

# Fast Recovery Rectifier

TRS1J

## Features

- Low forward voltage drop
- High forward surge current capability
- Low-profile SMD ideal for automated manufacturing
- RoHS compliant with Halogen-free



## Mechanical Data

- Case: SMA molded plastic
- Molding compound, UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end

## Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter                                                  | Symbol            | TRS1J | Unit |
|------------------------------------------------------------|-------------------|-------|------|
| Peak Repetitive Reverse Voltage                            | V <sub>RRM</sub>  | 600   | V    |
| RMS Reverse Voltage                                        | V <sub>RMS</sub>  | 420   | V    |
| DC Blocking Voltage                                        | V <sub>DC</sub>   | 600   | V    |
| Maximum Average Forward Output Current                     | I <sub>F_AV</sub> | 1.0   | A    |
| Peak Forward Surge Current,<br>8.3ms Single Half Sine wave | I <sub>FSM</sub>  | 30    | A    |

## Thermal Characteristics

| Parameter                            | Symbol           | TRS1J      | Unit |
|--------------------------------------|------------------|------------|------|
| Typical Thermal Resistance *1        | R <sub>θJA</sub> | 70         | °C/W |
|                                      | R <sub>θJC</sub> | 25         |      |
|                                      | R <sub>θJL</sub> | 30         |      |
| Operating Junction Temperature Range | T <sub>J</sub>   | -55 ~ +150 | °C   |
| Storage Temperature Range            | T <sub>STG</sub> | -55 ~ +150 | °C   |

Note \*1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

## Fast Recovery Rectifier

**TRS1J**

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

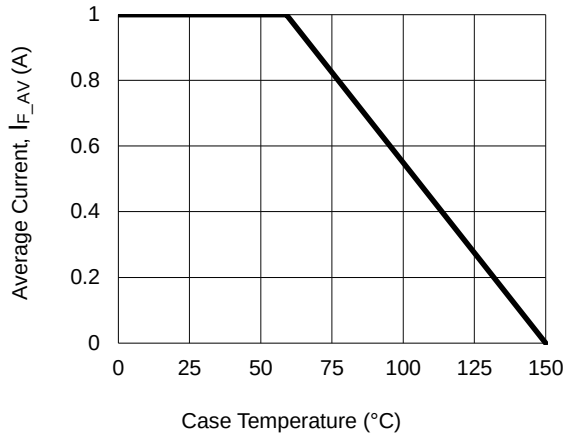
| Parameter                             | Symbol   | Test Condition                                               |                           | Typ. | Max. | Unit          |
|---------------------------------------|----------|--------------------------------------------------------------|---------------------------|------|------|---------------|
| Maximum Instantaneous Forward Voltage | $V_F$    | $I_F=1.0\text{A}$                                            |                           | -    | 1.3  | V             |
| Maximum Reverse Current               | $I_R$    | Rated $V_R$                                                  | @ $T_A=25^\circ\text{C}$  | -    | 5    | $\mu\text{A}$ |
|                                       |          |                                                              | @ $T_A=125^\circ\text{C}$ | -    | 50   |               |
| Maximum Reverse Recovery Time         | $t_{rr}$ | $I_F=0.5\text{A}, I_{RM}=1\text{A}, I_{R(REC)}=0.25\text{A}$ |                           | -    | 250  | ns            |

# Fast Recovery Rectifier

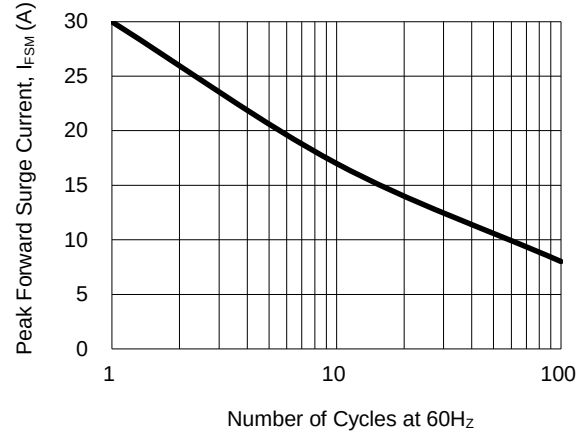
TRS1J

## Ratings and Characteristics Curves (@T<sub>A</sub> = 25°C unless otherwise noted)

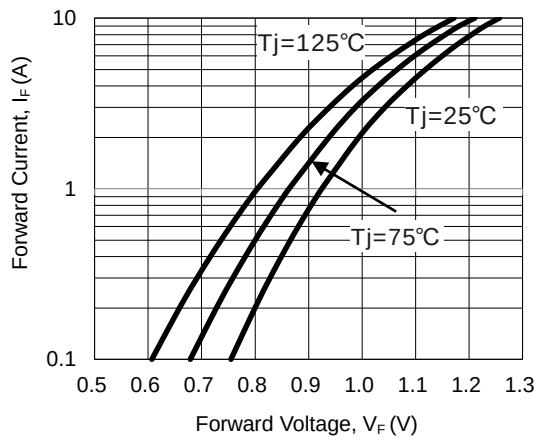
**Fig. 1 Forward Current Derating Curve**



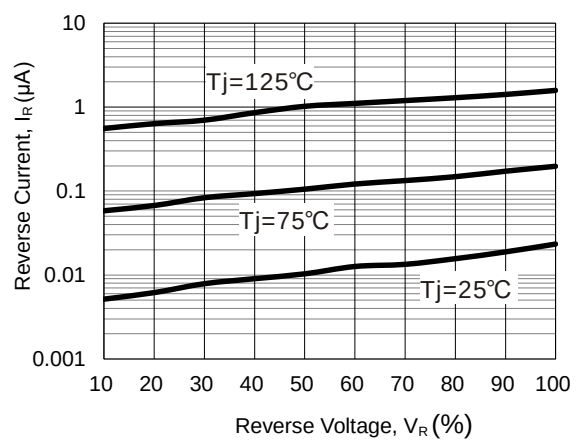
**Fig. 2 Surge Current Derating Curve**



**Fig. 3 Typical Forward Voltage Characteristics**



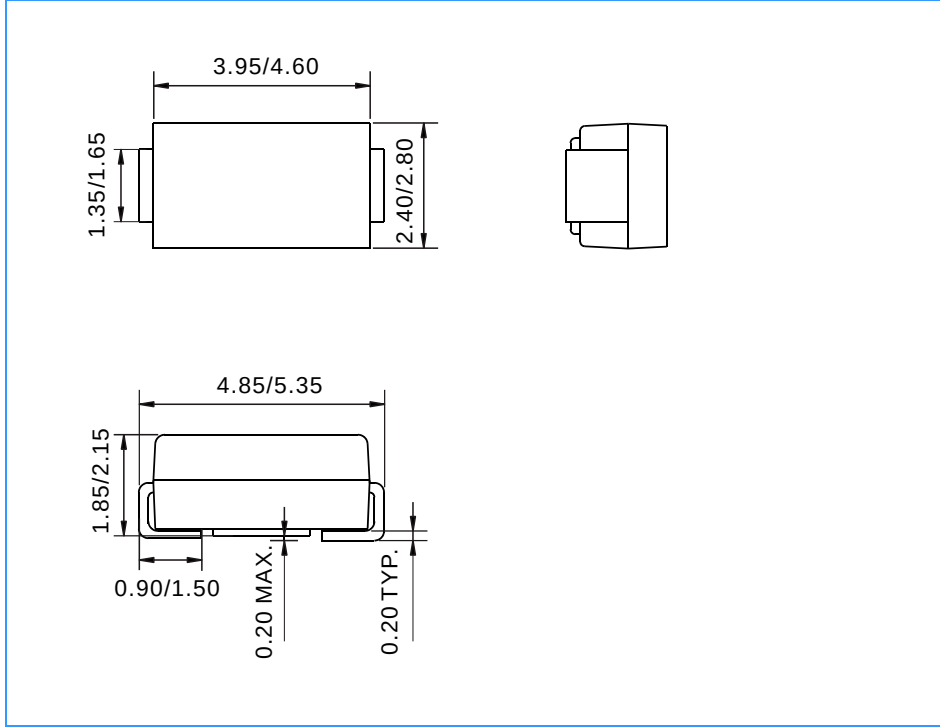
**Fig. 4 Typical Reverse Characteristics**



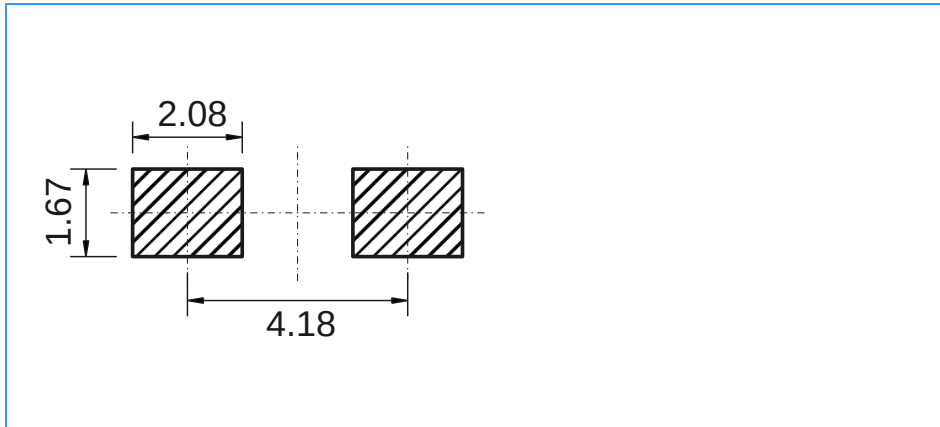
# Fast Recovery Rectifier

TRS1J

## Package Outline Dimensions (Unit: mm)



## Mounting Pad Layout (Unit: mm)



## Ordering Information

| Part Number | Marking | Package | Shipping Quantity  |
|-------------|---------|---------|--------------------|
| TRS1J       | RS1J    | SMA     | 5000 / Tape & Reel |