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# SMFJ Series

## 200W Surface Mount Transinet Voltage Suppression

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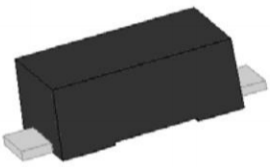
## Features

Peak power disspation 200W@10 x 1000 us Pluse
Low incremental surge resistance
Excellent clamping capability
Glass passivated junction
Fast response time
Low leakage current
Halogen free and RoHS compliant

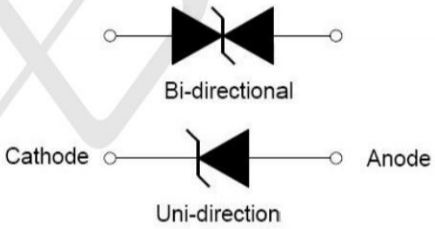
## Mechanical Data

CASE: SOD-123FL Molded Plastic
Polarity: By cathode band denites uni-directional decice, none cathode band denotes bi-directional device
Mounting Position:Any

| Package | Packing Description | Packing Quantity |
|---|---|---|
| SOD-123FL | Tape/Reel,7" reel | 3000 |
| | Tape/Reel,13" reel | 10000 |



SOD-123FL




## Maximum Ratings & Thermal Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified.)

| Parameter | Symbol | Value | Units | Remarks |
|---|---|---|---|---|
| Peak Pulse Power Dissipation | $P_{PPM}$ | 200 | W | (Note1)(Note2) |
| Steady State Power Dissipation | $P_D$ | 1 | W | (Note3) |
| Peak Forward Surge Current | $I_{FSM}$ | 20 | A | (Note4) |
| Maximum Instantaneous Forward Voltage at 10A | $V_{FM}$ | 3.5 | V | (Note5) |
| Typical Thermal Resistance Junction to Lead | $R_{\theta JL}$ | 100 | ℃/W | |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 220 | ℃/W | |
| Operating Temperature Range | $T_J$ | -55 to 150 | ℃ | |
| Storage Temperature Range | $T_{STG}$ | -55 to 150 | ℃ | |

Notes1: Non-repetitive current pulse , 10/1000us Waveform.
Notes2: Mounted on copper pad area of 3×3mm to each terminal.
Notes3: Infinite HeatSink at $T_A$=50°C
Notes4: Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute maximum.
Notes5: For UnidirectionalOnly.

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## Features

## Electrical Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified).

| Part Number (Uni) | Part Number (Bi) | Marking Code | | Reverse Stand off Voltage $V_R$ (V) | Breakdown Voltage $V_{BR}$ @ $I_T$ (V) | | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C$@ $I_{PP}$ (V) | Maximum Peak Pulse Current $I_{PP}$ (A) | Maximun Reverse Leakage $I_R$ @ $V_R$ (μA) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Uni | Bi | | Min | Max | | | | |
| SMFJ5.0A | SMFJ5.0CA | 5.0A | 5.0CA | 5 | 6.4 | 7 | 10 | 9.2 | 21.7 | 400 |
| SMFJ6.0A | SMFJ6.0CA | 6.0A | 6.0CA | 6 | 6.67 | 7.37 | 10 | 10.3 | 19.4 | 400 |
| SMFJ6.5A | SMFJ6.5CA | 6.5A | 6.5CA | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 17.9 | 250 |
| SMFJ7.0A | SMFJ7.0CA | 7.0A | 7.0CA | 7 | 7.78 | 8.6 | 10 | 12 | 16.7 | 100 |
| SMFJ7.5A | SMFJ7.5CA | 7.5A | 7.5CA | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 15.5 | 50 |
| SMFJ8.0A | SMFJ8.0CA | 8.0A | 8.0CA | 8 | 8.89 | 9.83 | 1 | 13.6 | 14.7 | 25 |
| SMFJ8.5A | SMFJ8.5CA | 8.5A | 8.5CA | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 13.9 | 10 |
| SMFJ9.0A | SMFJ9.0CA | 9.0A | 9.0CA | 9 | 10 | 11.1 | 1 | 15.4 | 13 | 5 |
| SMFJ10A | SMFJ10CA | 10A | 10CA | 10 | 11.1 | 12.3 | 1 | 17 | 11.8 | 2.5 |
| SMFJ11A | SMFJ11CA | 11A | 11CA | 11 | 12.2 | 13.5 | 1 | 18.2 | 11 | 2.5 |
| SMFJ12A | SMFJ12CA | 12A | 12CA | 12 | 13.3 | 14.7 | 1 | 19.9 | 10.1 | 2.5 |
| SMFJ13A | SMFJ13CA | 13A | 13CA | 13 | 14.4 | 15.9 | 1 | 21.5 | 9.3 | 1 |
| SMFJ14A | SMFJ14CA | 14A | 14CA | 14 | 15.6 | 17.2 | 1 | 23.2 | 8.6 | 1 |
| SMFJ15A | SMFJ15CA | 15A | 15CA | 15 | 16.7 | 18.5 | 1 | 24.4 | 8.2 | 1 |
| SMFJ16A | SMFJ16CA | 16A | 16CA | 16 | 17.8 | 19.7 | 1 | 26 | 7.7 | 1 |
| SMFJ17A | SMFJ17CA | 17A | 17CA | 17 | 18.9 | 20.9 | 1 | 27.6 | 7.2 | 1 |
| SMFJ18A | SMFJ18CA | 18A | 18CA | 18 | 20 | 22.1 | 1 | 29.2 | 6.8 | 1 |
| SMFJ20A | SMFJ20CA | 20A | 20CA | 20 | 22.2 | 24.5 | 1 | 32.4 | 6.2 | 1 |
| SMFJ22A | SMFJ22CA | 22A | 22CA | 22 | 24.4 | 26.9 | 1 | 35.5 | 5.6 | 1 |
| SMFJ24A | SMFJ24CA | 24A | 24CA | 24 | 26.7 | 29.5 | 1 | 38.9 | 5.1 | 1 |
| SMFJ26A | SMFJ26CA | 26A | 26CA | 26 | 28.9 | 31.9 | 1 | 42.1 | 4.8 | 1 |
| SMFJ28A | SMFJ28CA | 28A | 28CA | 28 | 31.1 | 34.4 | 1 | 45.4 | 4.4 | 1 |
| SMFJ30A | SMFJ30CA | 30A | 30CA | 30 | 33.3 | 36.8 | 1 | 48.4 | 4.1 | 1 |
| SMFJ33A | SMFJ33CA | 33A | 33CA | 33 | 36.7 | 40.6 | 1 | 53.3 | 3.8 | 1 |
| SMFJ36A | SMFJ36CA | 36A | 36CA | 36 | 40 | 44.2 | 1 | 58.1 | 3.4 | 1 |
| SMFJ40A | SMFJ40CA | 40A | 40CA | 40 | 44.4 | 49.1 | 1 | 64.5 | 3.1 | 1 |
| SMFJ43A | SMFJ43CA | 43A | 43CA | 43 | 47.8 | 52.8 | 1 | 69.4 | 2.9 | 1 |
| SMFJ45A | SMFJ45CA | 45A | 45CA | 45 | 50 | 55.3 | 1 | 72.7 | 2.8 | 1 |
| SMFJ48A | SMFJ48CA | 48A | 48CA | 48 | 53.3 | 58.9 | 1 | 77.4 | 2.6 | 1 |
| SMF 51A | T[PSMF51CA | 51A | 51CA | 51 | 56.7 | 62.7 | 1 | 82.4 | 2.4 | 1 |
| SMFJ54A | SMFJ54CA | 54A | 54CA | 54 | 60 | 66.3 | 1 | 87.1 | 2.3 | 1 |
| SMFJ58A | SMFJ58CA | 58A | 58CA | 58 | 64.4 | 71.2 | 1 | 93.6 | 2.1 | 1 |
| SMFJ60A | SMFJ60CA | 60A | 60CA | 60 | 66.7 | 73.7 | 1 | 96.8 | 1.8 | 1 |
| SMFJ64A | SMFJ64CA | 64A | 64CA | 64 | 71.1 | 78.6 | 1 | 103 | 1.7 | 1 |
| SMFJ70A | SMFJ70CA | 70A | 70CA | 70 | 77.8 | 86 | 1 | 113 | 1.5 | 1 |
| SMFJ75A | SMFJ75CA | 75A | 75CA | 75 | 83.3 | 92.1 | 1 | 121 | 1.4 | 1 |
| SMFJ78A | SMFJ78CA | 78A | 78CA | 78 | 86.7 | 95.8 | 1 | 126 | 1.4 | 1 |
| SMFJ85A | SMFJ85CA | 85A | 85CA | 85 | 94.4 | 104 | 1 | 137 | 1.3 | 1 |
| SMFJ90A | SMFJ90CA | 90A | 90CA | 90 | 100 | 111 | 1 | 146 | 1.2 | 1 |
| SMFJ100A | SMFJ100CA | 100 | 100C | 100 | 111 | 123 | 1 | 162 | 1.1 | 1 |
| SMFJ110A | SMFJ110CA | 110 | 110C | 110 | 122 | 135 | 1 | 177 | 1 | 1 |
| SMFJ120A | SMFJ120CA | 120 | 120C | 120 | 133 | 147 | 1 | 193 | 0.9 | 1 |
| SMFJ130A | SMFJ130CA | 130 | 130C | 130 | 144 | 159 | 1 | 209 | 0.8 | 1 |
| SMFJ150A | SMFJ150CA | 150 | 150C | 150 | 167 | 185 | 1 | 243 | 0.7 | 1 |
| SMFJ160A | SMFJ160CA | 160 | 160C | 160 | 178 | 197 | 1 | 259 | 0.7 | 1 |
| SMFJ170A | SMFJ170CA | 170 | 170C | 170 | 189 | 209 | 1 | 275 | 0.6 | 1 |

## Features

## Ratings and Characteristic Curves

(Ratings at 25℃ ambient temperature unless otherwise specified).

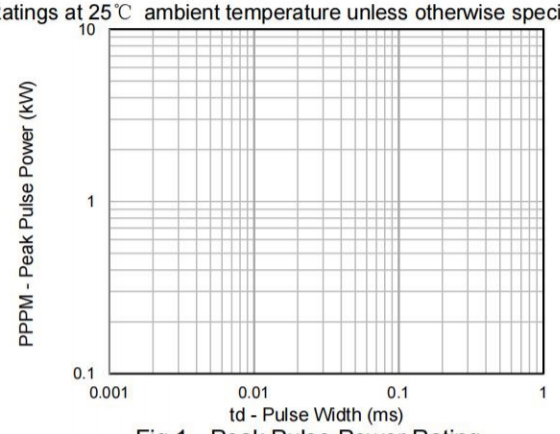



Fig.1 - Peak Pulse Power Rating

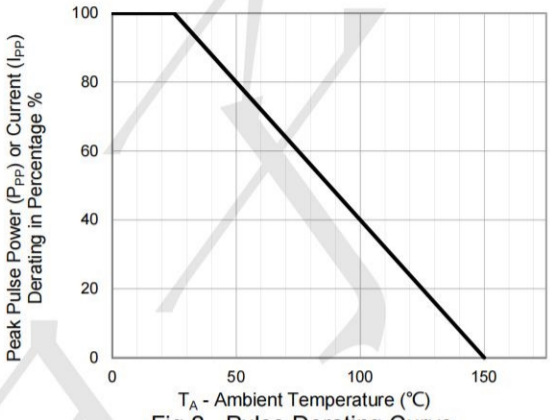



Fig.2 - Pulse Derating Curve

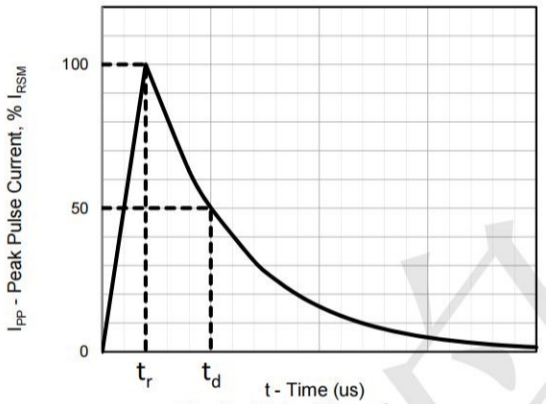



Fig.3 - Pulse Waveform

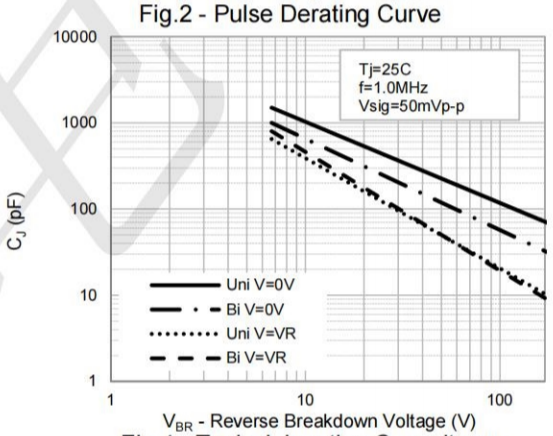



Fig.4 - Typical Junction Capacitance

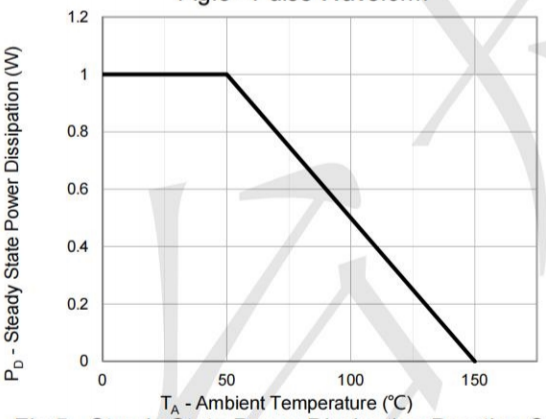



Fig.5 - Steady State Power Dissipation Derating Curve

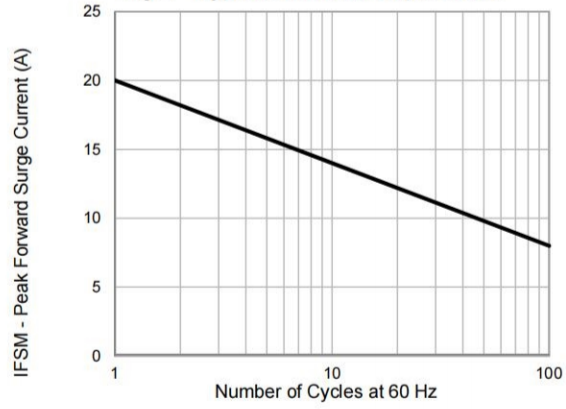
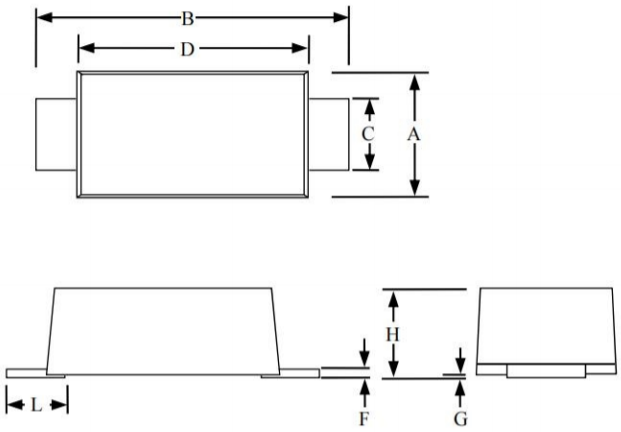



Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

## Features

## Package Outline Dimensions: SOD-123FL




| SOD-123FL | | | | | | |
|---|---|---|---|---|---|---|
| Dimension | Inches | | | Millimeters | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.059 | | 0.079 | 1.5 | | 2 |
| B | 0.134 | | 0.154 | 3.4 | | 3.9 |
| C | 0.028 | | 0.047 | 0.7 | | 1.2 |
| D | 0.098 | | 0.114 | 2.5 | | 2.9 |
| F | 0.002 | | 0.01 | 0.05 | | 0.26 |
| G | - | | 0.004 | - | | 0.1 |
| H | 0.037 | | 0.053 | 0.95 | | 1.35 |
| L | 0.014 | | 0.035 | 0.35 | | 0.9 |

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