

## Super-Fast Rectifiers

## SOF1E1--SOF1E4

### Features

- For surface mounted applications
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- RoHS Compliant



### Mechanical Data

- Case: SOD-123F 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)

| Characteristic   | Symbol             | SOF1E1 | SOF1E2 | SOF1E3 | SOF1E4 | Units |
|--|--------------------|--------|--------|--------|--------|-------|
| Peak repetitive reverse voltage                            | V <sub>RRM</sub>   | 50     | 100    | 150    | 200    | V     |
| RMS reverse voltage  | V <sub>RMS</sub>   | 35     | 70     | 105    | 140    | V     |
| DC blocking voltage  | V <sub>DC</sub>    | 50     | 100    | 150    | 200    | 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           | SOF1E1          | SOF1E2 | SOF1E3 | SOF1E4 | Units |
|--|------------------|-----------------|--------|--------|--------|-------|
| Typical thermal resistance<br>(Note 1) | R <sub>θJA</sub> | 85              |        |        |        | °C/W  |
|  | R <sub>θJC</sub> | 23              |        |        |        |       |
|  | R <sub>θJL</sub> | 15              |        |        |        |       |
| 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 PCB with 10 mm x 20 mm x 0.1mm copper pad areas

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

| Parameter                             | Symbol         | Test conditions   |                        | Typ. | Max. | Units |
|---------------------------------------|----------------|---|------------------------|------|------|-------|
| Maximum instantaneous forward voltage | V <sub>F</sub> | I <sub>F</sub> =1.0A  | @T <sub>A</sub> =25°C  | --   | 0.95 | V     |
| Maximum Reverse current               | I <sub>R</sub> | Rated V <sub>R</sub>  | @T <sub>A</sub> =25°C  | --   | 5    | μA    |
|                                       |                |   | @T <sub>A</sub> =125°C | --   | 200  |       |
| Maximum Reverse Recovery Time         | trr            | I <sub>F</sub> =0.5A, I <sub>RM</sub> =1A, I <sub>R(REC)</sub> =0.25A |                        | --   | 35   | ns    |

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## SOF1E1--SOF1E4

### Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1-Forward Current Derating Curve

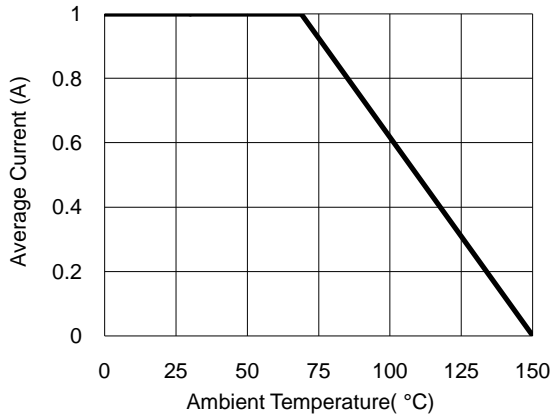


Fig.2- Surge Current Derating Curve

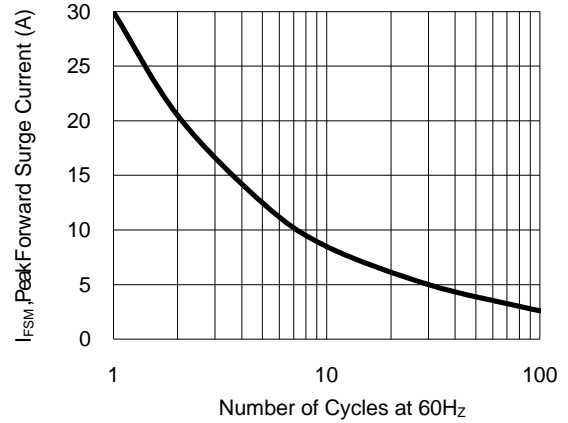


Fig.3- Typical Forward Voltage Characteristic

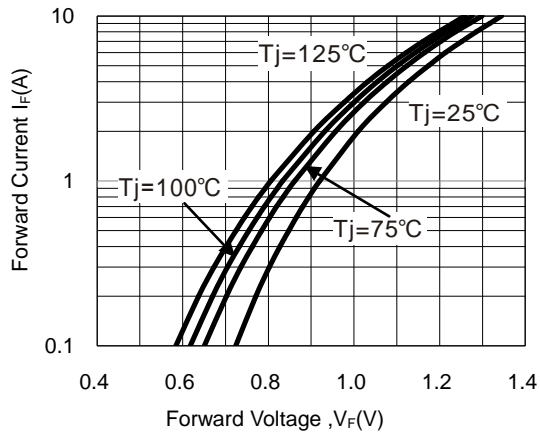
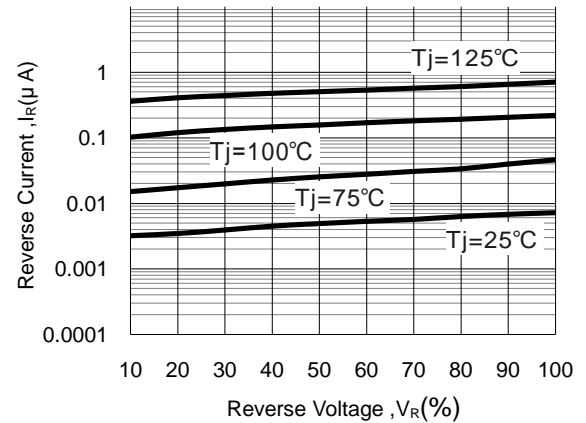


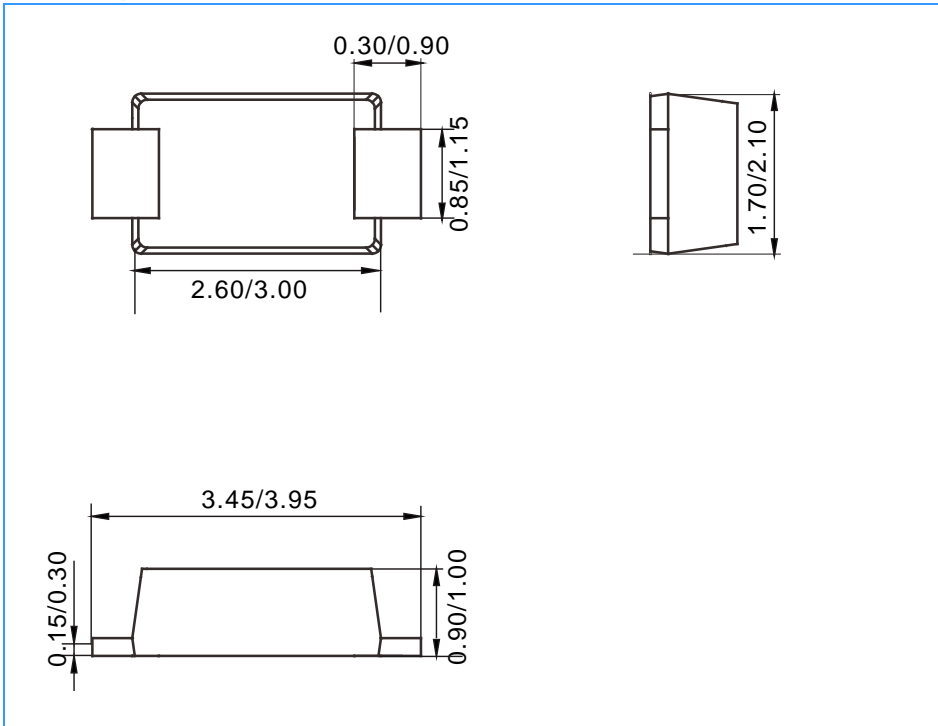
Fig.4- Typical Reverse Characteristic



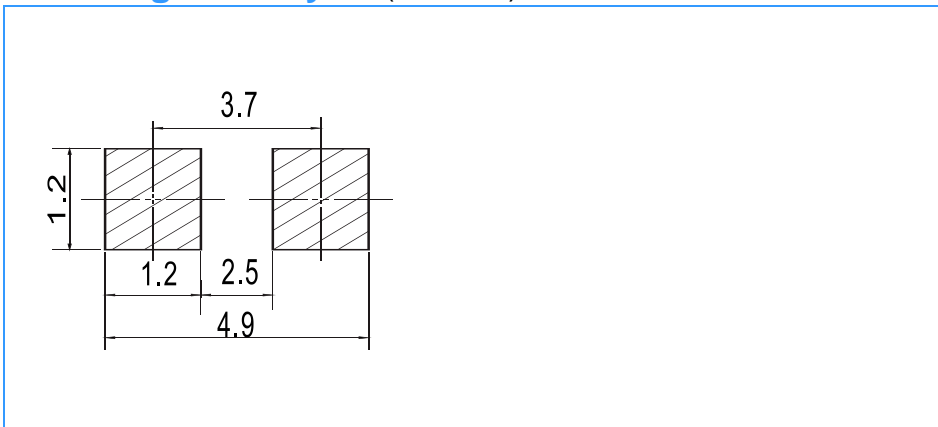
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## SOF1E1--SOF1E4

### Package Outline Dimensions(unit:mm)



### Mounting Pad Layout(unit:mm)



### Ordering Information

| Part No. | Marking | Package  | Shipping        |
|----------|---------|----------|-----------------|
| SOF1E1   | E1      | SOD-123F | 10000/Tape&Reel |
| SOF1E2   | E2      | SOD-123F | 10000/Tape&Reel |
| SOF1E3   | E3      | SOD-123F | 10000/Tape&Reel |
| SOF1E4   | E4      | SOD-123F | 10000/Tape&Reel |