



SMF5.0A~SMF175A

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5 to 175 Volt **POWER** 200 Watt

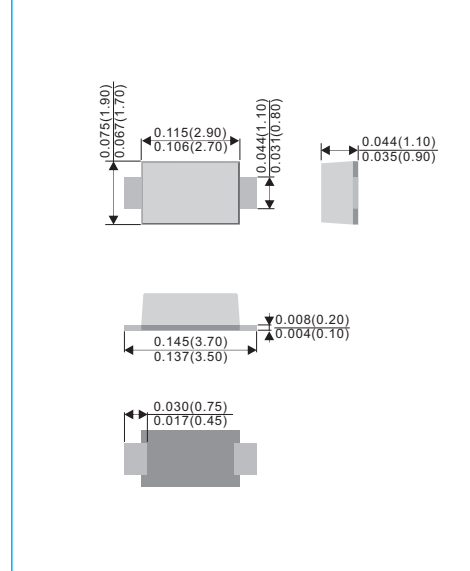
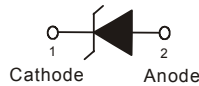
SOD-123FL Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Ultra Thin Profile Package for Space Constrained Utilization
- Package suitable for Automated Handling
- Low inductance
- High temperature soldering : 260°C/10 seconds at terminals
- ESD IEC-61000-4-2 Air ± 30kV, Contact ± 30kV
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: SOD-123FL, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0006 ounces, 0.0173 grams
- Standard Packaging: 8mm tape (EIA-481)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation on T _A = 25°C (Notes 1,2,5) Fig.1 | P _{PPM} | 200 | W |
| Peak Forward Surge Current per (Notes 3) | I _{FSM} | 20 | A |
| Peak Pulse Current on tp=10/1000µs waveform (Notes 1) Fig.3 | I _{PPM} | see Table 1 | A |
| Steady State Power Dissipation (Notes 4) | P _{M(AV)} | 1 | W |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V _{ESD} | ±30 ±30 | kV |
| Operating Junction and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |
| Typical thermal resistance | R _{θJA} | 180 | °C |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2 .
2. Mounted on 5mm² copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75°C = T_L .
5. Peak pulse power waveform is tp=10/1000µs.
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.



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| Part Number | V _{RWM} (Note 6) | V _{BR} @ I _T | | | I _r @ V _{RWM} | V _C @ I _{PP} | | Marking Code |
|-----------------------------------|------------------------------|----------------------------------|------|----------------|-----------------------------------|----------------------------------|------|--------------|
| | | Min. | Max. | I _T | | V | A | |
| | V | V | mA | μA | | | | |
| 200W Transient Voltage Suppressor | | | | | | | | |
| SMF5.0A | 5 | 6.4 | 7 | 10 | 200 | 9.2 | 21.7 | HE |
| SMF6.0A | 6 | 6.7 | 7.4 | 10 | 100 | 10.3 | 19.4 | HG |
| SMF6.5A | 6.5 | 7.2 | 8 | 10 | 75 | 11.2 | 17.9 | HK |
| SMF7.0A | 7 | 7.8 | 8.6 | 10 | 50 | 12 | 16.7 | HM |
| SMF7.5A | 7.5 | 8.3 | 9.2 | 1 | 50 | 12.9 | 15.5 | HP |
| SMF8.0A | 8 | 8.9 | 9.8 | 1 | 25 | 13.6 | 14.7 | HR |
| SMF8.5A | 8.5 | 9.4 | 10.4 | 1 | 10 | 14.4 | 13.9 | HT |
| SMF9.0A | 9 | 10 | 11.1 | 1 | 5 | 15.4 | 13 | HV |
| SMF10A | 10 | 11.1 | 12.3 | 1 | 2.5 | 17 | 11.8 | HX |
| SMF11A | 11 | 12.2 | 13.5 | 1 | 2.5 | 18.2 | 11 | HZ |
| SMF12A | 12 | 13.3 | 14.7 | 1 | 2.5 | 19.9 | 10.1 | IE |
| SMF13A | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 9.3 | IG |
| SMF14A | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 8.6 | IK |
| SMF15A | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 8.2 | IM |
| SMF16A | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 7.7 | IP |
| SMF17A | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 7.2 | IR |
| SMF18A | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 6.8 | IT |
| SMF20A | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 6.2 | IV |
| SMF22A | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 5.6 | IX |
| SMF24A | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 5.1 | IZ |
| SMF26A | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 4.8 | JE |
| SMF28A | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 4.4 | JG |
| SMF30A | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 4.1 | JK |
| SMF33A | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 3.8 | JM |
| SMF36A | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 3.4 | JP |
| SMF40A | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 3.1 | JR |
| SMF43A | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 2.9 | JT |
| SMF45A | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 2.8 | JV |
| SMF48A | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 2.6 | JX |
| SMF51A | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 2.4 | JZ |
| SMF54A | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 2.3 | RE |
| SMF58A | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 2.1 | RG |
| SMF60A | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 1.8 | RK |
| SMF64A | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 1.7 | RM |
| SMF70A | 70 | 77.8 | 86 | 1 | 1 | 113 | 1.5 | RP |
| SMF75A | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 1.4 | RR |
| SMF78A | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 1.4 | RT |
| SMF85A | 85 | 94.4 | 104 | 1 | 1 | 137 | 1.3 | RV |
| SMF90A | 90 | 100 | 111 | 1 | 1 | 146 | 1.2 | RX |
| SMF100A | 100 | 111 | 123 | 1 | 1 | 162 | 1.1 | RZ |
| SMF110A | 110 | 122 | 135 | 1 | 1 | 177 | 1 | SE |
| SMF120A | 120 | 133 | 147 | 1 | 1 | 193 | 0.9 | SG |
| SMF130A | 130 | 144 | 159 | 1 | 1 | 209 | 0.8 | SK |
| SMF150A | 150 | 167 | 185 | 1 | 1 | 243 | 0.7 | SM |
| SMF160A | 160 | 178 | 197 | 1 | 1 | 259 | 0.7 | SP |
| SMF170A | 170 | 189 | 209 | 1 | 1 | 275 | 0.6 | SR |
| SMF175A | 175 | 198 | 214 | 1 | 1 | 284 | 0.6 | S5 |



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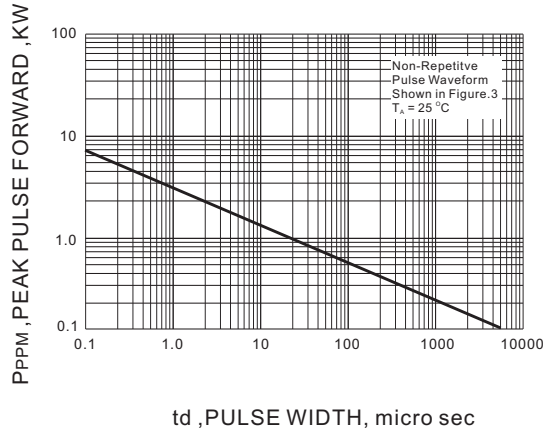


Fig.1 PEAK PULSE POWER RATING CURVE

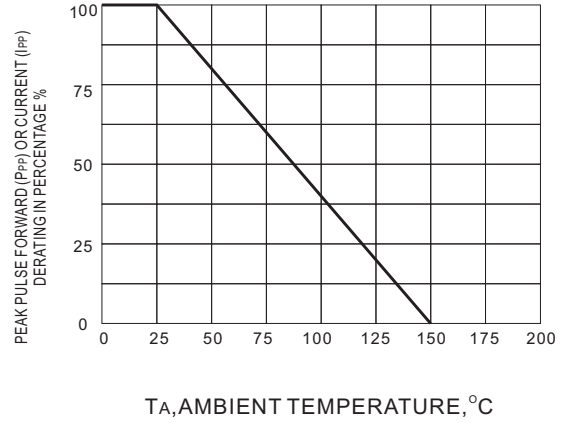


Fig.2 DERATING CURVE

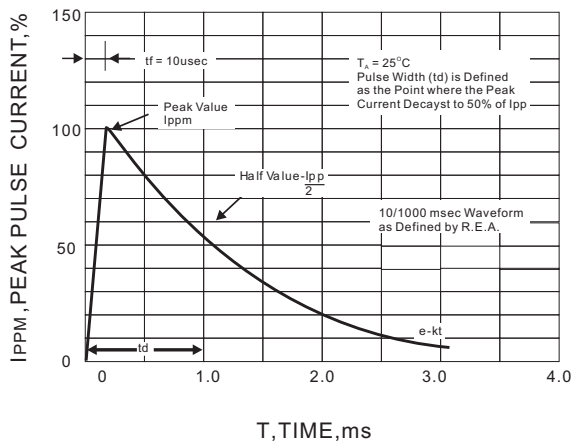


Fig.3 PULSE WAVEFORM

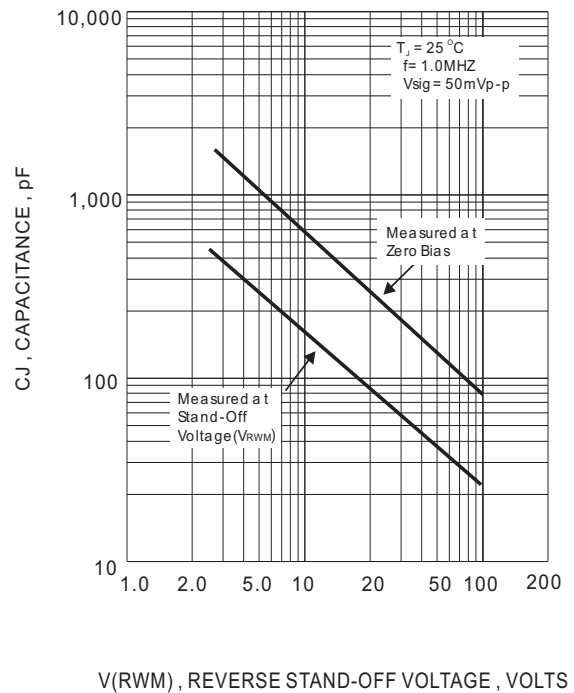


Fig.4 TYPICAL JUNCTION CAPACITANCE

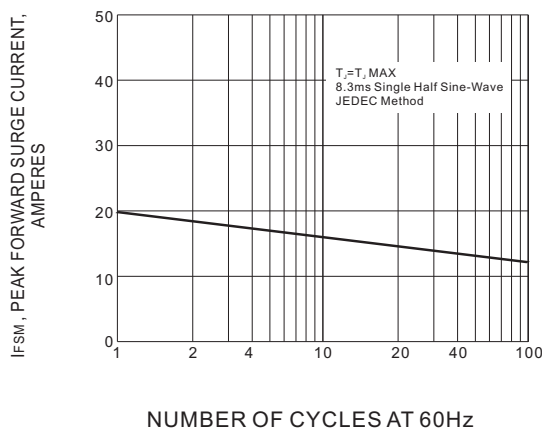


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

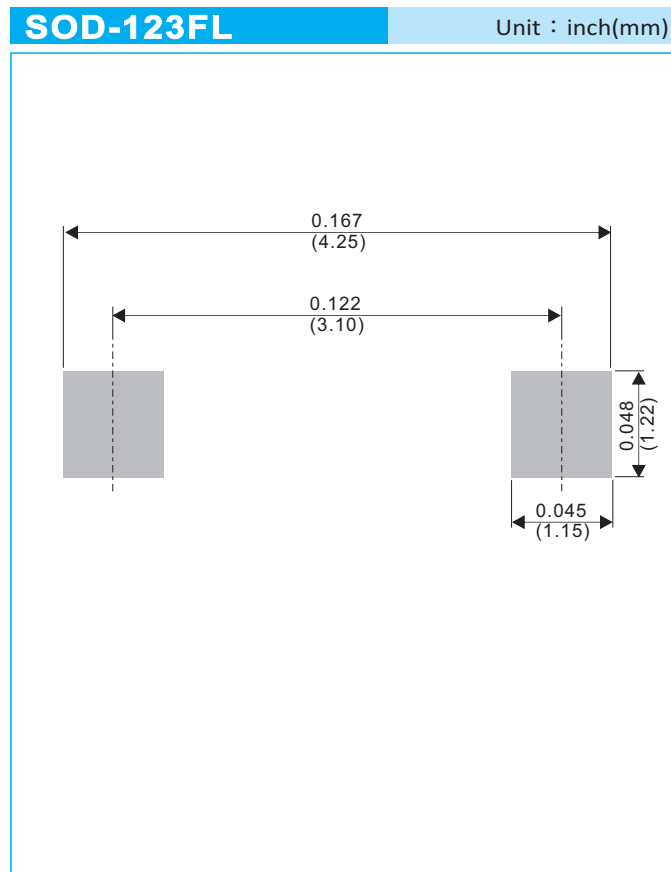


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PART NO PACKING CODE VERSION

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|--------------|---------|--------------|
| SMF5.0A_R1_00001 | SOD-123FL | 3K / 7" Reel | HE | Halogen free |

MOUNTING PAD LAYOUT





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