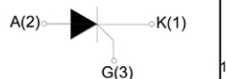
# SB7560S 75A SCRs

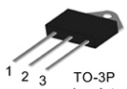
## FEATURES

- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

## Parameters Summary








## APPLICATIONS

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

SMD Device Halogen Free

Pb-free

RoHS COMPLIANT

## ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Storage junction temperature range | Tstg | -40 ~150 | ℃ |
| Operating junction temperature range | Tj | -40 ~125 | ℃ |
| Repetitive peak off-state voltage (T =25℃) | $V_{DRM}$ | 1200/1600 | V |
| Repetitive peak reverse voltage (T =25℃) | $V_{RRM}$ | 1200/1600 | 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 (T =100℃) | $I_{T(RMS)}$ | 75 | A |
| Non repetitive surge peak on-state current | $I_{TSM}$ | 700 | A |
| $I^2t$ value for fusing (tp=10ms) | $I^2t$ | 2450 | $A^2s$ |
| Critical rate of rise of on-state curren t(I =2×IGT, tr ≤ 100 ns) | di/dt | 150 | A/μS |
| Peak gate current | $I_{GM}$ | 5 | A |
| Average gate power dissipation | $P_{G(AV)}$ | 2 | W |

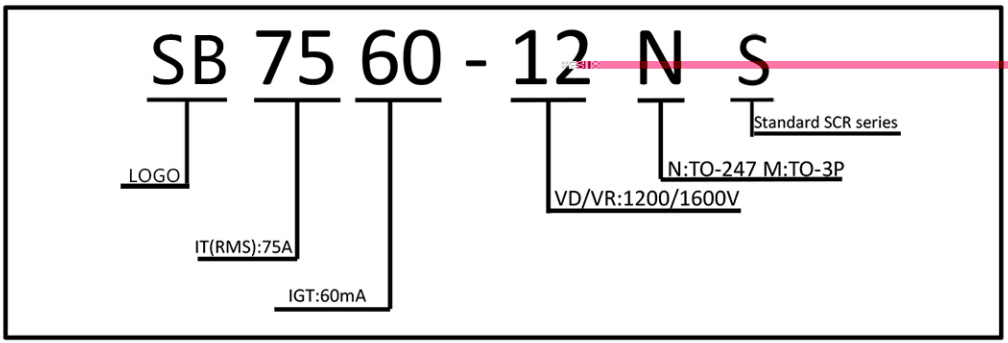
## Thermal Resistances

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| Rth(j-c) | Junction to case (DC) | TO-3P | 0. 60 | ℃/W |
| | | TO-247 | 0. 55 | |

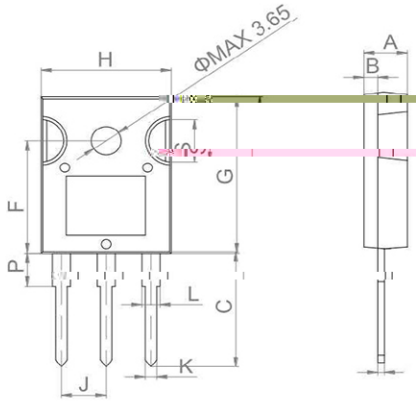
| Symbol | Test Condition | Value |
|---|---|---|
| $V_{GT}$ | | |
| $V_{GD}$ | VD=VDRM Tj=125℃ R=1KΩ | |
| $I_L$ | $I_G=1.2I_{GT}$ | |
| dV/dt | | |

| Symbol | Parameter | | Value(MAX) |
|---|---|---|---|
| $V_{TM}$ | ITM =140A tp=380μs | Tj =25℃ | |
| $I_{DRM}$ | $V_D=V_{DRM}$ $V_R=V_{RRM}$ | | |
| $I_{RRM}$ | | Tj =125℃ | |

## Ordering Information Scheme

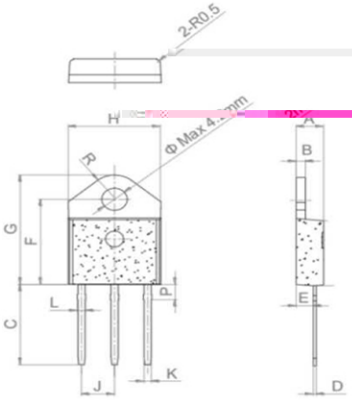



## TO-247 Package Mechanical Data




| Ref. | Dimensions | | | |
|---|---|---|---|---|
| | Millimeters | | Inches | |
| | Mn. | Max. | Mn. | Max. |
| A | 4.9 | 5.4 | 0.193 | |
| B | | 2.6 | | 0.063 |
| C | 14.35 | 15.4 | 0.565 | |
| D | 0.5 | 0.8 | 0.020 | |
| F | 14.4 | 15.1 | 0.567 | |
| G | 19.7 | 20.6 | 0.775 | |
| H | 15.4 | 16.2 | 0.606 | 0.638 |
| J | 5.3 | 5.6 | 0.209 | |
| K | | | | |
| L | 2.8 | 3.3 | 0.110 | |
| P | 3.7 | 4.2 | 0.146 | |
| S | 5.35 | 5.65 | 0.211 | |

## TO-3P Package Mechanical Data




| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 1.40 | | 1.60 | 0.055 | | 0.062 |
| C | 15.48 | | 15.88 | 0.609 | | 0.625 |
| D | 0.50 | | 0.70 | 0.019 | | 0.027 |
| E | 2.70 | | 2.90 | 0.106 | | 0.114 |
| F | 15.92 | | 16.32 | 0.626 | | 0.642 |
| G | 20.27 | | 20.67 | 0.798 | | 0.813 |
| H | 15.15 | | 15.35 | 0.590 | | 0.604 |
| J | | 5.45 | | | 0.214 | 0.216 |
| K | 1.10 | | 1.30 | 0.043 | | 0.051 |
| L | 1.15 | | 1.35 | 0.045 | | 0.053 |
| P | 2.68 | | 3.08 | 0.105 | | 0.121 |
| R | | 4.20 | | | 0.165 | |

FIG.1 Maximum power dissipation versus on-state current

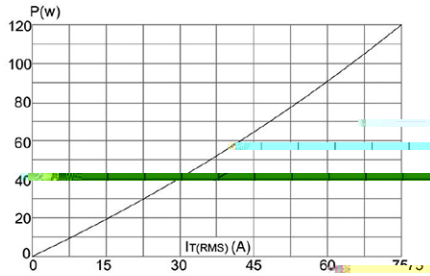



FIG.2: on-state current versus case temperature

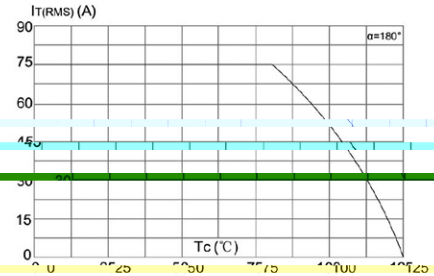



FIG.3: Surge peak on-state current versus number of cycles

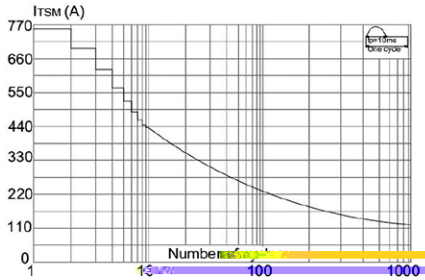



FIG.4: On-state characteristics (maximum values)

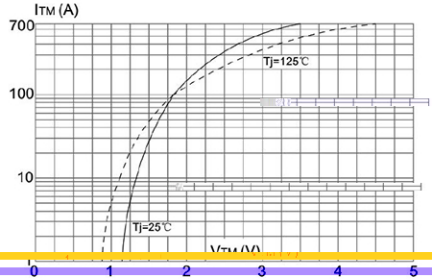



FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<10ms, and corresponding value of I2 t (dI/dt < 50A/μs)

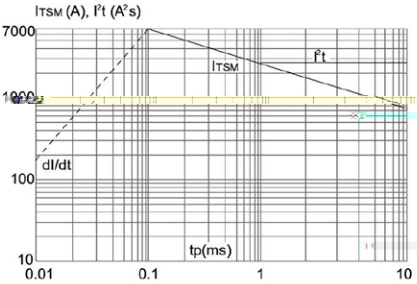



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature