



Surface mount transient voltage suppressor power 400 watts

Stand-Off Voltage : 5V~440V

FEATURES

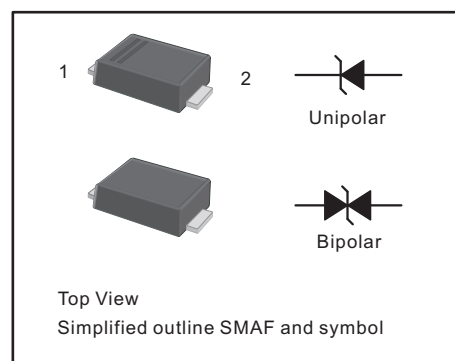
- For surface mounted applications in order to optimize board space.
- Low profile package
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability

MECHANICAL DATA

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg 0.00095oz

PINNING

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



Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|--|--------------------------|---------------------|------|
| Peak Pulse Power Dissipation on 10/1000us waveform | P_{PPM} | 400 | W |
| Peak Forward Surge Current (Note 2, Fig 4) | I_{FSM} | 60 | A |
| Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 2) | I_{PPM} | see Table 1 | A |
| Typical Junction capacitance at VR=4V, f=1MHz | C_J | 390 | pF |
| ESD Voltage per IEC6100-4-2 | V_{ESD1} V_{ESD2} | ± 8 ± 15 | kV |
| Typical Thermal Resistance Junction to Ambient(Note 2) | $R_{\theta JA}$ | 120 | °C/W |
| Operating Junction Temperature and Storage Temperature Range | T_j, T_{stg} | -55 ~ +175 | °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 FR-4 PCB single-sided copper, mini pad.
3. Peak Forward Surge Current : 8.3ms single half sine-wave Superimposed on rated load (JEDEC method).
4. Peak pulse power waveform is 10/1000 μs .



Characteristics at Ta = 25°C

Table 1

| Type | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | Max. Clamp Voltage | Peak Pulse Current | Package | |
|-----------|------------|---------------------------|----------------------------------|------|----------------|-----------------------------------|----------------------------------|--------------------|----------------------|----|
| | | | V _{BR} @ I _T | | | | | | SMAF | |
| | | V _{RRM} | Min | Max | I _T | I _R @ V _{RRM} | V _C @ I _{PP} | I _{PP} | Device Marking Ccode | |
| UNI | BI | V | V | V | mA | μA | V | A | UNI | BI |
| SMAFJ5.0A | SMAFJ5.0CA | 5 | 6.4 | 7 | 10 | 800 | 9.2 | 43.5 | AE | WE |
| SMAFJ6.0A | SMAFJ6.0CA | 6 | 6.67 | 7.37 | 10 | 800 | 10.3 | 38.8 | AG | WG |
| SMAFJ6.5A | SMAFJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 500 | 11.2 | 35.7 | AK | WK |
| SMAFJ7.0A | SMAFJ7.0CA | 7 | 7.78 | 8.6 | 10 | 200 | 12 | 33.3 | AM | WM |
| SMAFJ7.5A | SMAFJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 100 | 12.9 | 31 | AP | WP |
| SMAFJ8.0A | SMAFJ8.0CA | 8 | 8.89 | 9.83 | 1 | 50 | 13.6 | 29.4 | AR | WR |
| SMAFJ8.5A | SMAFJ8.5CA | 8.5 | 9.44 | 10.4 | 1 | 20 | 14.4 | 27.8 | AT | WT |
| SMAFJ9.0A | SMAFJ9.0CA | 9 | 10 | 11.1 | 1 | 10 | 15.4 | 26 | AV | WV |
| SMAFJ10A | SMAFJ10CA | 10 | 11.1 | 12.3 | 1 | 5 | 17 | 23.5 | AX | WX |
| SMAFJ11A | SMAFJ11CA | 11 | 12.2 | 13.5 | 1 | 1 | 18.2 | 22 | AZ | WZ |
| SMAFJ12A | SMAFJ12CA | 12 | 13.3 | 14.7 | 1 | 1 | 19.9 | 20.1 | BE | XE |
| SMAFJ13A | SMAFJ13CA | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 18.6 | BG | XG |
| SMAFJ14A | SMAFJ14CA | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 17.2 | BK | XK |
| SMAFJ15A | SMAFJ15CA | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 16.4 | BM | XM |
| SMAFJ16A | SMAFJ16CA | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 15.4 | BP | XP |
| SMAFJ17A | SMAFJ17CA | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 14.5 | BR | XR |
| SMAFJ18A | SMAFJ18CA | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 13.7 | BT | XT |
| SMAFJ20A | SMAFJ20CA | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 12.3 | BV | XV |
| SMAFJ22A | SMAFJ22CA | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 11.3 | BX | XX |
| SMAFJ24A | SMAFJ24CA | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 10.3 | BZ | XZ |
| SMAFJ26A | SMAFJ26CA | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 9.5 | CE | YE |
| SMAFJ28A | SMAFJ28CA | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 8.8 | CG | YG |
| SMAFJ30A | SMAFJ30CA | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 8.3 | CK | YK |
| SMAFJ33A | SMAFJ33CA | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 7.5 | CM | YM |
| SMAFJ36A | SMAFJ36CA | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 6.9 | CP | YP |
| SMAFJ40A | SMAFJ40CA | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 6.2 | CR | YR |
| SMAFJ43A | SMAFJ43CA | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 5.8 | CT | YT |
| SMAFJ45A | SMAFJ45CA | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 5.5 | CV | YV |
| SMAFJ48A | SMAFJ48CA | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 5.2 | CX | YX |
| SMAFJ51A | SMAFJ51CA | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 4.9 | CZ | YZ |
| SMAFJ54A | SMAFJ54CA | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 4.6 | RE | ZE |
| SMAFJ58A | SMAFJ58CA | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 4.3 | RG | ZG |
| SMAFJ60A | SMAFJ60CA | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 4.1 | RK | ZK |
| SMAFJ64A | SMAFJ64CA | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 3.9 | RM | ZM |
| SMAFJ70A | SMAFJ70CA | 70 | 77.8 | 86 | 1 | 1 | 113 | 3.5 | RP | ZP |
| SMAFJ75A | SMAFJ75CA | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 3.3 | RR | ZR |
| SMAFJ78A | SMAFJ78CA | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 3.2 | RT | ZT |
| SMAFJ85A | SMAFJ85CA | 85 | 94.4 | 104 | 1 | 1 | 137 | 2.9 | RV | ZV |
| SMAFJ90A | SMAFJ90CA | 90 | 100 | 111 | 1 | 1 | 146 | 2.7 | RX | ZX |
| SMAFJ100A | SMAFJ100CA | 100 | 111 | 123 | 1 | 1 | 162 | 2.5 | RZ | ZZ |
| SMAFJ110A | SMAFJ110CA | 110 | 122 | 135 | 1 | 1 | 177 | 2.3 | SE | VE |
| SMAFJ120A | SMAFJ120CA | 120 | 133 | 147 | 1 | 1 | 193 | 2.1 | SG | VG |
| SMAFJ130A | SMAFJ130CA | 130 | 144 | 159 | 1 | 1 | 209 | 1.9 | SK | VK |
| SMAFJ150A | SMAFJ150CA | 150 | 167 | 185 | 1 | 1 | 243 | 1.6 | SM | VM |
| SMAFJ160A | SMAFJ160CA | 160 | 178 | 197 | 1 | 1 | 259 | 1.5 | SP | VP |
| SMAFJ170A | SMAFJ170CA | 170 | 189 | 209 | 1 | 1 | 275 | 1.5 | SR | VR |
| SMAFJ180A | SMAFJ180CA | 180 | 201 | 222 | 1 | 1 | 292 | 1.4 | ST | VT |
| SMAFJ200A | SMAFJ200CA | 200 | 224 | 247 | 1 | 1 | 324 | 1.2 | SV | VV |
| SMAFJ220A | SMAFJ220CA | 220 | 246 | 272 | 1 | 1 | 356 | 1.1 | SX | VX |
| SMAFJ250A | SMAFJ250CA | 250 | 279 | 309 | 1 | 1 | 405 | 1 | SZ | VZ |
| SMAFJ300A | SMAFJ300CA | 300 | 335 | 371 | 1 | 1 | 486 | 0.8 | TE | UE |
| SMAFJ350A | SMAFJ350CA | 350 | 391 | 432 | 1 | 1 | 567 | 0.7 | TG | UG |
| SMAFJ400A | SMAFJ400CA | 400 | 447 | 494 | 1 | 1 | 648 | 0.6 | TK | UK |
| SMAFJ440A | SMAFJ440CA | 440 | 492 | 543 | 1 | 1 | 713 | 0.6 | TM | UM |



Fig.1 Peak Pulse Power Rating Curve



Fig.2 Forward Current Derating Curve



Fig.3 Pulse Waveform

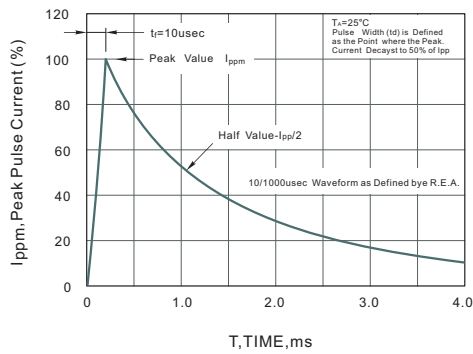
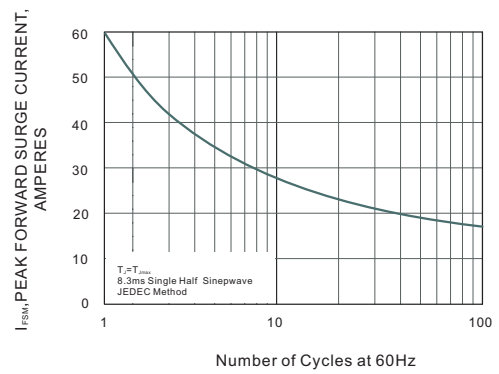


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

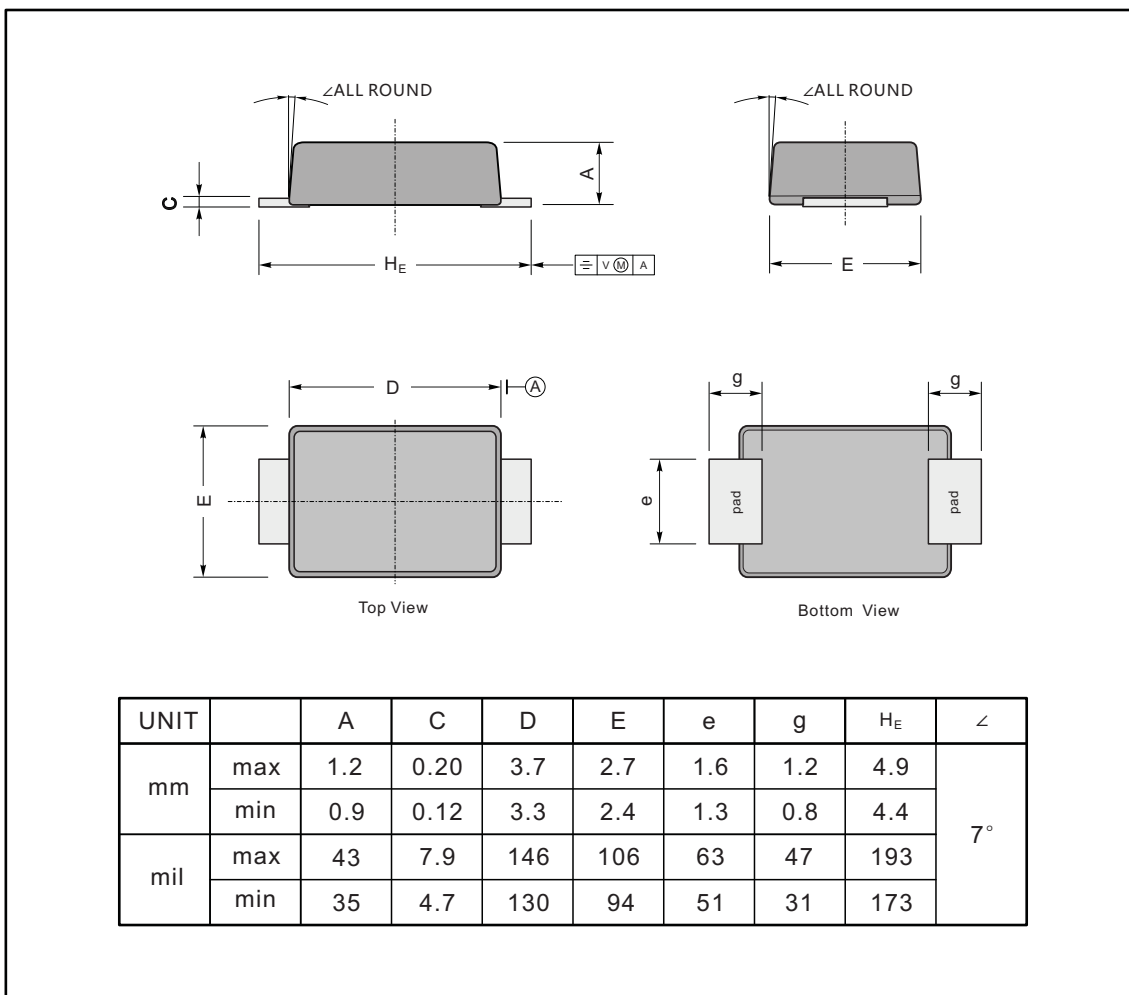




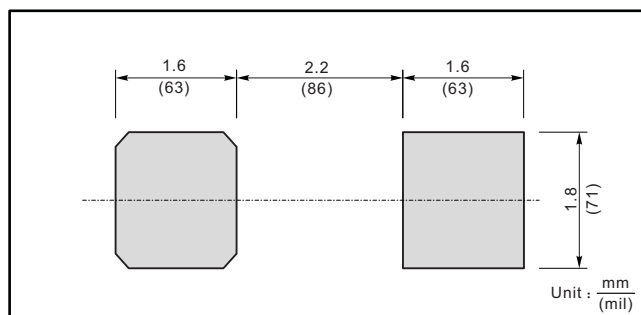
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMAF



The recommended mounting pad size



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