

Surface mount transient voltage suppressor power 200 watts

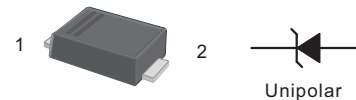
Stand-Off Voltage : 5.0V~220V

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

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Top View
Simplified outline sSOD-123FL and symbol

MECHANICAL DATA

- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight:15mg 0.00048oz

Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|--|--------------------|-------------|------|
| Peak Pulse Power Dissipation on TA=25°C (Note 1,2,5, Fig1) | P_{PPM} | 200 | W |
| Peak Forward Surge Current (Note 3) | I_{FSM} (UNI) | 20 | A |
| Peak Pulse Current on 10/1000 us waveform (Note 1) Fig 2 | I_{PPM} | see Table 1 | A |
| Steady State Power Dissipation (Note 4) | $P_{M(AV)}$ | 1 | W |
| Operating Junction and Storage Range | T_J, T_{STG} | -55 to +150 | °C |
| Typical Thermal Resistance | $R_{\theta JA}$ | 180 | °C |

NOTES

1. Non-repetitive current pulse per Fig 3 and derated above $T_A=25^\circ\text{C}$ 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 $T_L=75^\circ\text{C}$
5. Peak pulse powe. waveform is $t_p=10/1000\mu\text{s}$
6. A transient suppressor is selected according to the working peak reverse voltage(V_{RWM}), Which Should be equal to or greater than the DC or continuous peak operating voltage level

Characteristics at Ta = 25°C

| Type | Marking | V _{RWM} | Breakdown Voltage | | Test Current I _T | Reverse Leakage I _R @ V _{RWM} | Max. Clamp Voltage V _C @ I _{PP} | Peak Pulse Current I _{PP} |
|---------------|---------|------------------|----------------------------------|------|--------------------------------|--|--|---------------------------------------|
| | | | V _{BR} @ I _T | | | | | |
| | | | Min | Max | mA | µA | V | A |
| KPTVS5V0S1UR | AE | 5 | 6.4 | 7 | 10 | 200 | 9.2 | 21.7 |
| KPTVS6V0S1UR | AG | 6 | 6.67 | 7.37 | 10 | 100 | 10.3 | 19.4 |
| KPTVS6V5S1UR | AK | 6.5 | 7.22 | 7.98 | 10 | 75 | 11.2 | 17.9 |
| KPTVS7V0S1UR | AM | 7 | 7.78 | 8.6 | 10 | 50 | 12 | 16.7 |
| KPTVS7V5S1UR | AP | 7.5 | 8.33 | 9.21 | 1 | 50 | 12.9 | 15.5 |
| KPTVS8V0S1UR | AR | 8 | 8.89 | 9.83 | 1 | 25 | 13.6 | 14.7 |
| KPTVS8V5S1UR | AT | 8.5 | 9.44 | 10.4 | 1 | 10 | 14.4 | 13.9 |
| KPTVS9V0S1UR | AV | 9 | 10 | 11.1 | 1 | 5 | 15.4 | 13 |
| KPTVS10VS1UR | AX | 10 | 11.1 | 12.3 | 1 | 2.5 | 17 | 11.8 |
| KPTVS11VS1UR | AZ | 11 | 12.2 | 13.5 | 1 | 2.5 | 18.2 | 11 |
| KPTVS12VS1UR | BE | 12 | 13.3 | 14.7 | 1 | 2.5 | 19.9 | 10.1 |
| KPTVS13VS1UR | BG | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 9.3 |
| KPTVS14VS1UR | BK | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 8.6 |
| KPTVS15VS1UR | BM | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 8.2 |
| KPTVS16VS1UR | BP | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 7.7 |
| KPTVS17VS1UR | BR | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 7.2 |
| KPTVS18VS1UR | BT | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 6.8 |
| KPTVS20VS1UR | BV | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 6.2 |
| KPTVS22VS1UR | BX | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 5.6 |
| KPTVS24VS1UR | BZ | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 5.1 |
| KPTVS26VS1UR | CE | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 4.8 |
| KPTVS28VS1UR | CG | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 4.4 |
| KPTVS30VS1UR | CK | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 4.1 |
| KPTVS33VS1UR | CM | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 3.8 |
| KPTVS36VS1UR | CP | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 3.4 |
| KPTVS40VS1UR | CR | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 3.1 |
| KPTVS43VS1UR | CT | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 2.9 |
| KPTVS45VS1UR | CV | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 2.8 |
| KPTVS48VS1UR | CX | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 2.6 |
| KPTVS51VS1UR | CZ | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 2.4 |
| KPTVS54VS1UR | DE | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 2.3 |
| KPTVS58VS1UR | DG | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 2.1 |
| KPTVS60VS1UR | DK | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 1.8 |
| KPTVS64VS1UR | DM | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 1.7 |
| KPTVS70VS1UR | DP | 70 | 77.8 | 86 | 1 | 1 | 113 | 1.5 |
| KPTVS75VS1UR | DR | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 1.4 |
| KPTVS78VS1UR | DT | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 1.4 |
| KPTVS85VS1UR | DV | 85 | 94.4 | 104 | 1 | 1 | 137 | 1.3 |
| KPTVS90VS1UR | DX | 90 | 100 | 111 | 1 | 1 | 146 | 1.2 |
| KPTVS100VS1UR | DZ | 100 | 111 | 123 | 1 | 1 | 162 | 1.1 |
| KPTVS110VS1UR | EE | 110 | 122 | 135 | 1 | 1 | 177 | 1 |
| KPTVS120VS1UR | EG | 120 | 133 | 147 | 1 | 1 | 193 | 0.9 |
| KPTVS130VS1UR | EK | 130 | 144 | 159 | 1 | 1 | 209 | 0.8 |
| KPTVS150VS1UR | EM | 150 | 167 | 185 | 1 | 1 | 243 | 0.7 |
| KPTVS160VS1UR | EP | 160 | 178 | 197 | 1 | 1 | 259 | 0.7 |
| KPTVS170VS1UR | ER | 170 | 189 | 209 | 1 | 1 | 275 | 0.6 |
| KPTVS180VS1UR | ET | 180 | 201 | 222 | 1 | 1 | 292 | 0.5 |
| KPTVS200VS1UR | EX | 200 | 224 | 247 | 1 | 1 | 324 | 0.5 |
| KPTVS220VS1UR | E22 | 220 | 246 | 272 | 1 | 1 | 356 | 0.5 |

Fig.1 Peak Pulse Power Rating Curve

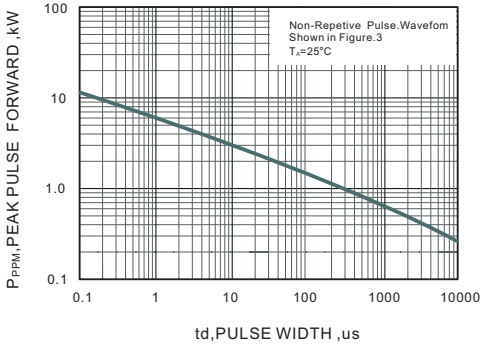


Fig.2 Forward Current Derating Curve

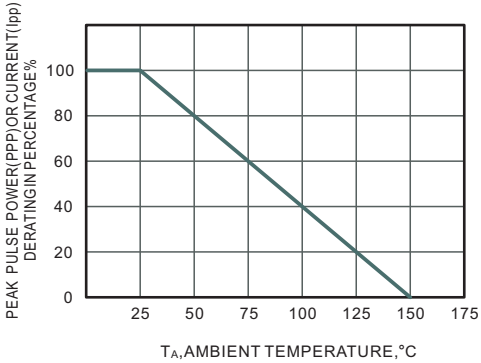


Fig.3 Pulse Waveform

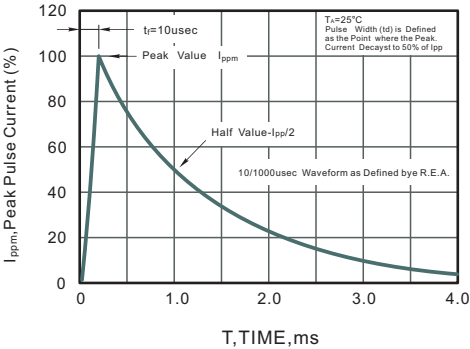
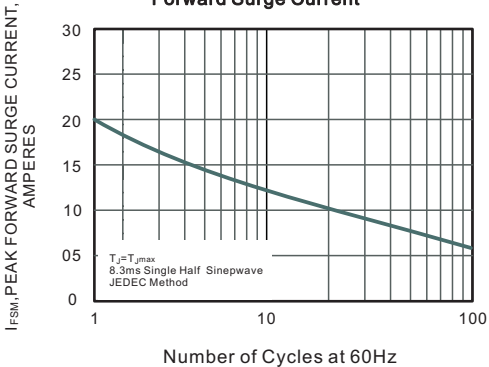


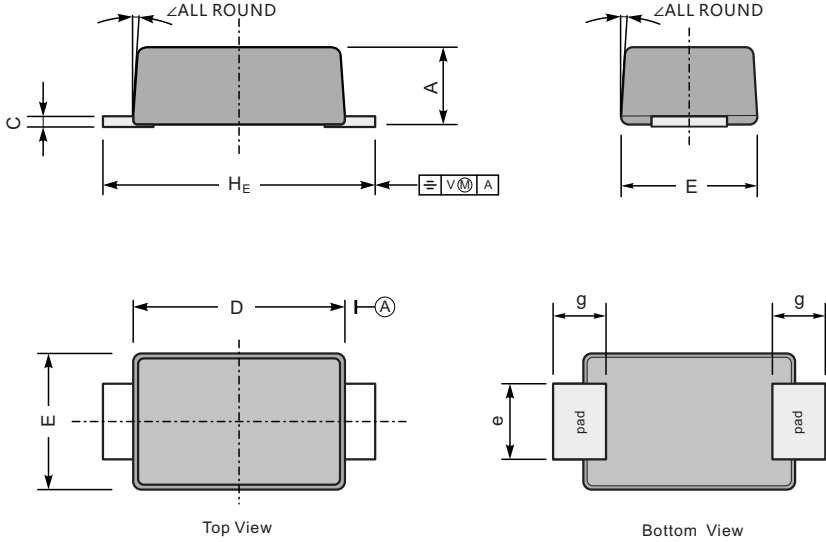
Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



PACKAGE OUTLINE

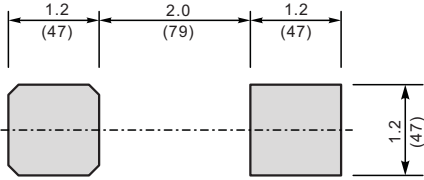
Plastic surface mounted package; 2 leads

SOD-123FL



| UNIT | | A | C | D | E | e | g | H_E | \angle |
|------|-----|-----|------|-----|-----|-----|-----|-------|----------|
| mm | max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8 | 7° |
| | min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5 | |
| mil | max | 43 | 7.9 | 114 | 75 | 43 | 35 | 150 | |
| | min | 35 | 4.7 | 102 | 67 | 31 | 28 | 138 | |

The recommended mounting pad size



Unit: $\frac{mm}{(mil)}$

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