



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-123F

Mechanical Data

Case: JEDEC UOD-123FL molded plastic body

Terminals: Solderable per MIL-STD-750, Method 2026A

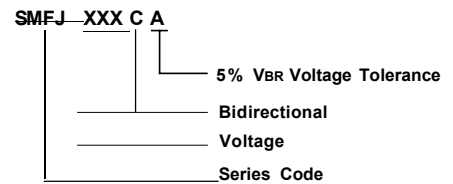
Polarity: Polarity symbol marking on body

Mounting Position: Any

Weight: 0.00 ± 7 ounce, 0.02 grams

Marking: Date Code and Marking Code See Page 2

Part Number Code



Maximum Ratings and Electrical characteristics

Ratings at 25 C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|-------------------------------------------------------------|-----------|-------------|------|
| Peak Pulse Power Dissipation on TA=25C (Note 1, 2, 5, Fig1) | PppM | 200 | W |
| Peak Forward Surge Current (Note 3) | FSM (UNI) | 30 | A |
| Peak Pulse Current on 10/1000 us waveform (Note 1) Fig 2 | IpPM | see Table 1 | A |
| Steady State Power Dissipation (Note 4) | PwAM | 1.0 | W |
| Operating Junction and Storage Range | Tj, Tsre | -55 to +150 | °C |
| Typical Thermal Resistance | RgJA | 180 | °C/W |

NOTES

1. Non-repetitive current pulse per Fig 3 and derated above Ta=25°C per Fig 2
2. Mounted on 5mm² copper pads to each terminal
3. 8.3ms single half sinewave, or equivalent square wave duty cycle=4 pulses per minutes maximum
4. lead temperature at Tt=75 °C
5. Peak pulse power waveform is tp=10/1000us
6. A transient suppressor is selected according to the working peak reverse voltage (V_{rrm}), Which Should be equal to or greater than the DC or continuous peak operating voltage level



Electrical Characteristics (T_A=25°C)

| Type | | Marking | | VRMW | Breakdown voltage | | Test Current | Reverse Leakage | Max. Clamp voltage | Peak Pulse Current |
|---------|----------|---------|------|------|-------------------|------|--------------|-----------------|--------------------|--------------------|
| | | | | | VBR | @T | | | | |
| | | | | | Min | Max | T | IR @VRW | M VC @ IPP | IPP |
| Uni | Bi | Uni | Bi | V | V | V | mA | μA | V | A |
| SMF5.0A | SMF5.0C | AE | NE | 5 | 6.4 | 7 | 10 | 400 | 9.2 | 21.7 |
| SMF6.0A | SMF6.0CA | AG | NG | 6 | 6.67 | 7.37 | 10 | 400 | 10.3 | 19.4 |
| SMF6.5A | SMF6.5CA | AK | NK | 6.5 | 7.22 | 7.98 | 10 | 250 | 11.2 | 17.9 |
| SMF7.0A | SMF7.0CA | AM | NM | 7 | 7.78 | 8.6 | 10 | 100 | 12 | 16.7 |
| SMF7.5A | SMF7.5CA | AP | NP | 7.5 | 8.33 | 9.21 | 1 | 50 | 12.9 | 15.5 |
| SMF8.0A | SMF8.0CA | AR | NR | 8 | 8.89 | 9.83 | 1 | 25 | 13.6 | 14.7 |
| SMF8.5A | SMF8.5CA | AT | NT | 8.5 | 9.44 | 10.4 | 1 | 10 | 14.4 | 13.9 |
| SMF9.0A | SMF9.0CA | AV | NV | 9 | 10 | 11.1 | 1 | 5 | 15.4 | 13 |
| SMF10A | SMF10CA | AX | NX | 10 | 11.1 | 12.3 | 1 | 2.5 | 17 | 11.8 |
| SMF11A | SMF11CA | AZ | NZ | 11 | 12.2 | 13.5 | 1 | 2.5 | 18.2 | 11 |
| SMF12A | SMF12CA | BE | OE | 12 | 13.3 | 14.7 | 1 | 2.5 | 19.9 | 10.1 |
| SMF13A | SMF13CA | BG | OG | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 9.3 |
| SMF14A | SMF14CA | BK | OK | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 8.6 |
| SMF15A | SMF15CA | BM | OM | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 8.2 |
| SMF16A | SMF16CA | BP | OP | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 7.7 |
| SMF17A | SMF17CA | BR | OR | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 7.2 |
| SMF18A | SMF18CA | BT | OT | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 6.8 |
| SMF20A | SMF20CA | BV | OV | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 6.2 |
| SMF22A | SMF22CA | BX | OX | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 5.6 |
| SMF24A | SMF24CA | BZ | OZ | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 5.1 |
| SMF26A | SMF26CA | CE | PE | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 4.8 |
| SMF28A | SMF28CA | CG | PG | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 4.4 |
| SMF30A | SMF30CA | CK | PK | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 4.1 |
| SMF33A | SMF33CA | CM | PM | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 3.8 |
| SMF36A | SMF36CA | CP | PP | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 3.4 |
| SMF40A | SMF40CA | CR | PR | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 3.1 |
| SMF43A | SMF43CA | CT | PT | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 2.9 |
| SMF45A | SMF45CA | CV | PV | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 2.8 |
| SMF48A | SMF48CA | CX | PX | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 2.6 |
| SMF51A | SMF51CA | CZ | PZ | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 2.4 |
| SMF54A | SMF54CA | DE | PA | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 2.3 |
| SMF58A | SMF58CA | DG | PC | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 2.1 |
| SMF60A | SMF60CA | DK | CDK | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 1.8 |
| SMF64A | SMF64CA | DM | CDM | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 1.7 |
| SMF70A | SMF70CA | DP | CDP | 70 | 77.8 | 86 | 1 | 1 | 113 | 1.5 |
| SMF75A | SMF75CA | DR | CDR | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 1.4 |
| SMF78A | SMF78CA | DT | CDT | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 1.4 |
| SMF85A | SMF85CA | DV | CDV | 85 | 94.4 | 104 | 1 | 1 | 137 | 1.3 |
| SMF90A | SMF90CA | DX | CDX | 90 | 100 | 111 | 1 | 1 | 146 | 1.2 |
| SMF100A | SMF100CA | DZ | CDZ | 100 | 111 | 123 | 1 | 1 | 162 | 1.1 |
| SMF110A | SMF110CA | EE | CEE | 110 | 122 | 135 | 1 | 1 | 177 | 1 |
| SMF120A | SMF120CA | EG | CEG | 120 | 133 | 147 | 1 | 1 | 193 | 0.9 |
| SMF130A | SMF130CA | EK | CEK | 130 | 144 | 159 | 1 | 1 | 209 | 0.8 |
| SMF150A | SMF150CA | EM | CEM | 150 | 167 | 185 | 1 | 1 | 243 | 0.7 |
| SMF160A | SMF160CA | EP | CEP | 160 | 178 | 197 | 1 | 1 | 259 | 0.7 |
| SMF170A | SMF170CA | ER | CER | 170 | 189 | 209 | 1 | 1 | 275 | 0.6 |
| SMF180A | SMF180CA | ET | CET | 180 | 201 | 222 | 1 | 1 | 292 | 0.5 |
| SMF190A | SMF190CA | EV | CEV | 190 | 211 | 232 | 1 | 1 | 308 | 0.5 |
| SMF200A | SMF200CA | EX | CEX | 200 | 224 | 247 | 1 | 1 | 324 | 0.5 |
| SMF220A | SMF220CA | E22 | CE22 | 220 | 246 | 272 | 1 | 1 | 356 | 0.5 |
| SMF250A | SMF250CA | E25 | CE25 | 250 | 279 | 309 | 1 | 1 | 405 | 0.5 |
| SMF300A | SMF300CA | E30 | CE30 | 300 | 335 | 371 | 1 | 1 | 486 | 0.45 |
| SMF350A | SMF350CA | E35 | CE35 | 350 | 391 | 432 | 1 | 1 | 567 | 0.4 |
| SMF400A | SMF400CA | E40 | CE40 | 400 | 447 | 494 | 1 | 1 | 648 | 0.35 |
| SMF440A | SMF440CA | E44 | CE44 | 440 | 492 | 543 | 1 | 1 | 713 | 0.3 |



Typical Characteristics

Fig.1 Peak Pulse Power Rating Curve

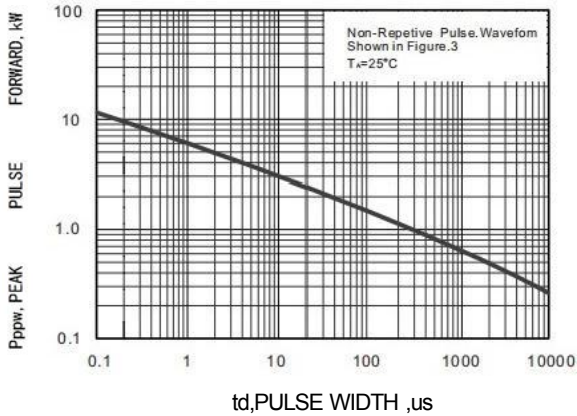


Fig.2 Forward Current Derating Curve

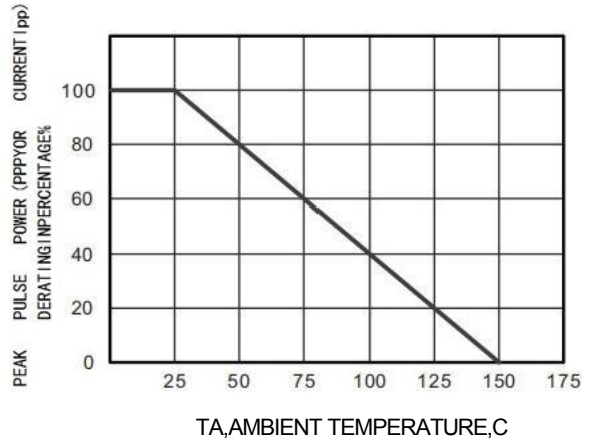


Fig.3 Pulse Waveform

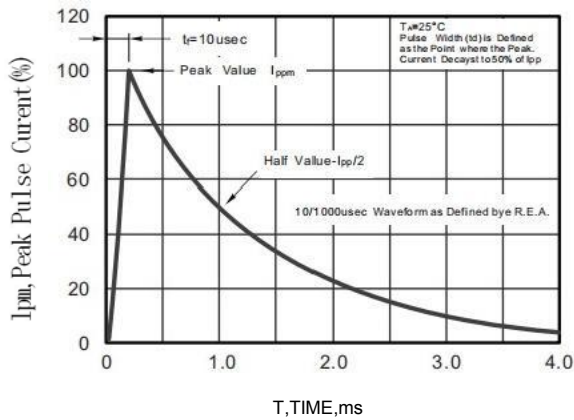
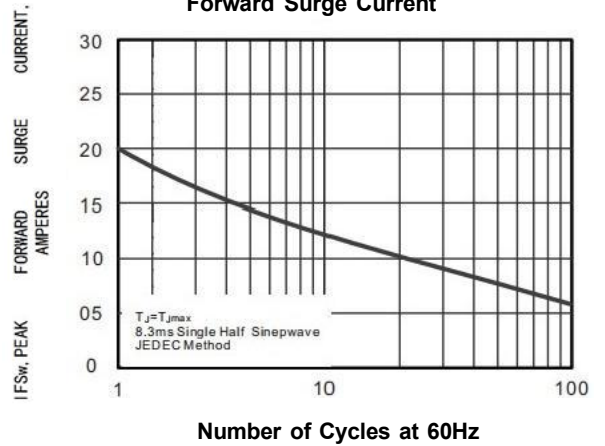
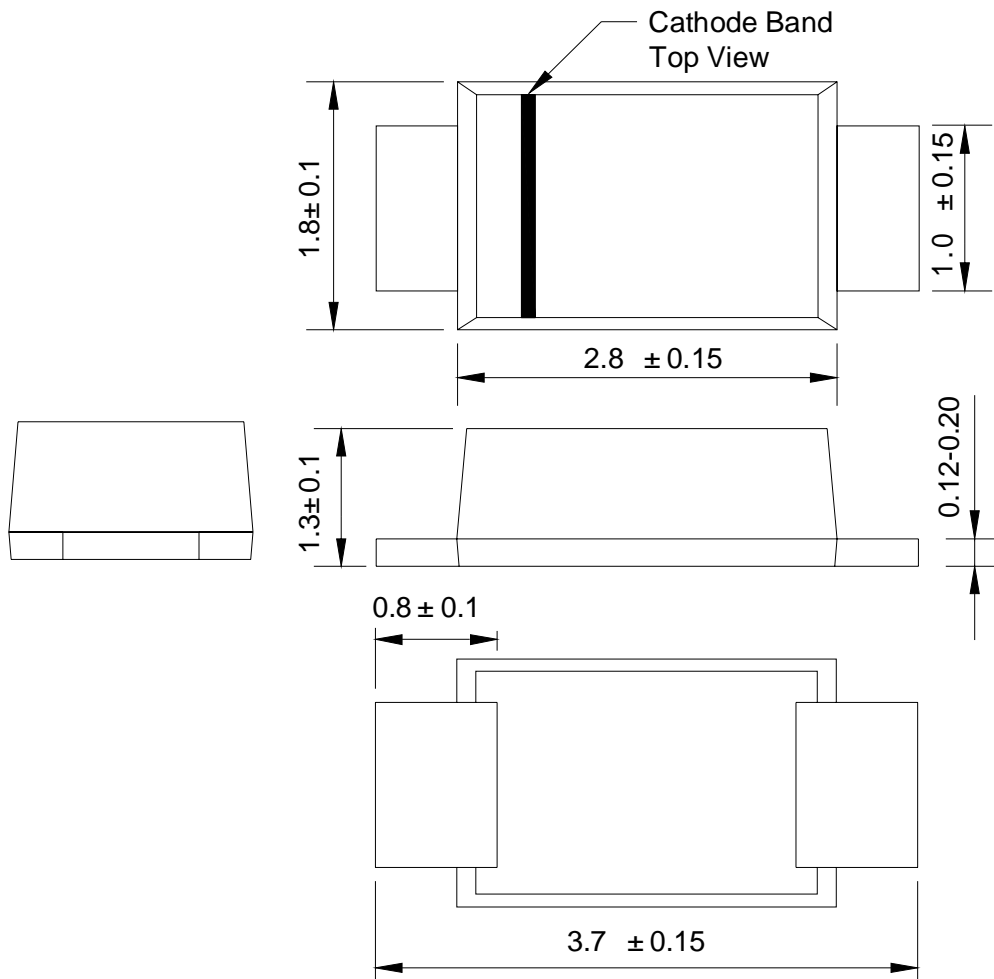


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current





SOD-123F Package Outline Dimensions





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