## Surface Mount Superfast Recovery Rectifiers

| Parameter | Value | Unit |
|---|---|---|
| $V_{RRM}$ | 50~600 | V |
| $I_{F(AV)}$ | 1.0 | A |

SOD-123FL

### Features

- Easy pick and place
- For surface mounted applications
- Low profile package
- Built-in strain relief
- Super fast recovery times for high efficiency

### Applications

- For use in high-frequency rectification and free-wheeling applications in switching-mode converters and inverters for consumer electronics, computer systems, and telecommunications.

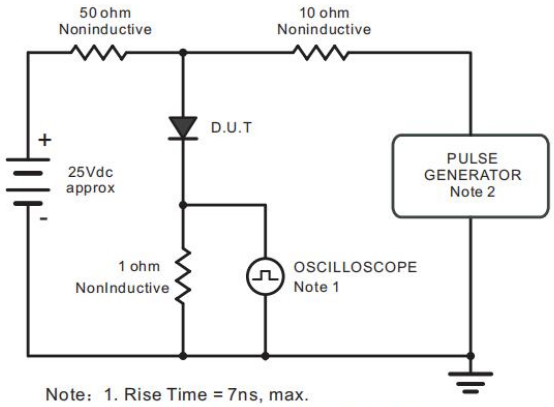
### Absolute Maximum Ratings and Characteristics (at TJ = 25℃ unless otherwise specified)

| Parameter | Symbol | E1A | E1B | E1C | E1D | E1E | E1G | E1J | Units |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum Average Forward Rectified Current at Tc = 125℃ | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | $I_{FSM}$ | 30 | | | | | | | A |
| Maximum Forward Voltage at 1A | $V_F$ | 1.0 | | | | 1.25 | | 1.70 | V |
| Maximum DC Reverse Current Ta = 25℃<br>at Rated DC Blocking Voltage Ta =125℃ | $I_R$ | 5<br>100 | | | | | | | μA |
| Typical Junction Capacitance at VR=4V, f=1MHz | $C_j$ | 15 | | | | | | | pF |
| Maximum Reverse Recovery Time（1） | $t_{rr}$ | 35 | | | | | | | ns |
| Typical Thermal Resistance（2） | $R_{\theta JA}$ | 85 | | | | | | | ℃/W |
| Operating and Storage Temperature Range | $T_j$ , $T_{stg}$ | -55 ~ +150 | | | | | | | ℃ |

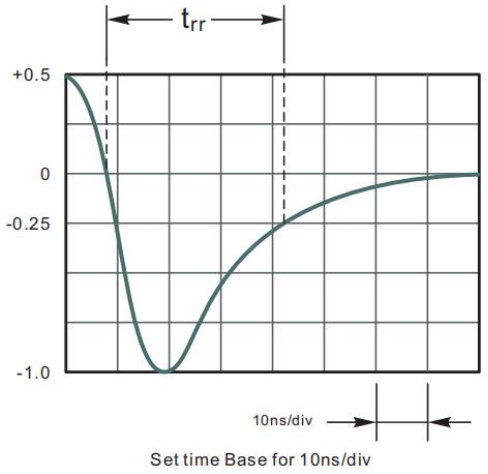
Notes:
1. Measured with IF = 0.5A , IR = 1A , Irr = 0.25A.
2. P.C. B . mounted with 0.2 X 0.2" (5 X 5 mm) copper pad areas.

## Typical characteristics

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram




Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm,22pF.
2. Ries Time =10ns, max.
Source Impedance = 50 ohms.




Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

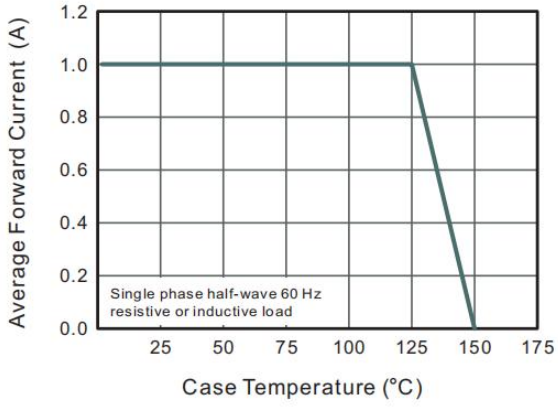



Fig.3 Typical Reverse Characteristics

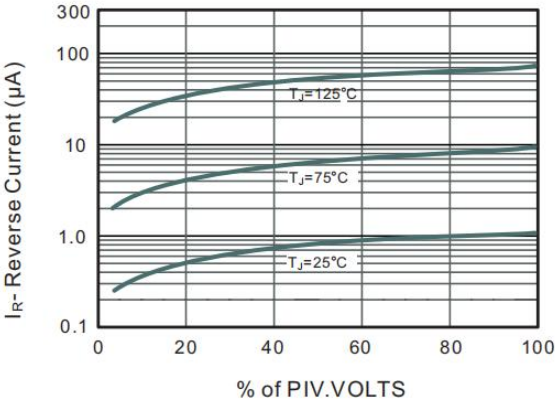



Fig.4 Typical Forward Characteristics

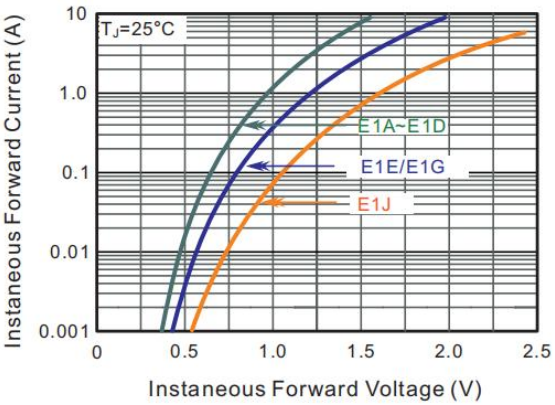



Fig.5 Typical Junction Capacitance

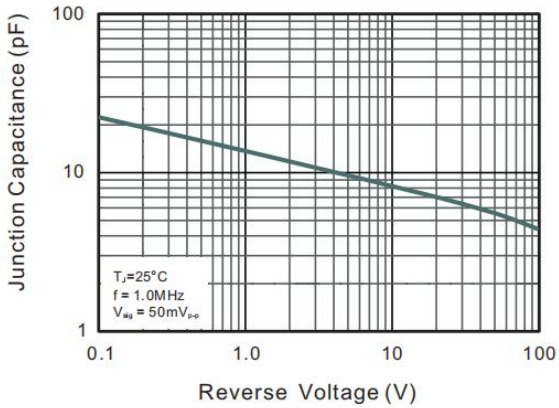
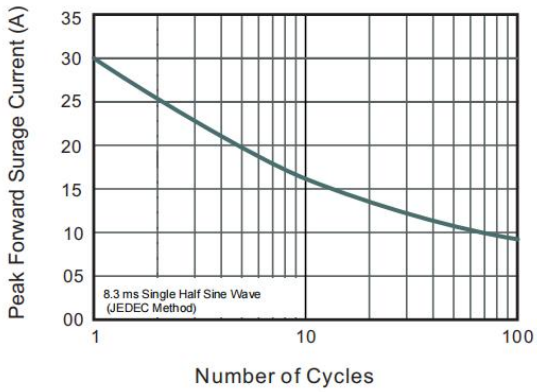


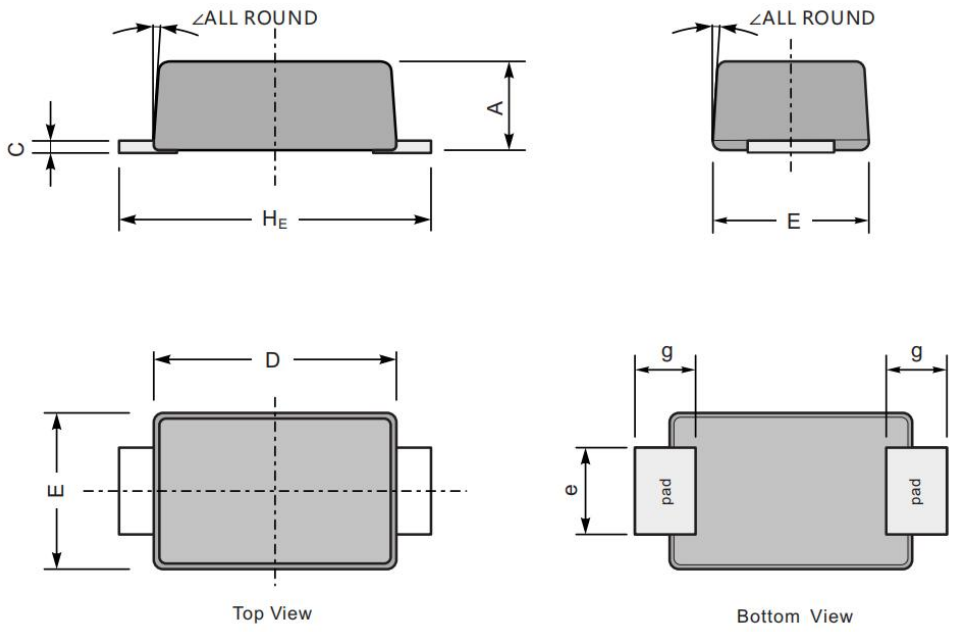
Fig.6 Maximum Non-Repetitive Peak Forward Surage Current




## Package Outlines

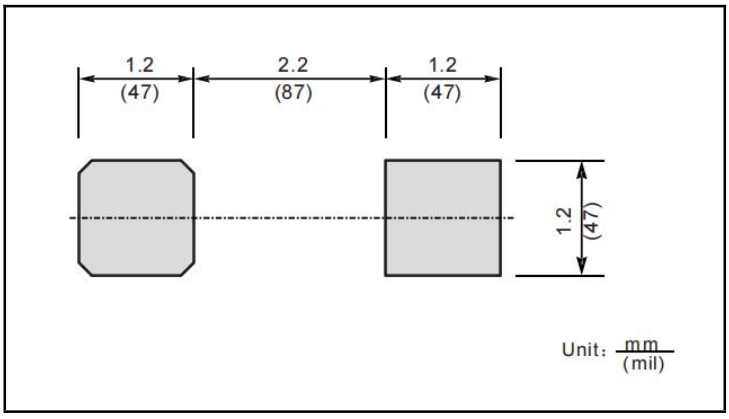
Plastic surface mounted package; 2 leads

**SOD-123FL**




| UNIT | | A | C | D | E | e | g | $H_E$ | ∠ |
|---|---|---|---|---|---|---|---|---|---|
| mm | max | 1.15 | 0.20 | 2.9 | 1.9 | 1.2 | 0.9 | 3.8 | 5° |
| | min | 0.95 | 0.12 | 2.6 | 1.7 | 0.9 | 0.7 | 3.5 | |
| mil | max | 45 | 7.9 | 114 | 75 | 47 | 35 | 150 | |
| | min | 37 | 4.7 | 102 | 67 | 35 | 28 | 138 | |

### The recommended mounting pad size




### Marking

| Type number | Marking code |
|---|---|
| E1A | E1A |
| E1B | E1B |
| E1C | E1C |
| E1D | E1D |
| E1E | E1E |
| E1G | E1G |
| E1J | E1J |

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