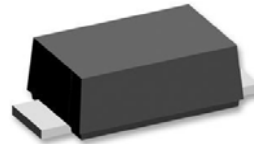


200Watts Transient Voltage Suppressor SMF3.3(C)A ~ SMF440A

Features

- Glass passivated chip
- 200 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



**SMF
SOD-123FL**



Mechanical Characteristics

- JEDEC SOD-123FL package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

Absolute Maximum Rating

| Rating | Symbol | Value | Units |
|---------------------------------------------------------------------------------------------|-----------------------------------|----------------|-------|
| Peak power dissipation with a 10/1000 us waveform ⁽¹⁾ | PPPM | 200 | W |
| Peak pulse current with a 10/1000 us waveform ⁽¹⁾ | IPPM | See Next Table | A |
| Power dissipation on infinite heatsink at TL = 75 °C | P _D | 1.0 | W |
| Peak forward surge current, 8.3 ms single half sine wave unidirectional only ⁽²⁾ | I _{FSM} | 30 | A |
| Maximum instantaneous forward voltage at 10 A for unidirectional only ⁽³⁾ | V _F | 3.5/6.5 | V |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to +150 | °C |

1) Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;

2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

3) V_F<3.5V for devices of VBR<200V and V_F<6.5V for devices of VBR>201V.

200Watts Transient Voltage Suppressor SMF3.3(C)A ~ SMF440A

Electrical Characteristics

| Part Number | | Marking | | Reverse Stand Off Voltage V_R (V) | Breakdown Voltage | | Test Current I_T (mA) | Maximum Clamping Voltage V_C (V) @ I_{PP} | Maximum Peak Pulse Current I_{PP} (A) | Maximum Reverse Leakage I_R (μ A) @ V_R |
|-------------|----------|---------|----|----------------------------------------|------------------------------|-------|----------------------------|--------------------------------------------------|--------------------------------------------|-----------------------------------------------------|
| Uni | Bi | Uni | Bi | | V_{BR} (V) @ I_T Min. | Max. | | | | |
| SMF3.3A | SMF3.3CA | HZ | GZ | 3.3 | 4.30 | 5.30 | 10 | 7.3 | 27.40 | 800 |
| SMF5.0A | SMF5.0CA | KE | AE | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 21.74 | 800 |
| SMF6.0A | SMF6.0CA | KG | AG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 19.42 | 800 |
| SMF6.5A | SMF6.5CA | KK | AK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 17.86 | 500 |
| SMF7.0A | SMF7.0CA | KM | AM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 16.67 | 200 |
| SMF7.5A | SMF7.5CA | KP | AP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 15.50 | 100 |
| SMF8.0A | SMF8.0CA | KR | AR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 14.71 | 50 |
| SMF8.5A | SMF8.5CA | KT | AT | 8.5 | 9.44 | 10.40 | 1 | 14.4 | 13.89 | 20 |
| SMF9.0A | SMF9.0CA | KV | AV | 9.0 | 10.00 | 11.10 | 1 | 15.4 | 12.99 | 10 |
| SMF10A | SMF10CA | KX | AX | 10 | 11.10 | 12.30 | 1 | 17.0 | 11.76 | 5 |
| SMF11A | SMF11CA | KZ | AZ | 11 | 12.20 | 13.50 | 1 | 18.2 | 10.99 | 1 |
| SMF12A | SMF12CA | LE | BE | 12 | 13.30 | 14.70 | 1 | 19.9 | 10.05 | 1 |
| SMF13A | SMF13CA | LG | BG | 13 | 14.40 | 15.90 | 1 | 21.5 | 9.30 | 1 |
| SMF14A | SMF14CA | LK | BK | 14 | 15.60 | 17.20 | 1 | 23.2 | 8.62 | 1 |
| SMF15A | SMF15CA | LM | BM | 15 | 16.70 | 18.50 | 1 | 24.4 | 8.20 | 1 |
| SMF16A | SMF16CA | LP | BP | 16 | 17.80 | 19.70 | 1 | 26.0 | 7.69 | 1 |
| SMF17A | SMF17CA | LR | BR | 17 | 18.90 | 20.90 | 1 | 27.6 | 7.25 | 1 |
| SMF18A | SMF18CA | LT | BT | 18 | 20.00 | 22.10 | 1 | 29.2 | 6.85 | 1 |
| SMF20A | SMF20CA | LV | BV | 20 | 22.20 | 24.50 | 1 | 32.4 | 6.17 | 1 |
| SMF22A | SMF22CA | LX | BX | 22 | 24.40 | 26.90 | 1 | 35.5 | 5.63 | 1 |
| SMF24A | SMF24CA | LZ | BZ | 24 | 26.70 | 29.50 | 1 | 38.9 | 5.14 | 1 |
| SMF26A | SMF26CA | ME | CE | 26 | 28.90 | 31.90 | 1 | 42.1 | 4.75 | 1 |
| SMF28A | SMF28CA | MG | CG | 28 | 31.10 | 34.40 | 1 | 45.4 | 4.41 | 1 |
| SMF30A | SMF30CA | MK | CK | 30 | 33.50 | 36.80 | 1 | 48.4 | 4.13 | 1 |
| SMF33A | SMF33CA | MM | CM | 33 | 36.70 | 40.60 | 1 | 53.3 | 3.75 | 1 |
| SMF36A | SMF36CA | MP | CP | 36 | 40.00 | 44.20 | 1 | 58.1 | 3.44 | 1 |
| SMF40A | SMF40CA | MR | CR | 40 | 44.40 | 49.10 | 1 | 64.5 | 3.10 | 1 |
| SMF43A | SMF43CA | MT | CT | 43 | 47.80 | 52.80 | 1 | 69.4 | 2.88 | 1 |
| SMF45A | SMF45CA | MV | CV | 45 | 50.00 | 55.30 | 1 | 72.7 | 2.75 | 1 |
| SMF48A | SMF48CA | MX | CX | 48 | 53.30 | 58.90 | 1 | 77.4 | 2.58 | 1 |
| SMF51A | SMF51CA | MZ | CZ | 51 | 56.70 | 62.70 | 1 | 82.4 | 2.43 | 1 |
| SMF54A | SMF54CA | NE | DE | 54 | 60.00 | 66.30 | 1 | 87.1 | 2.30 | 1 |
| SMF58A | SMF58CA | NG | DG | 58 | 64.40 | 71.20 | 1 | 93.6 | 2.14 | 1 |
| SMF60A | SMF60CA | NK | DK | 60 | 66.70 | 73.70 | 1 | 96.8 | 2.07 | 1 |
| SMF64A | SMF64CA | NM | DM | 64 | 71.10 | 78.60 | 1 | 103.0 | 1.94 | 1 |
| SMF70A | SMF70CA | NP | DP | 70 | 77.80 | 86.00 | 1 | 113.0 | 1.77 | 1 |
| SMF75A | SMF75CA | NR | DR | 75 | 83.30 | 92.10 | 1 | 121.0 | 1.65 | 1 |
| SMF78A | SMF78CA | NT | DT | 78 | 86.70 | 95.80 | 1 | 126.0 | 1.59 | 1 |
| SMF85A | SMF85CA | NV | DV | 85 | 94.40 | 104.0 | 1 | 137.0 | 1.46 | 1 |
| SMF90A | SMF90CA | NX | DX | 90 | 100.0 | 111.0 | 1 | 146.0 | 1.37 | 1 |
| SMF100A | SMF100CA | NZ | DZ | 100 | 111.0 | 123.0 | 1 | 162.0 | 1.23 | 1 |
| SMF110A | SMF110CA | PE | EE | 110 | 122.0 | 135.0 | 1 | 177.0 | 1.13 | 1 |
| SMF120A | SMF120CA | PG | EG | 120 | 133.0 | 147.0 | 1 | 193.0 | 1.04 | 1 |
| SMF130A | SMF130CA | PK | EK | 130 | 144.0 | 159.0 | 1 | 209.0 | 0.96 | 1 |
| SMF150A | SMF150CA | PM | EM | 150 | 167.0 | 185.0 | 1 | 243.0 | 0.82 | 1 |
| SMF160A | SMF160CA | PP | EP | 160 | 178.0 | 197.0 | 1 | 259.0 | 0.77 | 1 |
| SMF170A | SMF170CA | PR | ER | 170 | 189.0 | 209.0 | 1 | 275.0 | 0.73 | 1 |
| SMF180A | SMF180CA | PT | ET | 180 | 201.0 | 222.0 | 1 | 292.0 | 0.68 | 1 |
| SMF190A | SMF190CA | PV | EV | 190 | 209.0 | 243.0 | 1 | 308.0 | 0.65 | 1 |
| SMF200A | SMF200CA | TX | PX | 200 | 224.0 | 247.0 | 1 | 324.0 | 0.62 | 1 |
| SMF210A | SMF210CA | PZ | EZ | 210 | 231.0 | 268.0 | 1 | 340.0 | 0.62 | 1 |
| SMF220A | SMF220CA | QE | FE | 220 | 246.0 | 272.0 | 1 | 356.0 | 0.56 | 1 |
| SMF250A | SMF250CA | QG | FG | 250 | 279.0 | 309.0 | 1 | 405.0 | 0.49 | 1 |
| SMF300A | | QK | | 300 | 335.0 | 371.0 | 1 | 486.0 | 0.41 | 1 |
| SMF350A | | QM | | 350 | 391.0 | 432.0 | 1 | 567.0 | 0.35 | 1 |
| SMF400A | | QP | | 400 | 447.0 | 494.0 | 1 | 648.0 | 0.31 | 1 |
| SMF440A | | QR | | 440 | 492.0 | 543.0 | 1 | 713.0 | 0.28 | 1 |

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

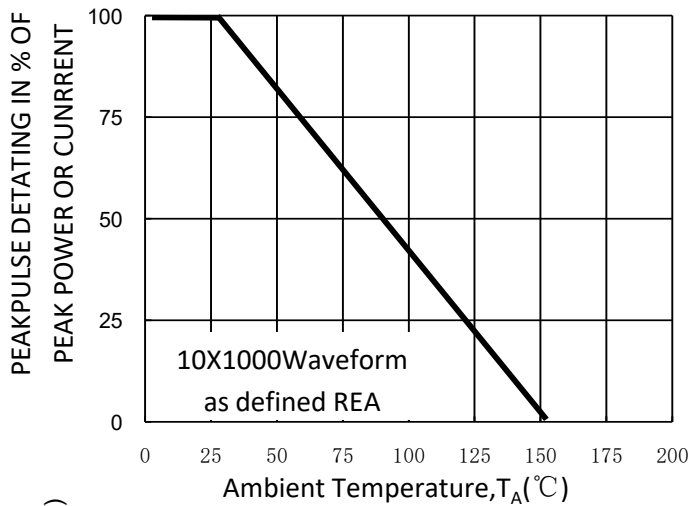


Fig. 1-Pulse Derating Curve

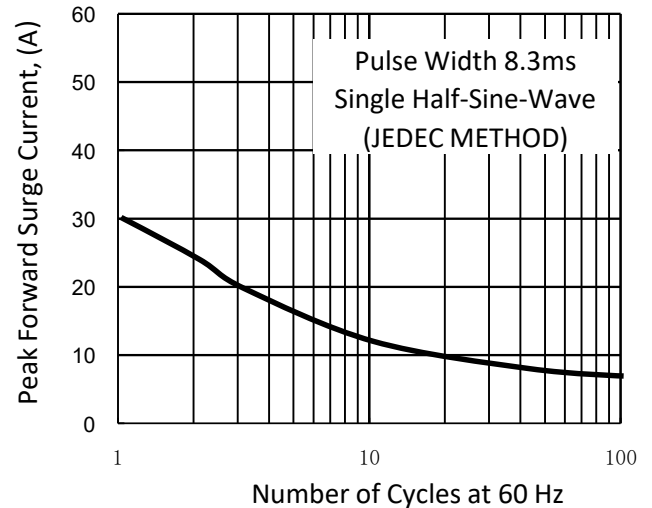


Fig. 2-Maximum Non-Repetitive Surge Current

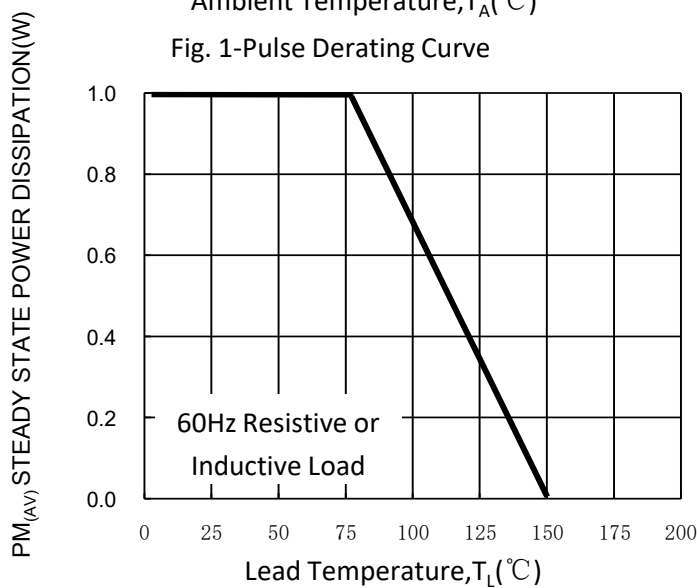


Fig. 3-Steady State Power Derating Curve

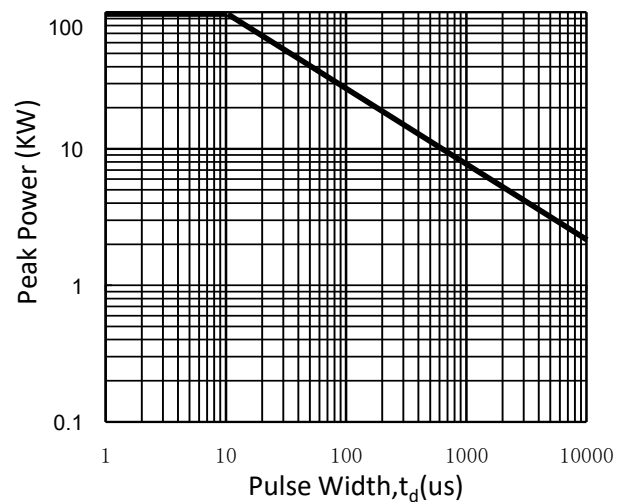


Fig. 4-Peak Pulse Power Rating Curve

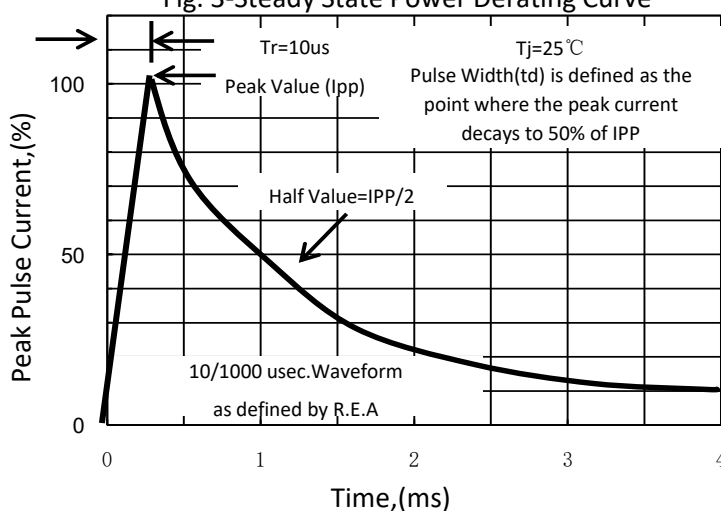


Fig. 5-Pulse Waveform

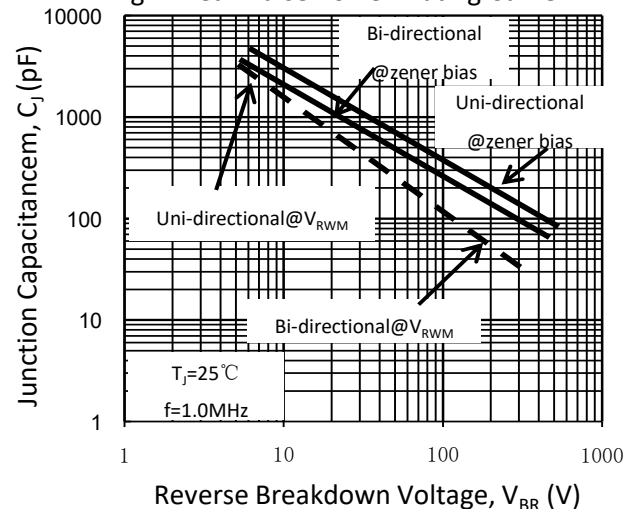
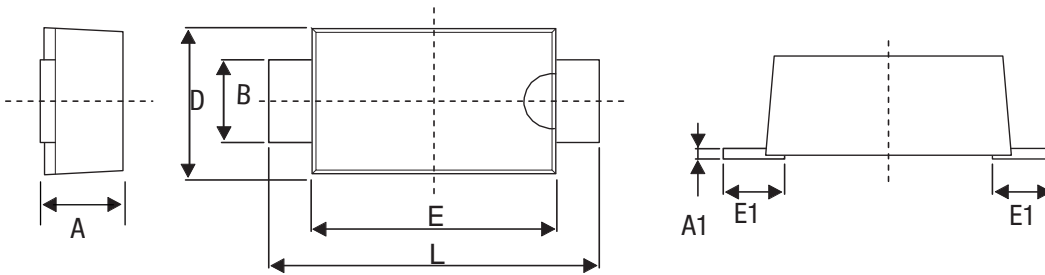


Fig. 6-Typical Junction Capacitance

200Watts
Transient Voltage Suppressor
SMF3.3(C)A ~ SMF440A

Dimensions (Unit: mm)



| A | | A1 | | B | | E | | E1 | | D | | L | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 1.200 | 1.400 | 0.150 | 0.250 | 0.800 | 1.100 | 2.700 | 2.900 | 0.350 | 0.850 | 1.750 | 1.950 | 3.500 | 3.900 |

Packaging: 3,000/Tape & Reel

Part Marking System

