



## Features

- For surface mounted applications in order to optimize board space.
- Low profile package.
- Glass passivated junction.
- Low inductance.
- Plastic package has Underwriters Laboratory Flammability.



SOD-123FL  
(SMF)

## Mechanical Data

- Case': JEDEC SOD-123FL/SMF molded plastic body
- Terminals: Solderable per MIL-STD-750, Method 2026A
- Polarity: Polarity symbol marking on body
- Mounting Position: Any
- Weight: 0.00±7ounce,0.02grams
- Marking: Date Code and Marking Code See Page 2

## Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232,RS485,etc.)

## Maximum Ratings (Ta=25°C unless otherwise noted)

|                                                                                                                   |                                   |             |      |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2, Fig.1)                                          | P <sub>PPM</sub>                  | 200         | W    |
| Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)                                                       | I <sub>PPM</sub>                  | 3.8         | A    |
| Steady state power dissipation at T <sub>A</sub> =50°C (Fig.5)                                                    | P <sub>M(AV)</sub>                | 1.0         | W    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6) | I <sub>FSM</sub>                  | 30          | A    |
| Operating junction and Storage Temperature Range.                                                                 | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |
| Typical thermal resistance junction to lead                                                                       | R <sub>θJL</sub>                  | 38          | °C/W |
| Typical thermal resistance junction to ambient                                                                    | R <sub>θJA</sub>                  | 180         | °C/W |

Notes:1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2.  
2. Mounted on 5.0mm×5.0mm (0.03mm thick) copper pads to each terminal.  
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

## Electrical Characteristics (Ta=25°C)

| Part Number    |               | Device Marking Code |    | Reverse Stand- Off Voltage | Breakdown Voltage @I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RWM</sub> |
|----------------|---------------|---------------------|----|----------------------------|-----------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| Unidirectional | Bidirectional | UNI                 | BI | V <sub>RWM</sub> (V)       | V <sub>BR</sub> (V)               | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (μA)               |
| SMF33A-Q1      | SMF33CA-Q1    | CM                  | PM | 33                         | 36.7-40.6                         | 1                   | 53.3                                      | 3.8                 | 1                                 |



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

Fig.1 Peak Pulse Power Rating Curve

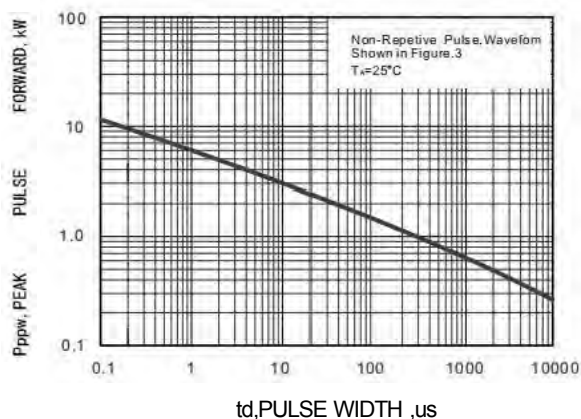


Fig.2 Forward Current Derating Curve

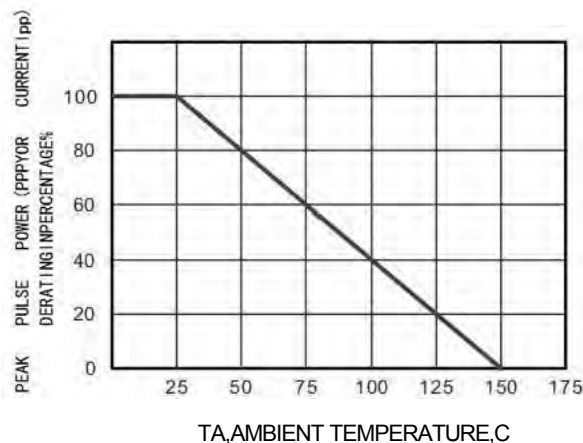


Fig.3 Pulse Waveform

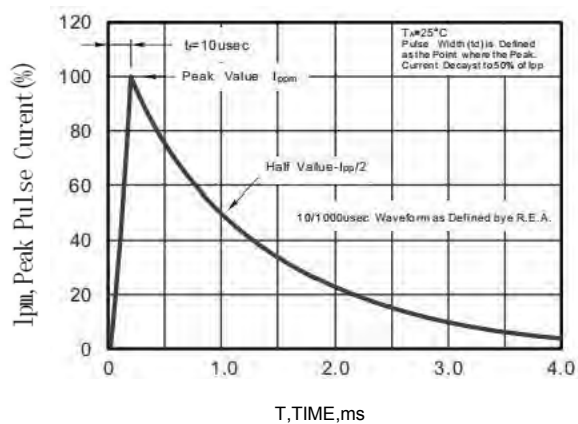
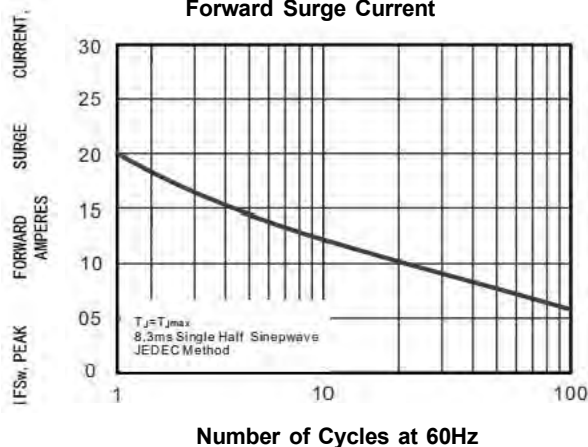
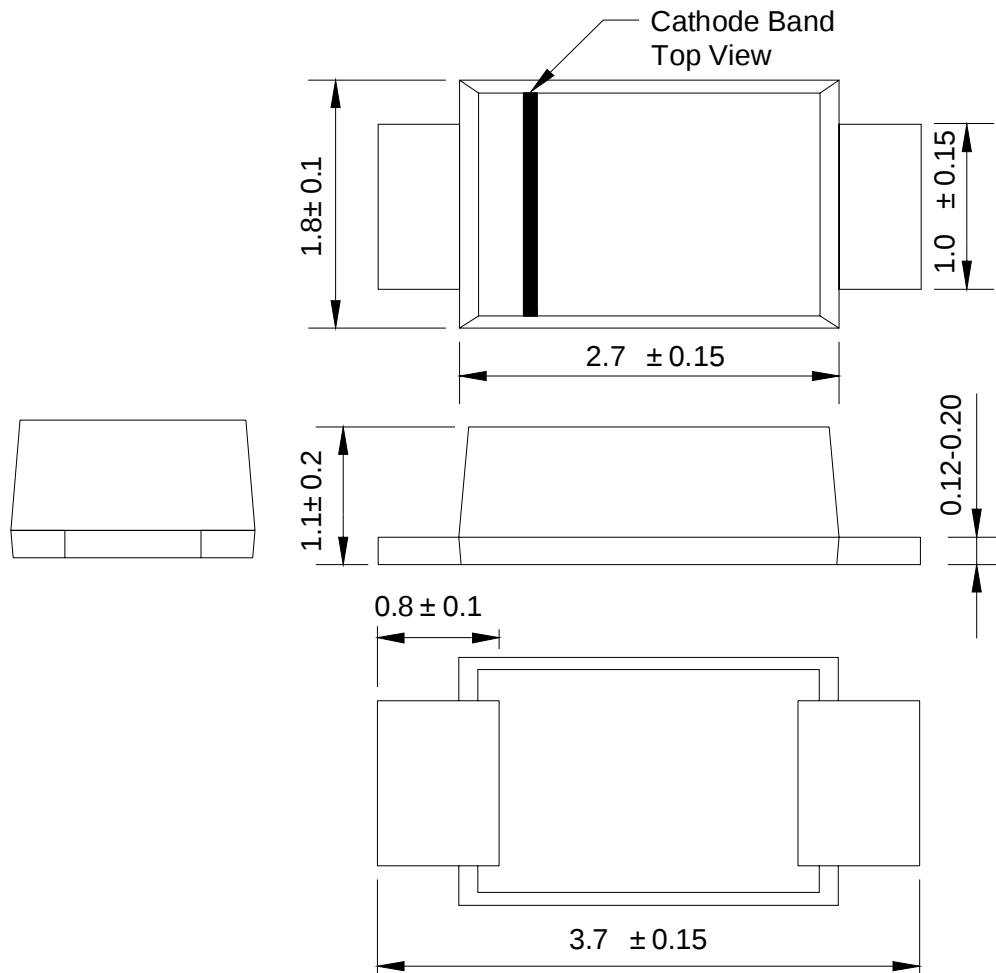


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current





**Package Outline Dimensions**  
**SOD-123FL(SMF)**





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