

## Super-Fast Recovery Rectifier

## SOF1E5 - SOF1E6

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

| Parameter                                                  | Symbol      | SOF1E5 | SOF1E6 | Unit |
|------------------------------------------------------------|-------------|--------|--------|------|
| Peak Repetitive Reverse Voltage                            | $V_{RRM}$   | 300    | 400    | V    |
| RMS Reverse Voltage                                        | $V_{RMS}$   | 210    | 280    | V    |
| DC Blocking Voltage                                        | $V_{DC}$    | 300    | 400    | V    |
| Maximum Average Forward Output Current                     | $I_{F\_AV}$ | 1.0    |        | A    |
| Peak Forward Surge Current,<br>8.3ms Single Half Sine wave | $I_{FSM}$   | 30     |        | A    |

### Thermal Characteristics

| Parameter                            | Symbol           | SOF1E5     | SOF1E6 | Unit |
|--------------------------------------|------------------|------------|--------|------|
| Typical Thermal Resistance *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 p.c.b. with 10 mm x 20 mm x 0.1mm copper pad area

## Super-Fast Recovery Rectifier

## SOF1E5 - SOF1E6

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

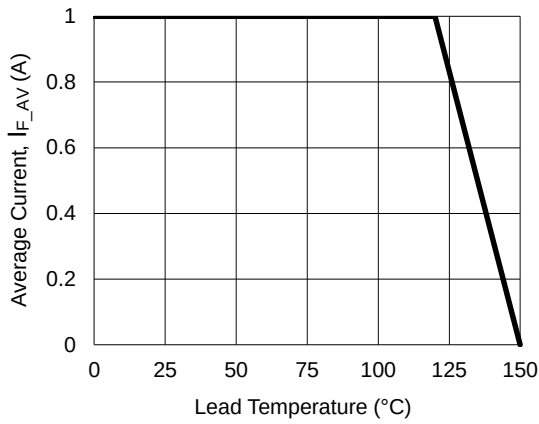
| Parameter                             | Symbol   | Test Condition                                                              |                             | Typ. | Max. | Unit          |
|---------------------------------------|----------|-----------------------------------------------------------------------------|-----------------------------|------|------|---------------|
| Maximum Instantaneous Forward Voltage | $V_F$    | $I_F = 1.0\text{A}$                                                         |                             | -    | 1.25 | V             |
| Maximum Reverse Current               | $I_R$    | Rated<br>$V_R$                                                              | @ $T_A = 25^\circ\text{C}$  | -    | 5.0  | $\mu\text{A}$ |
|                                       |          |                                                                             | @ $T_A = 125^\circ\text{C}$ | -    | 200  |               |
| Maximum Reverse Recovery Time         | $t_{rr}$ | $I_F = 0.5\text{A}$ , $I_{RM} = 1\text{A}$ ,<br>$I_{R(REC)} = 0.25\text{A}$ |                             | -    | 35   | ns            |

# Super-Fast Recovery Rectifier

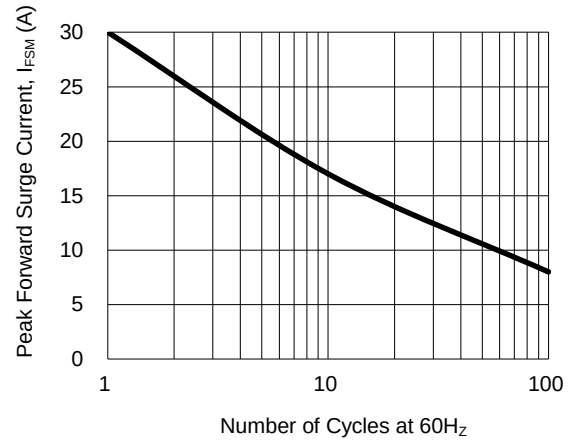
## SOF1E5 - SOF1E6

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

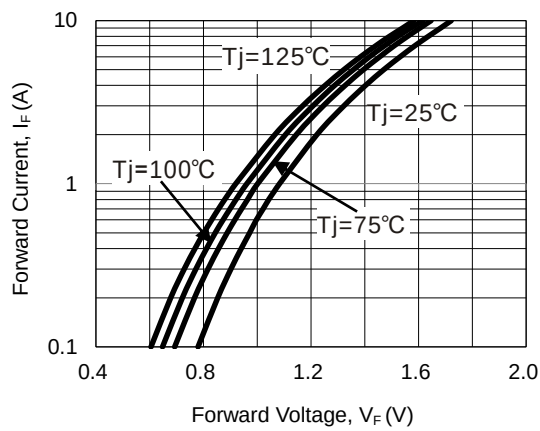
**Fig.1 Forward Current Derating Curve**



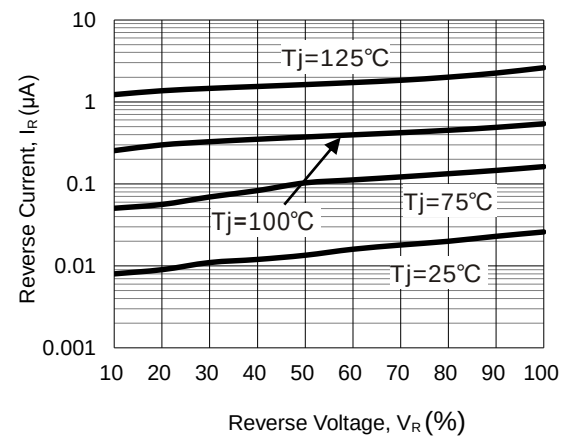
**Fig.2 Surge Current Derating Curve**



**Fig.3 Typical Forward Voltage Characteristics**



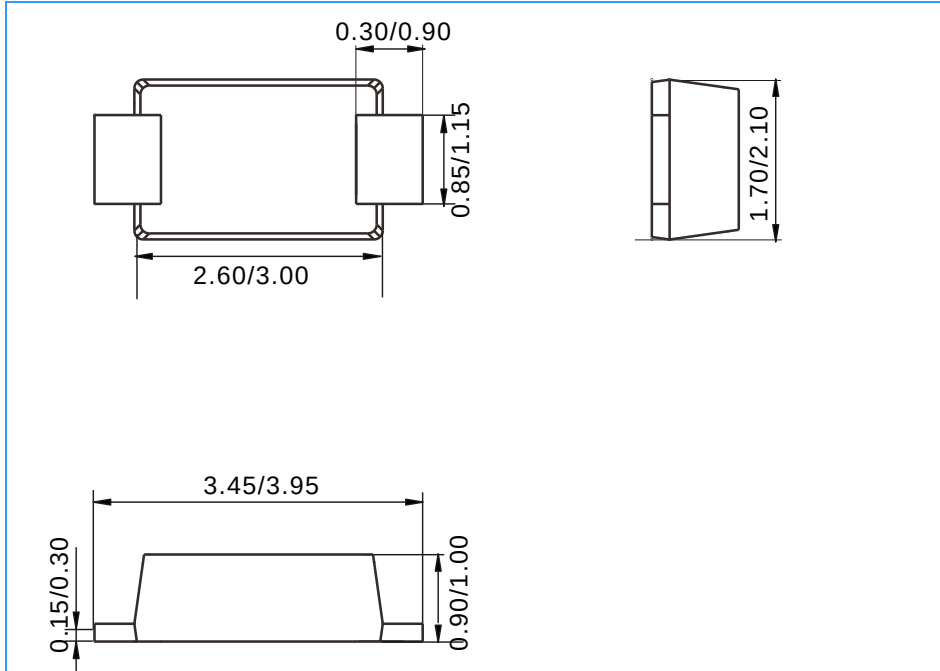
**Fig.4 Typical Reverse Characteristics**



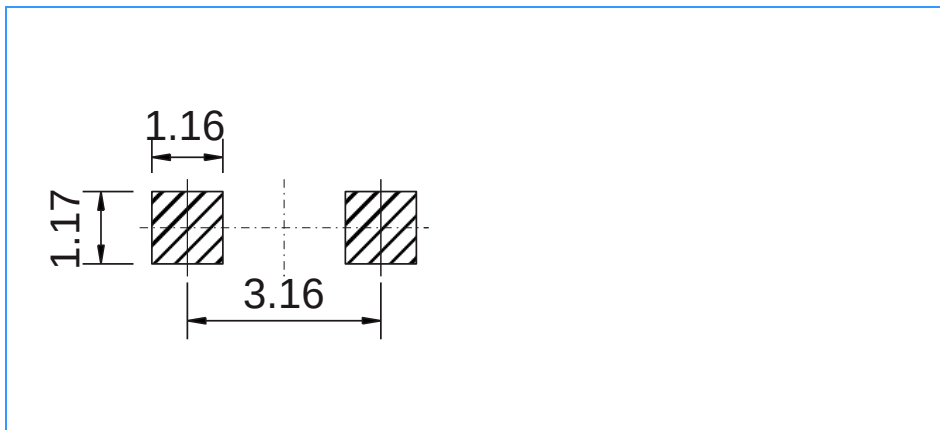
## Super-Fast Recovery Rectifier

SOF1E5 - SOF1E6

### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

| Part Number | Marking | Package  | Shipping Quantity   |
|-------------|---------|----------|---------------------|
| SOF1E5      | E5      | SOD-123F | 10000 / Tape & Reel |
| SOF1E6      | E6      | SOD-123F | 10000 / Tape & Reel |