

Surface mount transient voltage suppressor power 600 watts

Stand-Off Voltage: 5.0V~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: SMBF
- ◆Terminals: Solderable per MIL-STD-750, Method 2026
- ◆Approx. Weight: 57mg /0.002oz

Maximum Ratings and Electrical characteristics

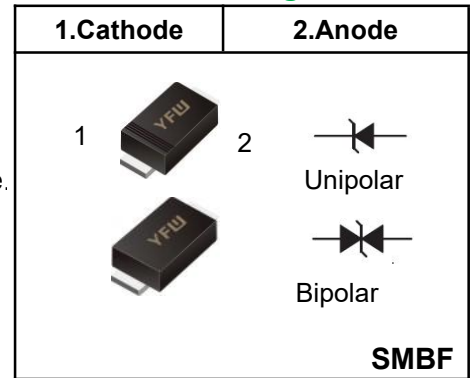
Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---|--------------------------------------|-------------|-------------|
| Peak Pulse Power Dissipation on 10/1000 s waveform (Note1,Note2, Fig.1). | P_{PPM} | 600 | W |
| Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3, Fig4). | I_{FSM} (UNI) | 100 | A |
| Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 3) | I_{PPM} | see Table 1 | A |
| ESD Voltage per IEC6100-4-2 | Contact | ±30 | kV |
| | Air | ±30 | |
| Typical Junction Capacitance at VR=4V, f=1MHz | C_j | 390 | pF |
| Typical Thermal Resistance Junction to Ambient(Note 2) | R_{θJA} | 100 | °C/W |
| Operating Junction Temperature and Storage Temperature Range | T_J,T_{STG} | -55 to +150 | °C |

NOTES:

- 1.Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2.
- 2.Mounted on 5 mm² (0.13mm thick) land areas.
- 3.Measured on 8.3ms, single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
- 4.Peak pulse power waveform is 10/1000μS.

Pinning



Characteristics at Ta = 25°C

| Type | | Reverse Stand-off Voltage | Breakdown Voltage V_{BR} @ I_T | | Test Current I_T | Maximum Reverse Leakage | Max. Clamp Voltage V_C @ I_{PP} | Peak Pulse Current I_{PP} | Package | |
|----------------------------------|------------|---------------------------|------------------------------------|------|--------------------|-------------------------|-------------------------------------|-----------------------------|---------|---------------------------|
| | | | V_{RWM} | Min | | | | | Max | SMBF Device Marking Ccode |
| UNI | BI | V | V | V | mA | μA | V | A | UNI | BI |
| 600W Transient Voltage Suppresso | | | | | | | | | | |
| SMBFJ5.0A | SMBFJ5.0CA | 5 | 6.4 | 7 | 10 | 800 | 9.2 | 65.3 | KE | AE |
| SMBFJ6.0A | SMBFJ6.0CA | 6 | 6.67 | 7.37 | 10 | 800 | 10.3 | 58.3 | KG | AG |
| SMBFJ6.5A | SMBFJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 500 | 11.2 | 53.6 | KK | AK |
| SMBFJ7.0A | SMBFJ7.0CA | 7 | 7.78 | 8.6 | 10 | 200 | 12 | 50 | KM | AM |
| SMBFJ7.5A | SMBFJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 100 | 12.9 | 46.6 | KP | AP |
| SMBFJ8.0A | SMBFJ8.0CA | 8 | 8.89 | 9.83 | 1 | 50 | 13.6 | 44.2 | KR | AR |
| SMBFJ8.5A | SMBFJ8.5CA | 8.5 | 9.44 | 10.4 | 1 | 20 | 14.4 | 41.7 | KT | AT |
| SMBFJ9.0A | SMBFJ9.0CA | 9 | 10 | 11.1 | 1 | 10 | 15.4 | 39 | KV | AV |
| SMBFJ10A | SMBFJ10CA | 10 | 11.1 | 12.3 | 1 | 5 | 17 | 35.3 | KX | AX |
| SMBFJ11A | SMBFJ11CA | 11 | 12.2 | 13.5 | 1 | 1 | 18.2 | 33 | KZ | AZ |
| SMBFJ12A | SMBFJ12CA | 12 | 13.3 | 14.7 | 1 | 1 | 19.9 | 30 | LE | BE |
| SMBFJ13A | SMBFJ13CA | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 28 | LG | BG |
| SMBFJ14A | SMBFJ14CA | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 25.9 | LK | BK |
| SMBFJ15A | SMBFJ15CA | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 24.6 | LM | BM |
| SMBFJ16A | SMBFJ16CA | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 23.1 | LP | BP |
| SMBFJ17A | SMBFJ17CA | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 21.8 | LR | BR |
| SMBFJ18A | SMBFJ18CA | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 20.6 | LT | BT |
| SMBFJ20A | SMBFJ20CA | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 18.6 | LV | BV |
| SMBFJ22A | SMBFJ22CA | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 16.9 | LX | BX |
| SMBFJ24A | SMBFJ24CA | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 15.5 | LZ | BZ |
| SMBFJ26A | SMBFJ26CA | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 14.3 | ME | CE |
| SMBFJ28A | SMBFJ28CA | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 13.3 | MG | CG |
| SMBFJ30A | SMBFJ30CA | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 12.4 | MK | CK |
| SMBFJ33A | SMBFJ33CA | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 11.3 | MM | CM |
| SMBFJ36A | SMBFJ36CA | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 10.4 | MP | CP |
| SMBFJ40A | SMBFJ40CA | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 9.3 | MR | CR |
| SMBFJ43A | SMBFJ43CA | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 8.7 | MT | CT |
| SMBFJ45A | SMBFJ45CA | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 8.3 | MV | CV |
| SMBFJ48A | SMBFJ48CA | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 7.8 | MX | CX |
| SMBFJ51A | SMBFJ51CA | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 7.3 | MZ | CZ |
| SMBFJ54A | SMBFJ54CA | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 6.9 | NE | DE |
| SMBFJ58A | SMBFJ58CA | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 6.5 | NG | DG |
| SMBFJ60A | SMBFJ60CA | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 6.2 | NK | DK |
| SMBFJ64A | SMBFJ64CA | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 5.9 | NM | DM |
| SMBFJ70A | SMBFJ70CA | 70 | 77.8 | 86 | 1 | 1 | 113 | 5.3 | NP | DP |
| SMBFJ75A | SMBFJ75CA | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 5 | NR | DR |
| SMBFJ78A | SMBFJ78CA | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 4.8 | NT | DT |
| SMBFJ85A | SMBFJ85CA | 85 | 94.4 | 104 | 1 | 1 | 137 | 4.4 | NV | DV |
| SMBFJ90A | SMBFJ90CA | 90 | 100 | 111 | 1 | 1 | 146 | 4.1 | NX | DX |
| SMBFJ100A | SMBFJ100CA | 100 | 111 | 123 | 1 | 1 | 162 | 3.7 | NZ | DZ |
| SMBFJ110A | SMBFJ110CA | 110 | 122 | 135 | 1 | 1 | 177 | 3.4 | PE | EE |
| SMBFJ120A | SMBFJ120CA | 120 | 133 | 147 | 1 | 1 | 193 | 3.1 | PG | EG |
| SMBFJ130A | SMBFJ130CA | 130 | 144 | 159 | 1 | 1 | 209 | 2.9 | PK | EK |
| SMBFJ150A | SMBFJ150CA | 150 | 167 | 185 | 1 | 1 | 243 | 2.5 | PM | EM |
| SMBFJ160A | SMBFJ160CA | 160 | 178 | 197 | 1 | 1 | 259 | 2.3 | PP | EP |
| SMBFJ170A | SMBFJ170CA | 170 | 189 | 209 | 1 | 1 | 275 | 2.2 | PR | ER |
| SMBFJ180A | SMBFJ180CA | 180 | 201 | 222 | 1 | 1 | 292 | 2.1 | PT | ET |
| SMBFJ188A | SMBFJ188CA | 188 | 209 | 231 | 1 | 1 | 304 | 2 | PB | EB |
| SMBFJ200A | SMBFJ200CA | 200 | 224 | 247 | 1 | 1 | 324 | 1.9 | PV | EV |
| SMBFJ220A | SMBFJ220CA | 220 | 246 | 272 | 1 | 1 | 356 | 1.7 | PX | EX |
| SMBFJ250A | SMBFJ250CA | 250 | 279 | 309 | 1 | 1 | 405 | 1.5 | PZ | EZ |
| SMBFJ300A | SMBFJ300CA | 300 | 335 | 371 | 1 | 1 | 486 | 1.3 | QE | FE |
| SMBFJ350A | SMBFJ350CA | 350 | 391 | 432 | 1 | 1 | 567 | 1.1 | QG | FG |
| SMBFJ400A | SMBFJ400CA | 400 | 447 | 494 | 1 | 1 | 648 | 0.9 | QK | FK |
| SMBFJ440A | SMBFJ440CA | 440 | 492 | 543 | 1 | 1 | 713 | 0.9 | QM | FM |

Fig.1 Peak Pulse Power Rating Curve

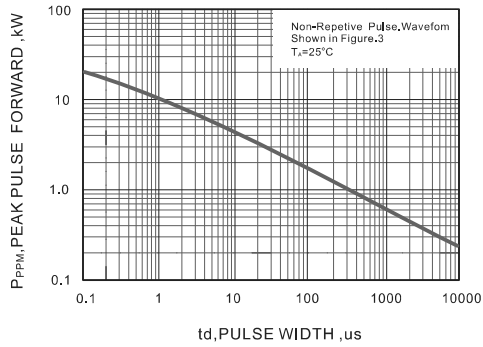


Fig.2 Forward Current Derating Curve

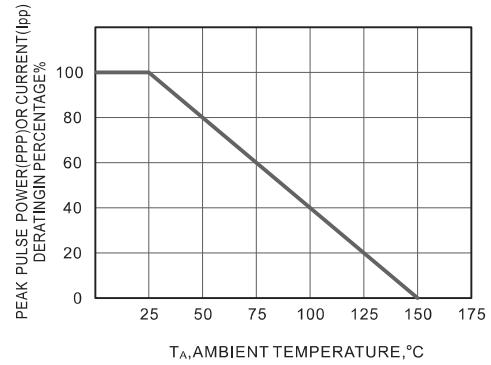


Fig.3 Pulse Waveform

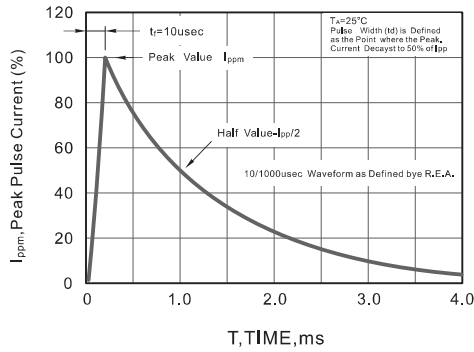
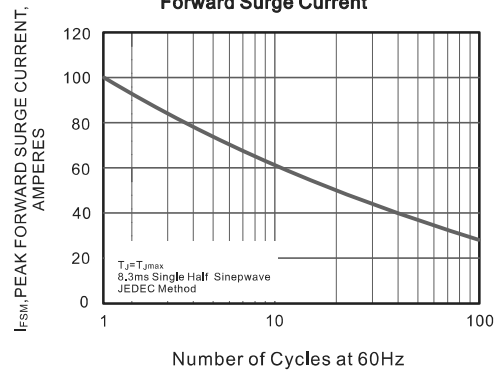


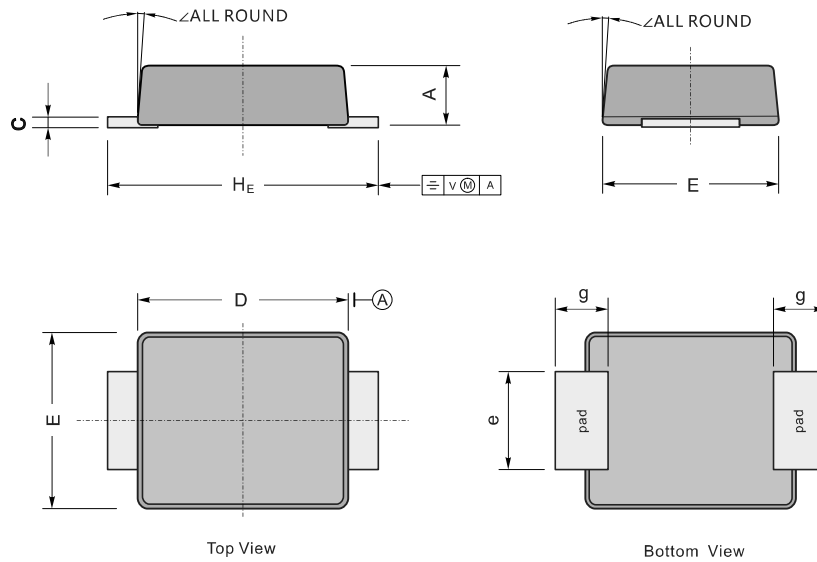
Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



Package Outline

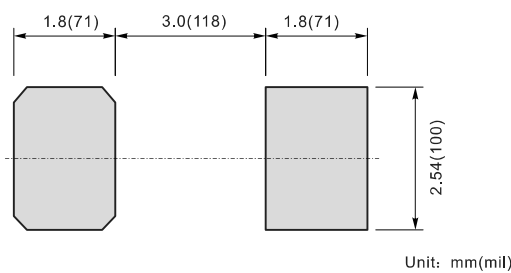
SMBF

Plastic surface mounted package; 2 leads



| UNIT | | A | C | D | E | H_E | e | g | \angle |
|------|-----|-----|------|-----|-----|-------|-----|-----|----------|
| mm | max | 1.3 | 0.26 | 4.4 | 3.7 | 5.5 | 2.2 | 1.0 | 9° |
| | min | 1.1 | 0.18 | 4.2 | 3.5 | 5.1 | 1.9 | | |
| mil | max | 51 | 10 | 173 | 146 | 216 | 86 | 40 | |
| | min | 43 | 7 | 165 | 138 | 200 | 75 | | |

The recommended mounting pad size



Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SMBF | Tape/Reel, 13" reel | 5000 | EIA-481-1 |