

RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability.
- 200W peak pulse power capability with a 10/1000 μ s wave from, repetition rate (duty cycle):0.01%.
- High temperature soldering guaranteed:
260°C / 40 seconds at terminals

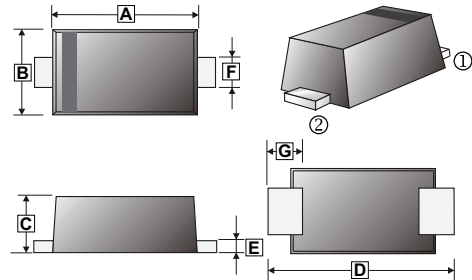
MECHANICAL DATA

- Case: JEDEC SOD-123FS. molded plastic
- Polarity: Indicated by cathode band
- Mounting position: Any
- Weight: 0.006 ounces, 0.0155 grams

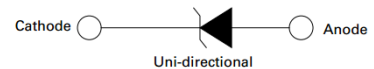
PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|-----------|-----|-------------|
| SOD-123FS | 3K | 7' inch |

SOD-123FS



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|------|------------|------|
| | Min. | Max. | | Min. | Max. |
| A | 2.50 | 2.90 | E | 0.05 | 0.26 |
| B | 1.50 | 2.00 | F | 0.70 | 1.20 |
| C | 0.95 | 1.10 | G | 0.35 | 0.90 |
| D | 3.40 | 3.90 | | | |



MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

| Parameter | Symbol | Value | Units |
|--|------------------------------------|---------|--------|
| Non-repetitive peak pulse power dissipation with a 10/1000 μ s waveform ¹ | P _{PPM} | 200 | W |
| Thermal resistance junction to ambient | R _{θJA} | 220 | °C / W |
| Thermal resistance junction to Lead | R _{θJL} | 100 | °C / W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55~150 | °C |

Notes:

1. Non-repetitive current pulse, per Fig.4 and de-rated above T_A=25°C per Fig.3

ELECTRICAL CHARACTERISTICS (Rating $T_A=25^\circ\text{C}$ unless otherwise specified)

| PART NUMBER | Marking | Reverse Stand Off Voltage V_R | Breakdown Voltage $V_{BR} @ I_T$ | | Test Current | Maximum Reverse Leakage $I_R @ V_{RWM}$ | Peak Pulse Current I_{PP} | Maximum Clamping Voltage $V_C @ I_{PP}$ |
|-------------|---------|---------------------------------|----------------------------------|------|--------------|---|-----------------------------|---|
| | | | Min | Max | | | | |
| | | | V | V | | | | |
| SFS5.0A | AE | 5 | 6.4 | 7 | 10 | 400 | 21.7 | 9.2 |
| SFS6.0A | AG | 6 | 6.67 | 7.37 | 10 | 400 | 19.4 | 10.3 |
| SFS6.5A | AK | 6.5 | 7.22 | 7.98 | 10 | 250 | 17.9 | 11.2 |
| SFS7.0A | AM | 7 | 7.78 | 8.6 | 10 | 100 | 16.7 | 12 |
| SFS7.5A | AP | 7.5 | 8.33 | 9.21 | 1 | 50 | 15.5 | 12.9 |
| SFS8.0A | AR | 8 | 8.89 | 9.83 | 1 | 25 | 14.7 | 13.6 |
| SFS8.5A | AT | 8.5 | 9.44 | 10.4 | 1 | 10 | 13.9 | 14.4 |
| SFS9.0A | AV | 9 | 10 | 11.1 | 1 | 5 | 13 | 15.4 |
| SFS10A | AX | 10 | 11.1 | 12.3 | 1 | 2.5 | 11.8 | 17 |
| SFS11A | AZ | 11 | 12.2 | 13.5 | 1 | 2.5 | 11 | 18.2 |
| SFS12A | BE | 12 | 13.3 | 14.7 | 1 | 2.5 | 10.1 | 19.9 |
| SFS13A | BG | 13 | 14.4 | 15.9 | 1 | 1 | 9.3 | 21.5 |
| SFS14A | BK | 14 | 15.6 | 17.2 | 1 | 1 | 8.6 | 23.2 |
| SFS15A | BM | 15 | 16.7 | 18.5 | 1 | 1 | 8.2 | 24.4 |
| SFS16A | BP | 16 | 17.8 | 19.7 | 1 | 1 | 7.7 | 26 |
| SFS17A | BR | 17 | 18.9 | 20.9 | 1 | 1 | 7.2 | 27.6 |
| SFS18A | BT | 18 | 20 | 22.1 | 1 | 1 | 6.8 | 29.2 |
| SFS20A | BV | 20 | 22.2 | 24.5 | 1 | 1 | 6.2 | 32.4 |
| SFS22A | BX | 22 | 24.4 | 26.9 | 1 | 1 | 5.6 | 35.5 |
| SFS24A | BZ | 24 | 26.7 | 29.5 | 1 | 1 | 5.1 | 38.9 |
| SFS26A | CE | 26 | 28.9 | 31.9 | 1 | 1 | 4.8 | 42.1 |
| SFS28A | CG | 28 | 31.1 | 34.4 | 1 | 1 | 4.4 | 45.4 |
| SFS30A | CK | 30 | 33.3 | 36.8 | 1 | 1 | 4.1 | 48.4 |
| SFS33A | CM | 33 | 36.7 | 40.6 | 1 | 1 | 3.8 | 53.3 |
| SFS36A | CP | 36 | 40 | 44.2 | 1 | 1 | 3.4 | 58.1 |
| SFS40A | CR | 40 | 44.4 | 49.1 | 1 | 1 | 3.1 | 64.5 |
| SFS43A | CT | 43 | 47.8 | 52.8 | 1 | 1 | 2.9 | 69.4 |
| SFS45A | CV | 45 | 50 | 55.3 | 1 | 1 | 2.8 | 72.7 |
| SFS48A | CX | 48 | 53.3 | 58.9 | 1 | 1 | 2.6 | 77.4 |
| SFS51A | CZ | 51 | 56.7 | 62.7 | 1 | 1 | 2.4 | 82.4 |
| SFS54A | DE | 54 | 60 | 66.3 | 1 | 1 | 2.3 | 87.1 |

Notes:

1. VBR measured after I_T applied for 300 μs , I_T = square wave pulse or equivalent.
2. Surge current waveform per 10 x 1000 μs exponential wave and de-rated per Fig.2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

RATINGS AND CHARACTERISTIC CURVES

Figure 1 - TVS Transients Clamping Waveform

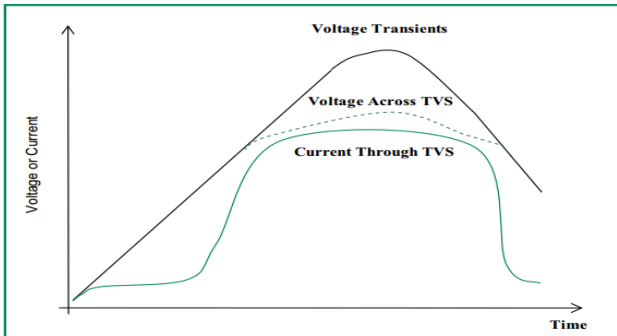


Figure 2 - Peak Pulse Power Rating Curve

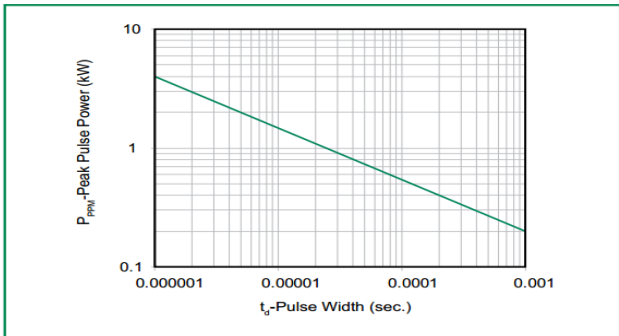


Figure 3 - Pulse Derating Curve

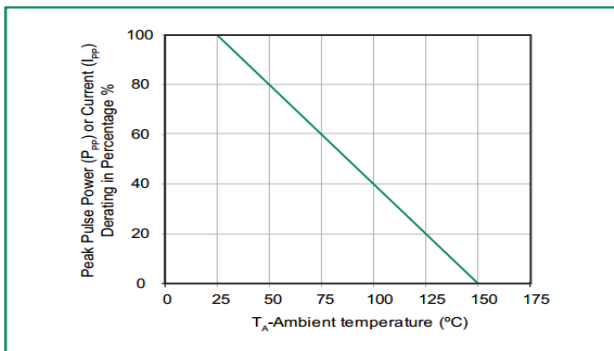


Figure 4 - Pulse Waveform - 10x1000µS

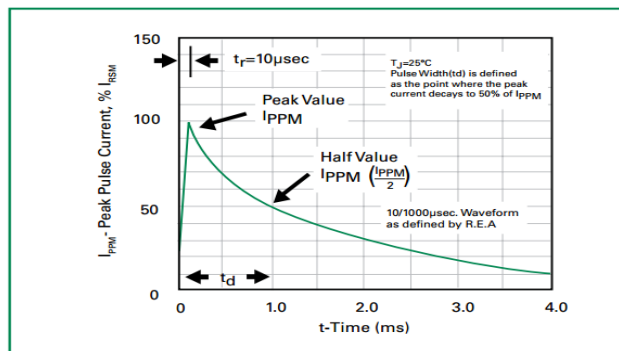


Figure 5 - Steady State Power Dissipation Derating Curve

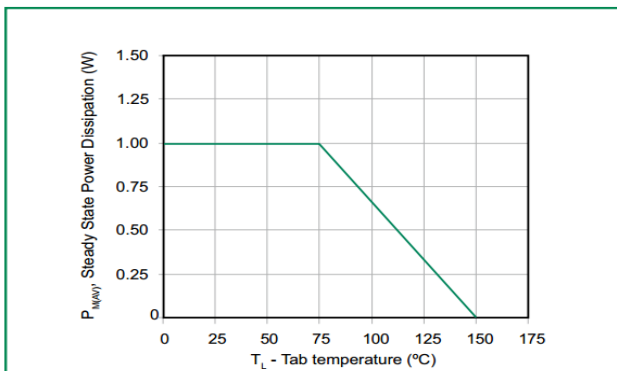


Figure 6 - Forward Voltage

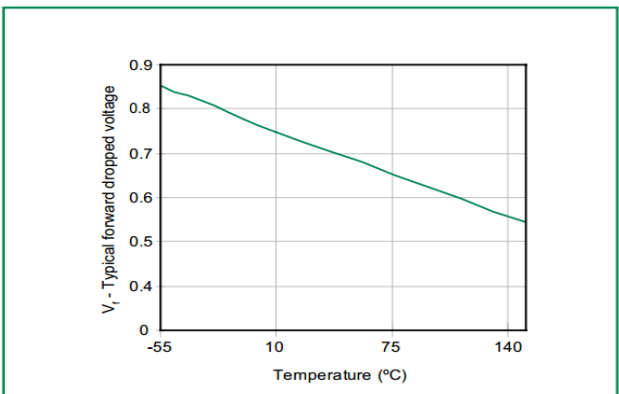


Figure 7 - C_i vs. Working Peak Reverse Voltage

