}$ Gate Open $T_j$=125℃ | | MIN | 50 | V/μs |
| (dV/dt)c | (dI/dt)c=1.1A/ms $T_j$=125℃ | | MIN | 1 | V/μs |

**STATIC CHARACTERISTICS**

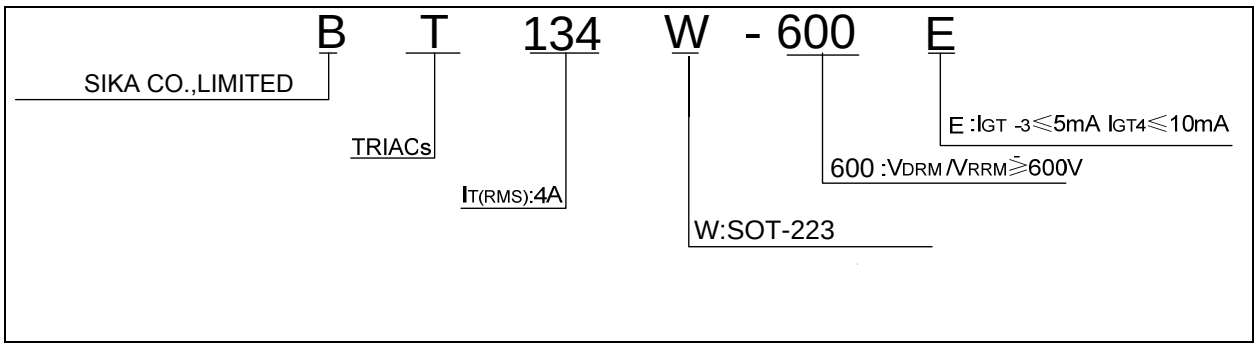
| Symbol | Parameter | | Value(MAX) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$=5A tp=380μs | $T_j$=25℃ | 1.7 | V |
| $I_{DRM}$ | $V_D$=$V_{DRM}$ $V_R$=$V_{RRM}$ | $T_j$=25℃ | 5 | μA |
| $I_{RRM}$ | | $T_j$=125℃ | 0.5 | mA |

## THERMAL RESISTANCES

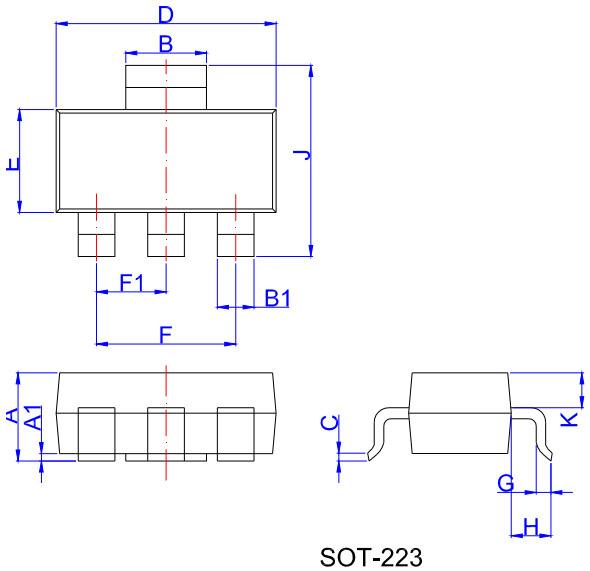
| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| $R_{th(j-c)}$ | junction to case(AC) | SOT-223 | 4.5 | ℃/W |

## ORDERING INFORMATION

T




## PACKAGE MECHANICAL DATA




SOT-223

| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 1.5 | 1.6 | 1.8 | 0.059 | 0.063 | 0.071 |
| A1 | 0.01 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| B | 2.9 | 3.0 | 3.1 | 0.114 | 0.118 | 0.122 |
| B1 | 0.6 | 0.7 | 0.8 | 0.024 | 0.028 | 0.031 |
| C | 0.22 | 0.26 | 0.32 | 0.009 | 0.010 | 0.013 |
| D | 6.3 | 6.5 | 6.7 | 0.248 | 0.256 | 0.264 |
| E | 3.3 | 3.5 | 3.7 | 0.130 | 0.138 | 0.146 |
| F | | 4.6 | | | 0.181 | |
| F1 | | 2.3 | | | 0.091 | |
| G | 0.7 | 0.9 | 1.1 | 0.028 | 0.035 | 0.043 |
| H | 1.5 | 1.75 | 2.0 | 0.059 | 0.069 | 0.079 |
| J | 6.7 | 7.0 | 7.3 | 0.264 | 0.276 | 0.287 |
| K | 0.8 | 0.9 | 1.0 | 0.031 | 0.035 | 0.039 |

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

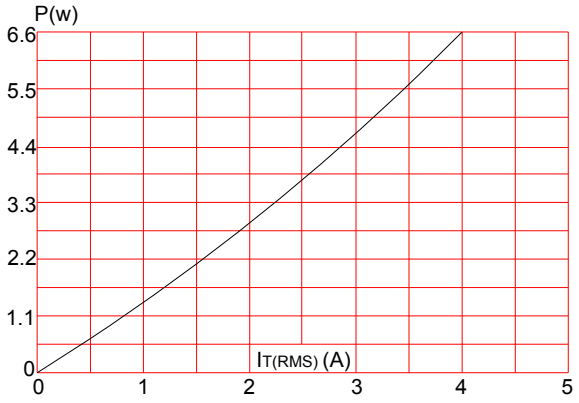



**FIG.2:** RMS on-state current versus case temperature

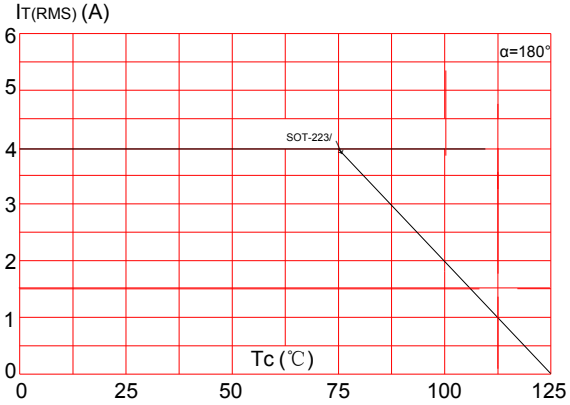



**FIG.3:** Surge peak on-state current versus number of cycles

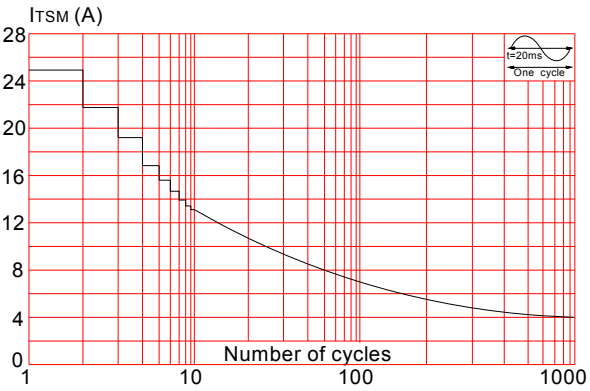



**FIG.4:** On-state characteristics (maximum values)

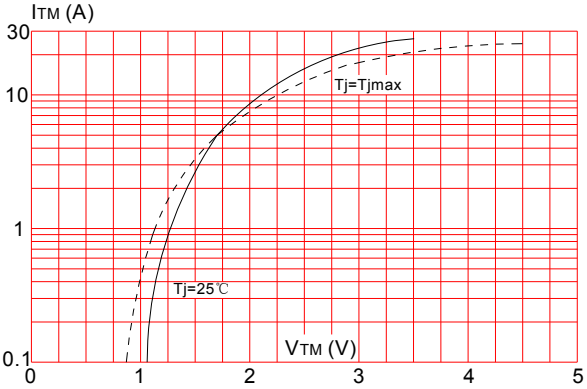



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of $I^2t$ (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs; Ⅳ:dI/dt < 10A/μs)

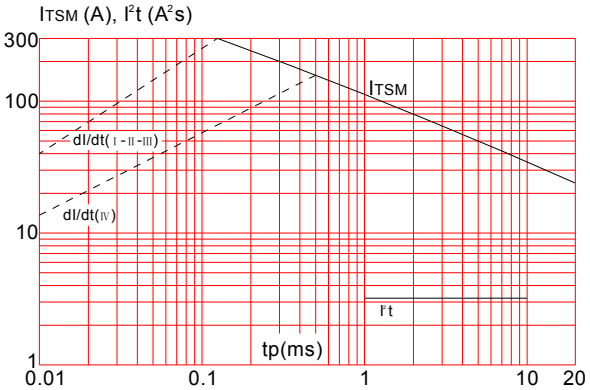



**FIG.6:** Relative variations of gate trigger current versus junction temperature

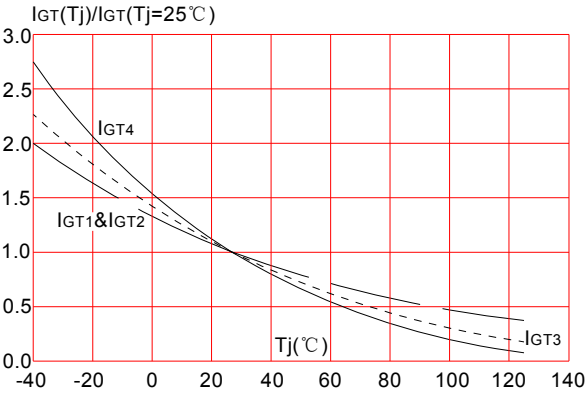


**FIG.7:** Relative variations of holding current versus junction temperature

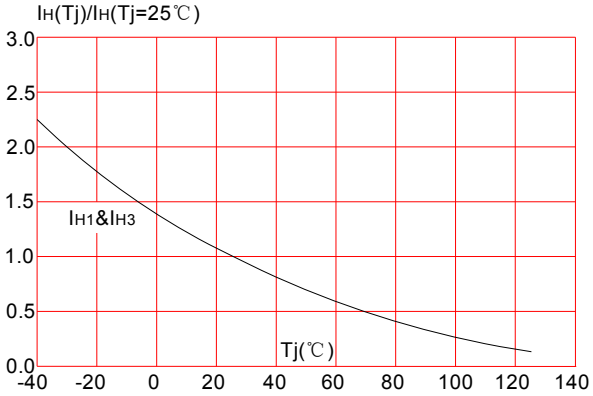



**FIG.8:** Relative variations of latching current versus junction temperature