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SMF5.0(C)A-MS - SMF440(C)A-MS

Product specification


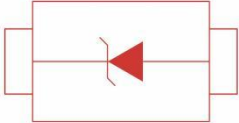

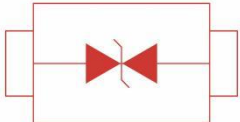
FEATURES

- 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 : JEDEC SOD-123FL molded plastic body
- Terminals : Solderable per MIL-STD-750, Method 2026
- Polarity : Polarity symbol marking on body
- Mounting Position : Any
- Weight : 0.0007 ounce, 0.02 grams
- Marking : Date Code and Marking Code See Page 2

Reference News

| PACKAGE OUTLINE | PIN CONFIGURATION |
|---|---|
|  |  |
| Unipolar | |
|  |  |
| Bipolar | |

Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|--|--------------------|-------------|------|
| Peak Pulse Power Dissipation on TA=25°C (Note 1,2,5, Fig1) | P_{PPM} | 200 | W |
| Peak Forward Surge Current (Note 3) | I_{FSM} (UNI) | 30 | A |
| Peak Pulse Current on 10/1000 us waveform (Note 1) Fig 2 | I_{PPM} | see Table 1 | A |
| Steady State Power Dissipation (Note 4) | $P_{M(AV)}$ | 1.0 | W |
| Operating Junction and Storage Range | T_J, T_{STG} | -55 to +150 | °C |
| Typical Thermal Resistance | $R_{\theta JA}$ | 180 | °C/W |

NOTES

1. Non- repetitive current pulse per Fig 3 and derated above TA =25°C per Fig 2
2. Mounted on 5mm² copper pads to each terminal
3. 8 .3ms single half sinewave, or equivalent square wave duty cycle=4 pulses per minutes maximum
4. lead temperature at TL =75°C
5. Peak pulse powe . waveform is tp=10/1000us
6. A transient suppressor is selected according to the working peak reverse voltage(VRWM),
Which Should be equal to or greater than the DC or continuous peak operating voltage level

Characteristics at Ta = 25°C

| Type | | Marking | | RMW | Breakdown Voltage | | Test Current | Reverse Leakage | Max . C lamp Vo ltage | Peak P ulse Current |
|------------|-------------|---------|------|-----|-------------------|------|--------------|-----------------|-----------------------|---------------------|
| | | | | | VBR @ IT | | | | | |
| | | | | | Min | Max | IT | IR @ VRWM | VC @ IPP | IPP |
| Uni | BI | Uni | BI | V | V | V | mA | µA | V | A |
| SMF5.0A-MS | SMF5.0CA-MS | AE | NE | 5 | 6.4 | 7 | 10 | 400 | 9.2 | 21.7 |
| SMF6.0A-MS | SMF6.0CA-MS | AG | NG | 6 | 6.67 | 7.37 | 10 | 400 | 10.3 | 19.4 |
| SMF6.5A-MS | SMF6.5CA-MS | AK | NK | 6.5 | 7.22 | 7.98 | 10 | 250 | 11.2 | 17.9 |
| SMF7.0A-MS | SMF7.0CA-MS | AM | NM | 7 | 7.78 | 8.6 | 10 | 100 | 12 | 16.7 |
| SMF7.5A-MS | SMF7.5CA-MS | AP | NP | 7.5 | 8.33 | 9.21 | 1 | 50 | 12.9 | 15.5 |
| SMF8.0A-MS | SMF8.0CA-MS | AR | NR | 8 | 8.89 | 9.83 | 1 | 25 | 13.6 | 14.7 |
| SMF8.5A-MS | SMF8.5CA-MS | AT | NT | 8.5 | 9.44 | 10.4 | 1 | 10 | 14.4 | 13.9 |
| SMF9.0A-MS | SMF9.0CA-MS | AV | NV | 9 | 10 | 11.1 | 1 | 5 | 15.4 | 13 |
| SMF10A-MS | SMF10CA-MS | AX | NX | 10 | 11.1 | 12.3 | 1 | 2.5 | 17 | 11.8 |
| SMF11A-MS | SMF11CA-MS | AZ | NZ | 11 | 12.2 | 13.5 | 1 | 2.5 | 18.2 | 11 |
| SMF12A-MS | SMF12CA-MS | BE | OE | 12 | 13.3 | 14.7 | 1 | 2.5 | 19.9 | 10.1 |
| SMF13A-MS | SMF13CA-MS | BG | OG | 13 | 14.4 | 15.9 | 1 | 1 | 21.5 | 9.3 |
| SMF14A-MS | SMF14CA-MS | BK | OK | 14 | 15.6 | 17.2 | 1 | 1 | 23.2 | 8.6 |
| SMF15A-MS | SMF15CA-MS | BM | OM | 15 | 16.7 | 18.5 | 1 | 1 | 24.4 | 8.2 |
| SMF16A-MS | SMF16CA-MS | BP | OP | 16 | 17.8 | 19.7 | 1 | 1 | 26 | 7.7 |
| SMF17A-MS | SMF17CA-MS | BR | OR | 17 | 18.9 | 20.9 | 1 | 1 | 27.6 | 7.2 |
| SMF18A-MS | SMF18CA-MS | BT | OT | 18 | 20 | 22.1 | 1 | 1 | 29.2 | 6.8 |
| SMF20A-MS | SMF20CA-MS | BV | OV | 20 | 22.2 | 24.5 | 1 | 1 | 32.4 | 6.2 |
| SMF22A-MS | SMF22CA-MS | BX | OX | 22 | 24.4 | 26.9 | 1 | 1 | 35.5 | 5.6 |
| SMF24A-MS | SMF24CA-MS | BZ | OZ | 24 | 26.7 | 29.5 | 1 | 1 | 38.9 | 5.1 |
| SMF26A-MS | SMF26CA-MS | CE | PE | 26 | 28.9 | 31.9 | 1 | 1 | 42.1 | 4.8 |
| SMF28A-MS | SMF28CA-MS | CG | PG | 28 | 31.1 | 34.4 | 1 | 1 | 45.4 | 4.4 |
| SMF30A-MS | SMF30CA-MS | CK | PK | 30 | 33.3 | 36.8 | 1 | 1 | 48.4 | 4.1 |
| SMF33A-MS | SMF33CA-MS | CM | PM | 33 | 36.7 | 40.6 | 1 | 1 | 53.3 | 3.8 |
| SMF36A-MS | SMF36CA-MS | CP | PP | 36 | 40 | 44.2 | 1 | 1 | 58.1 | 3.4 |
| SMF40A-MS | SMF40CA-MS | CR | PR | 40 | 44.4 | 49.1 | 1 | 1 | 64.5 | 3.1 |
| SMF43A-MS | SMF43CA-MS | CT | PT | 43 | 47.8 | 52.8 | 1 | 1 | 69.4 | 2.9 |
| SMF45A-MS | SMF45CA-MS | CV | PV | 45 | 50 | 55.3 | 1 | 1 | 72.7 | 2.8 |
| SMF48A-MS | SMF48CA-MS | CX | PX | 48 | 53.3 | 58.9 | 1 | 1 | 77.4 | 2.6 |
| SMF51A-MS | SMF51CA-MS | CZ | PZ | 51 | 56.7 | 62.7 | 1 | 1 | 82.4 | 2.4 |
| SMF54A-MS | SMF54CA-MS | DE | PA | 54 | 60 | 66.3 | 1 | 1 | 87.1 | 2.3 |
| SMF58A-MS | SMF58CA-MS | DG | PC | 58 | 64.4 | 71.2 | 1 | 1 | 93.6 | 2.1 |
| SMF60A-MS | SMF60CA-MS | DK | CDK | 60 | 66.7 | 73.7 | 1 | 1 | 96.8 | 1.8 |
| SMF64A-MS | SMF64CA-MS | DM | CDM | 64 | 71.1 | 78.6 | 1 | 1 | 103 | 1.7 |
| SMF70A-MS | SMF70CA-MS | DP | CDP | 70 | 77.8 | 86 | 1 | 1 | 113 | 1.5 |
| SMF75A-MS | SMF75CA-MS | DR | CDR | 75 | 83.3 | 92.1 | 1 | 1 | 121 | 1.4 |
| SMF78A-MS | SMF78CA-MS | DT | CDT | 78 | 86.7 | 95.8 | 1 | 1 | 126 | 1.4 |
| SMF85A-MS | SMF85CA-MS | DV | CDV | 85 | 94.4 | 104 | 1 | 1 | 137 | 1.3 |
| SMF90A-MS | SMF90CA-MS | DX | CDX | 90 | 100 | 111 | 1 | 1 | 146 | 1.2 |
| SMF100A-MS | SMF100CA-MS | DZ | CDZ | 100 | 111 | 123 | 1 | 1 | 162 | 1.1 |
| SMF110A-MS | SMF110CA-MS | EE | CEE | 110 | 122 | 135 | 1 | 1 | 177 | 1 |
| SMF120A-MS | SMF120CA-MS | EG | CEG | 120 | 133 | 147 | 1 | 1 | 193 | 0.9 |
| SMF130A-MS | SMF130CA-MS | EK | CEK | 130 | 144 | 159 | 1 | 1 | 209 | 0.8 |
| SMF150A-MS | SMF150CA-MS | EM | CEM | 150 | 167 | 185 | 1 | 1 | 243 | 0.7 |
| SMF160A-MS | SMF160CA-MS | EP | CEP | 160 | 178 | 197 | 1 | 1 | 259 | 0.7 |
| SMF170A-MS | SMF170CA-MS | ER | CER | 170 | 189 | 209 | 1 | 1 | 275 | 0.6 |
| SMF180A-MS | SMF180CA-MS | ET | CET | 180 | 201 | 222 | 1 | 1 | 292 | 0.5 |
| SMF190A-MS | SMF190CA-MS | EV | CEV | 190 | 211 | 232 | 1 | 1 | 308 | 0.5 |
| SMF200A-MS | SMF200CA-MS | EX | CEX | 200 | 224 | 247 | 1 | 1 | 324 | 0.5 |
| SMF220A-MS | SMF220CA-MS | E22 | CE22 | 220 | 246 | 272 | 1 | 1 | 356 | 0.5 |
| SMF250A-MS | SMF250CA-MS | E25 | CE25 | 250 | 279 | 309 | 1 | 1 | 405 | 0.5 |
| SMF300A-MS | SMF300CA-MS | E30 | CE30 | 300 | 335 | 371 | 1 | 1 | 486 | 0.45 |
| SMF350A-MS | SMF350CA-MS | E35 | CE35 | 350 | 391 | 432 | 1 | 1 | 567 | 0.4 |
| SMF400A-MS | SMF400CA-MS | E40 | CE40 | 400 | 447 | 494 | 1 | 1 | 648 | 0.35 |
| SMF440A-MS | SMF440CA-MS | E44 | CE44 | 440 | 492 | 543 | 1 | 1 | 713 | 0.3 |

Typical Characteristics

Fig.1 Peak Pulse Power Rating Curve



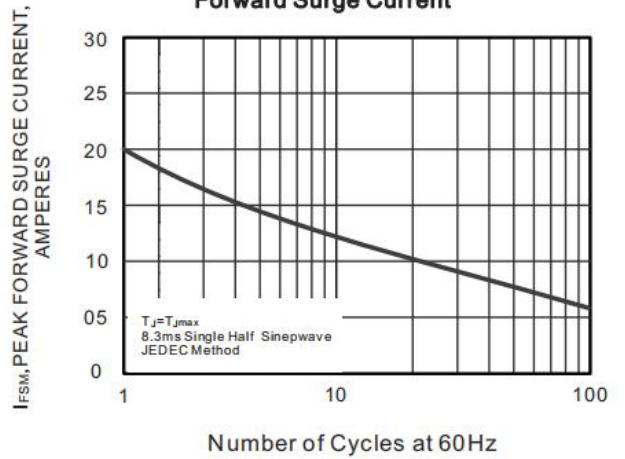
Fig.2 Forward Current Derating Curve



Fig.3 Pulse Waveform



Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



Packing information

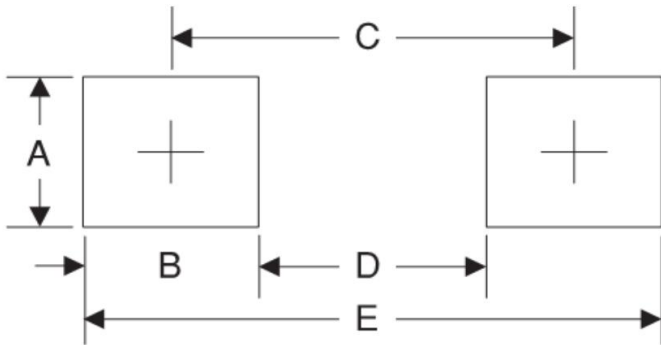


| Item | Symbol | Tolerance | SOD-123FL |
|--------------------------|--------|-----------|-----------|
| Carrier width | A | 0.1 | 2.1 |
| Carrier length | B | 0.1 | 4.0 |
| Carrier depth | C | 0.1 | 1.60 |
| Sprocket hole | d | 0.05 | |
| 7" Reel outside diameter | D | 2.0 | |
| 7" Reel inner diameter | D1 | min | |
| Feed hole diameter | D2 | 0.5 | |
| Sprocket hole position | E | 0.1 | |
| Punch hole position | F | 0.1 | |
| Punch hole pitch | P | 0.1 | |
| Sprocket hole pitch | P0 | 0.1 | |
| Embossment center | P1 | 0.1 | |
| Overall tape thickness | T | 0.1 | |
| Tape width | W | 0.3 | |
| Reel width | W1 | 1.0 | |

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|-----------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOD-123FL | 7" | 3,000 | 4.0 | 45,000 | 210*208*203 | 178 | 430*430*235 | 180,000 | 9.0 |

Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.2 | 0.047 |
| B | 1.2 | 0.047 |
| C | 3.2 | 0.126 |
| D | 2 | 0.079 |
| E | 4.4 | 0.173 |

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