

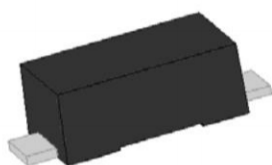
### Features

Peak power dissipation 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

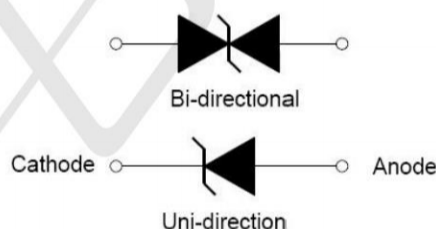
### Mechanical Data

CASE: SOD-123FL Molded Plastic  
Polarity: By cathode band denotes 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°C 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        | °C/W  |                |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 220        | °C/W  |                |
| Operating Temperature Range                    | $T_J$           | -55 to 150 | °C    |                |
| Storage Temperature Range                      | $T_{STG}$       | -55 to 150 | °C    |                |

Notes1: Non-repetitive current pulse , 10/1000us Waveform.

Notes2: Mounted on copper pad area of 3×3mm to each terminal.

Notes3: Infinite HeatSink at  $T_A=50^{\circ}\text{C}$

Notes4: Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute maximum.

Notes5: For UnidirectionalOnly.

## 200W Surface Mount Transinet Voltage Suppression

### Electrical Characteristics

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(Ratings at 25°C 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) | Maximum 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           | TJPSMF51CA       | 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°C ambient temperature unless otherwise specified).

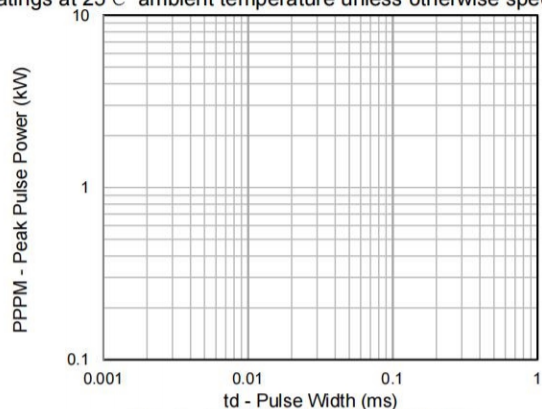


Fig.1 - Peak Pulse Power Rating

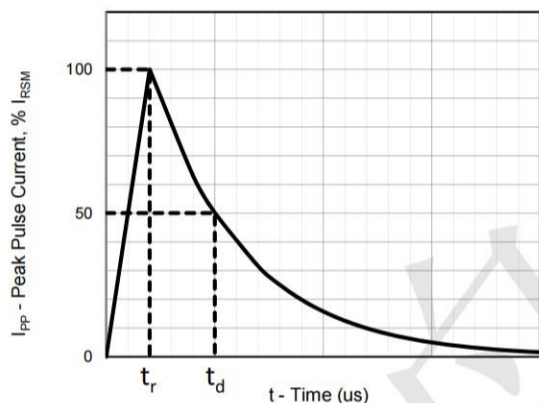


Fig.3 - Pulse Waveform

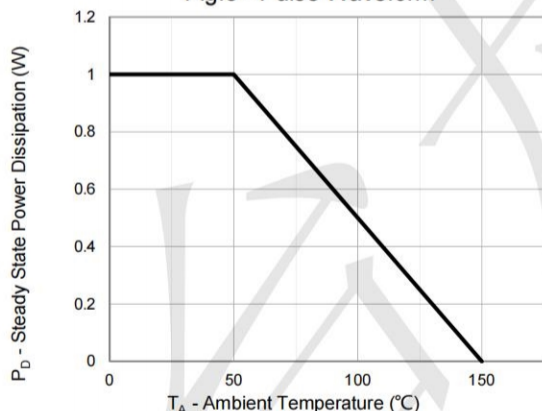


Fig.5 - Steady State Power Dissipation Derating Curve

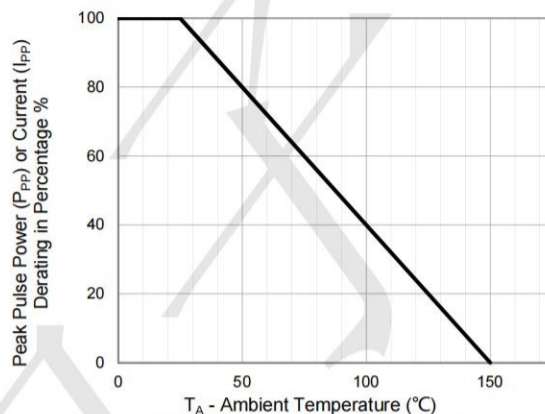


Fig.2 - Pulse Derating Curve

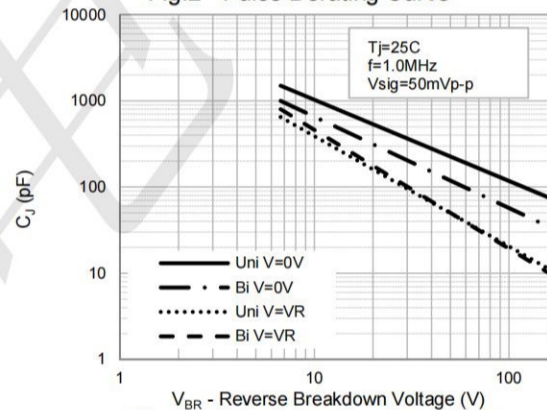


Fig.4 - Typical Junction Capacitance

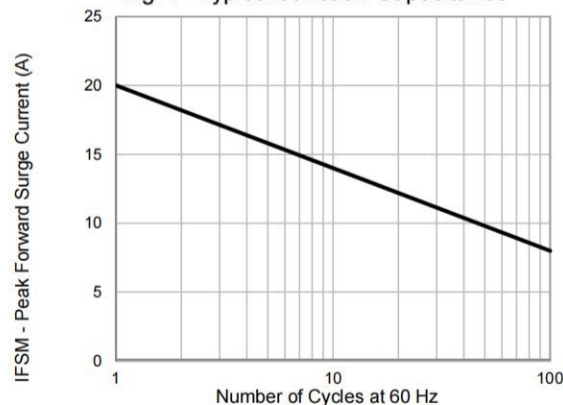
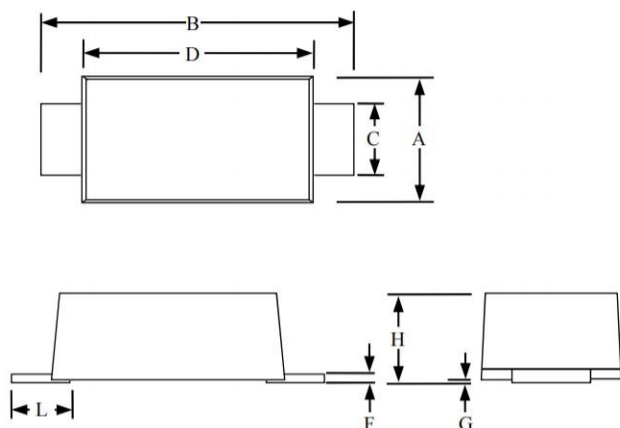


Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

**Features**

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**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  |