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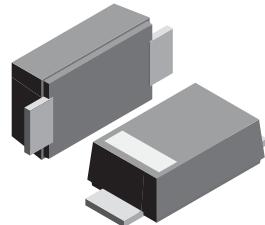
**TP4LSMF Series**

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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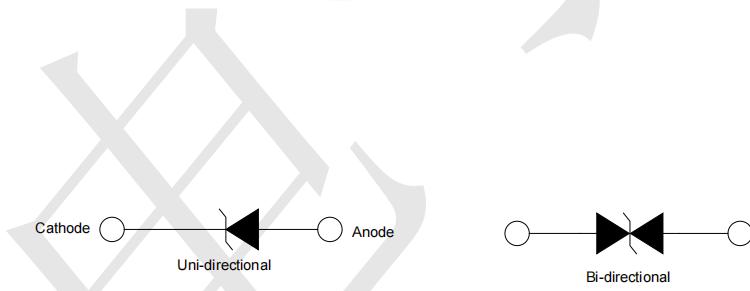
### DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.



SOD123FL

### Package and Pin Configuration



### Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

| PARAMETER  | SYMBOL                | LIMIT       | UNITS                     |
|--|-----------------------|-------------|---------------------------|
| Peak Pulse Power Dissipation( $tp = 10/1000 \mu\text{s}$ )                   | $P_{PP}^{(1,2)}$      | 400         | W                         |
| Peak Pulse Current on $tp = 10/1000 \mu\text{s}$ waveform <sup>(Fig.2)</sup> | $I_{PPM}^{(1)}$       | See table 1 | A                         |
| ESD IEC61000-4-2(Air)  |                       | $\pm 30$    |                           |
| ESD IEC61000-4-2(Contact)  | $V_{ESD}$             | $\pm 30$    | kV                        |
| Typical Thermal Resistance Junction to Ambient                               | $R_{\theta JA}^{(3)}$ | 200         | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range   | $T_J$                 | -55~150     | $^\circ\text{C}$          |
| Storage Temperature Range  | $T_{STG}$             | -65~150     | $^\circ\text{C}$          |



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ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ C$ )

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| Part Number | $V_{RWM}$    | $V_{BR}$ |      |       | $I_R @ V_{RWM}$ | $V_C @ I_{PP}$ |      |      |
|-------------|--------------|----------|------|-------|-----------------|----------------|------|------|
|             |              | Min.     | Max. | $I_T$ |                 | $V$            | A    |      |
| UNI BI      | V            | V        | V    | mA    | uA              | V              | A    |      |
| TP4LSMF6.0A | TP4LSMF6.0CA | 6        | 6.67 | 7.37  | 10              | 50             | 10.3 | 38.8 |
| TP4LSMF6.5A | TP4LSMF6.5CA | 6.5      | 7.22 | 7.98  | 10              | 40             | 11.2 | 35.7 |
| TP4LSMF7.0A | TP4LSMF7.0CA | 7        | 7.78 | 8.6   | 10              | 40             | 12   | 33.3 |
| TP4LSMF7.5A | TP4LSMF7.5CA | 7.5      | 8.33 | 9.21  | 1               | 30             | 12.9 | 31   |
| TP4LSMF8.0A | TP4LSMF8.0CA | 8        | 8.89 | 9.83  | 1               | 5              | 13.6 | 29.4 |
| TP4LSMF8.5A | TP4LSMF8.5CA | 8.5      | 9.44 | 10.4  | 1               | 5              | 14.4 | 27.8 |
| TP4LSMF9.0A | TP4LSMF9.0CA | 9        | 10   | 11.1  | 1               | 0.5            | 15.4 | 26   |
| TP4LSMF10A  | TP4LSMF10CA  | 10       | 11.1 | 12.3  | 1               | 0.5            | 17   | 23.5 |
| TP4LSMF11A  | TP4LSMF11CA  | 11       | 12.2 | 13.5  | 1               | 0.5            | 18.2 | 22   |
| TP4LSMF12A  | TP4LSMF12CA  | 12       | 13.3 | 14.7  | 1               | 0.5            | 19.9 | 20.1 |
| TP4LSMF13A  | TP4LSMF13CA  | 13       | 14.4 | 15.9  | 1               | 0.1            | 21.5 | 18.6 |
| TP4LSMF14A  | TP4LSMF14CA  | 14       | 15.6 | 17.2  | 1               | 0.1            | 23.2 | 17.2 |
| TP4LSMF15A  | TP4LSMF15CA  | 15       | 16.7 | 18.5  | 1               | 0.1            | 24.4 | 16.4 |
| TP4LSMF16A  | TP4LSMF16CA  | 16       | 17.8 | 19.7  | 1               | 0.1            | 26   | 15.4 |
| TP4LSFF17A  | TP4LSFF17CA  | 17       | 18.9 | 20.9  | 1               | 0.1            | 27.6 | 14.5 |
| TP4LSMF18A  | TP4LSMF18CA  | 18       | 20   | 22.1  | 1               | 0.1            | 29.2 | 13.7 |
| TP4LSMF20A  | TP4LSMF20CA  | 20       | 22.2 | 24.5  | 1               | 0.1            | 32.4 | 12.3 |
| TP4LSMF22A  | TP4LSMF22CA  | 22       | 24.4 | 26.9  | 1               | 0.1            | 35.5 | 11.3 |
| TP4LSMF24A  | TP4LSMF24CA  | 24       | 26.7 | 29.5  | 1               | 0.1            | 38.9 | 10.3 |
| TP4LSMF26A  | TP4LSMF26CA  | 26       | 28.9 | 31.9  | 1               | 0.1            | 42.1 | 9.5  |
| TP4LSMF28A  | TP4LSMF28CA  | 28       | 31.1 | 34.4  | 1               | 0.1            | 45.4 | 8.8  |
| TP4LSMF30A  | TP4LSMF30CA  | 30       | 33.3 | 36.8  | 1               | 0.1            | 48.4 | 8.3  |
| TP4LSMF33A  | TP4LSMF33CA  | 33       | 36.7 | 40.6  | 1               | 0.1            | 53.3 | 7.5  |
| TP4LSMF36A  | TP4LSMF36CA  | 36       | 40   | 44.2  | 1               | 0.1            | 58.1 | 6.9  |
| TP4LSMF40A  | TP4LSMF40CA  | 40       | 44.4 | 49.1  | 1               | 0.1            | 64.5 | 6.2  |
| TP4LSMF43A  | TP4LSMF43CA  | 43       | 47.8 | 52.8  | 1               | 0.1            | 69.4 | 5.8  |
| TP4LSMF45A  | TP4LSMF45CA  | 45       | 50   | 55.3  | 1               | 0.1            | 72.2 | 5.5  |
| TP4LSMF48A  | TP4LSMF48CA  | 48       | 53.3 | 58.9  | 1               | 0.1            | 77.4 | 5.2  |
| TP4LSMF51A  | TP4LSMF51CA  | 51       | 56.7 | 62.7  | 1               | 0.1            | 82.4 | 4.9  |
| TP4LSMF54A  | TP4LSMF54CA  | 54       | 60   | 66.3  | 1               | 0.1            | 87.1 | 4.6  |
| TP4LSMF58A  | TP4LSMF58CA  | 58       | 64.4 | 71.2  | 1               | 0.1            | 93.6 | 4.3  |
| TP4LSMF60A  | TP4LSMF60CA  | 60       | 66.7 | 73.7  | 1               | 0.1            | 96.8 | 4.1  |
| TP4LSMF64A  | TP4LSMF64CA  | 64       | 71.1 | 78.6  | 1               | 0.1            | 103  | 3.9  |
| TP4LSMF70A  | TP4LSMF70CA  | 70       | 77.8 | 86.0  | 1               | 0.1            | 96.8 | 4.1  |
| TP4LSMF75A  | TP4LSMF75CA  | 75       | 83.3 | 78.6  | 1               | 0.1            | 103  | 3.9  |



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### RATINGS AND V-I CHARACTERISTICS CURVES ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating Curve

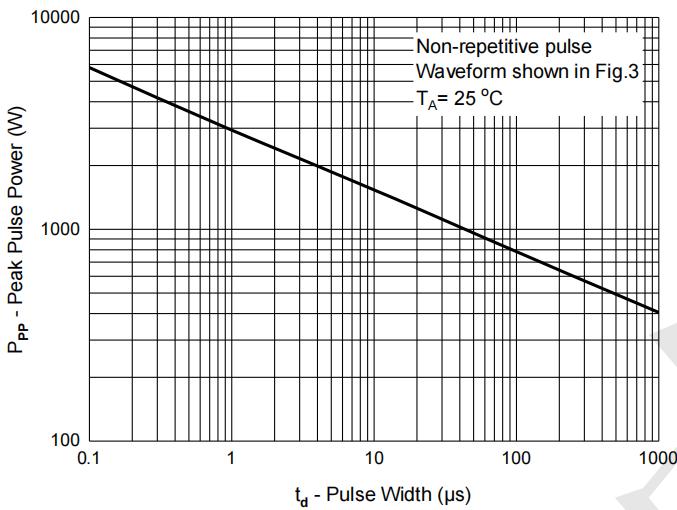


Fig. 2 - Typical Junction Capacitance

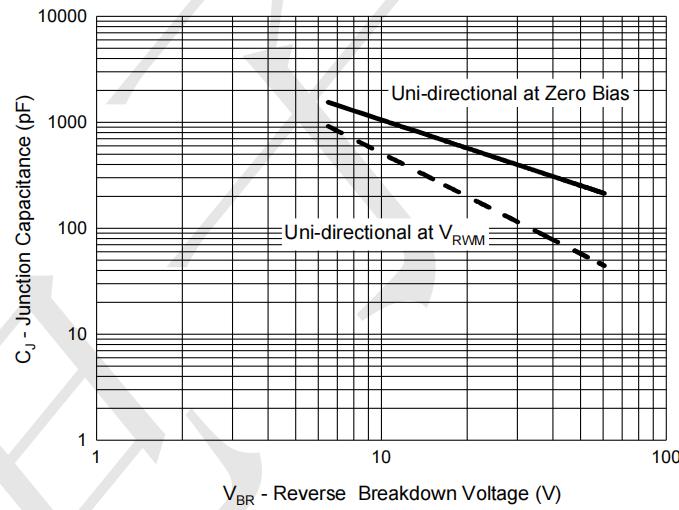


Fig. 3 - Pulse Waveform

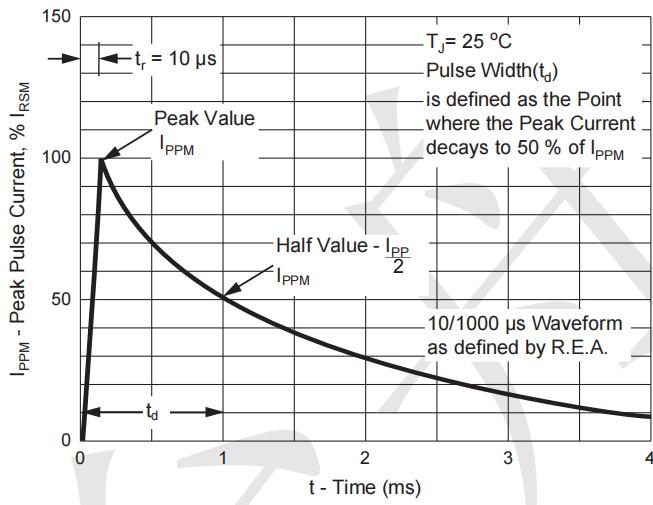
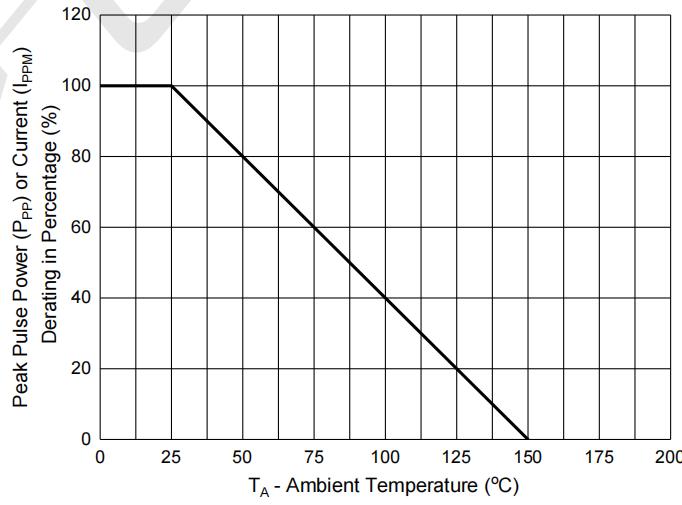


Fig. 4 - Pulse Derating Curve





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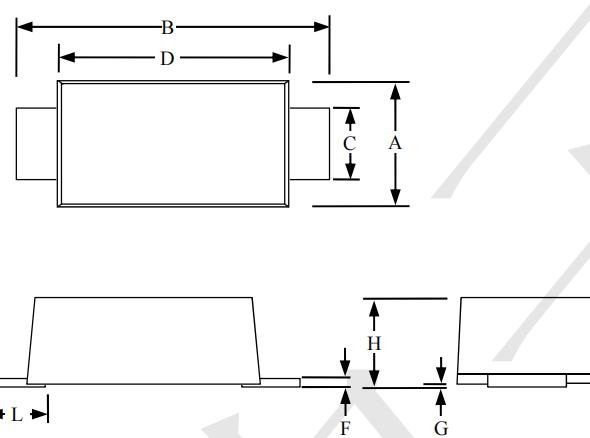
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**Package Outline Dimensions: SOD-123FL**



| 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  |