



The SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

MECHANICAL DATA

- Case: SMC
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.22g / 0.0077oz

FEATURES

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated chip junction
- 3000W peak pulse power capability at 10x1000Us waveform, repetition rate {duty cycles}:0.01 %
- Excellent clamping capability
- Low incremental surge resistance
- Matte Tin Lead-free Plated

PINNING

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



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

| Parameter | Symbol | Value | Unit |
|---|---------------------------------|------------|------|
| Peak Pulse Power Dissipation at T _A =25°C by 10x1000 us waveform (Fig.1)(Note 1), (Note 2) | P _{PPM} | 3000 | W |
| Power Dissipation on infinite heat sink at TA=50°C | P _{M(AV)} | 6.5 | W |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3) | I _{FSM} | 300 | A |
| Maximum Instantaneous Forward Voltage at 100A for Unidirectional only | V _F | 3.5 | V |
| Operating Junction and Storage Temperature Range | T _J T _{STG} | -65 to 150 | °C |
| Typical Thermal Resistance Junction to Lead | R _{UJL} | 15 | °C/W |
| Typical Thermal Resistance Junction to Ambient | R _{UJA} | 75 | °C/W |

Notes:

1. Non-repetitive current pulse . per Fig 3 and derated above Ta = 25°C per Fig. 2
2. Mounted on copper pad area of 0.31x0.31" (8.0 x 8.0mm) to each terminal
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum



Characteristics at Ta = 25°C

Table 1

| Type | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Max.Clamp Voltage | Max. Peak Pulse Current | Max. Reverse Leakage | Package | |
|----------|-----------|---------------------------|----------------------------------|------|--------------|-------------------|----------------------------------|----------------------|---------|----------------------|
| | | | V _{BR} @ I _T | | | | | | SMC | |
| | | | V _{RMW} | Min | Max | I _T | V _c @ I _{PP} | I _{PP} | IR@VR | Device Marking Ccode |
| UNI | BI | V | V | V | mA | V | A | uA | UNI | BI |
| SMDJ5.0A | SMDJ5.0CA | 5.0 | 6.4 | 7 | 10 | 9.2 | 326.1 | 800 | RDE | DDE |
| SMDJ6.0A | SMDJ6.0CA | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 291.3 | 800 | RDG | DDG |
| SMDJ6.5A | SMDJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 267.9 | 500 | RDK | DDK |
| SMDJ7.0A | SMDJ7.0CA | 7.0 | 7.78 | 8.6 | 10 | 12 | 250 | 200 | PDM | DDM |
| SMDJ7.5A | SMDJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 232.6 | 100 | PDP | DDP |
| SMDJ8.0A | SMDJ8.0CA | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 220.6 | 50 | PDR | DDR |
| SMDJ8.5A | SMDJ8.5CA | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 208.3 | 20 | PDT | DDT |
| SMDJ9.0A | SMDJ9.0CA | 9.0 | 10 | 11.1 | 1 | 15.4 | 194.8 | 10 | PDV | DDV |
| SMDJ10A | SMDJ10CA | 10.0 | 11.1 | 12.3 | 1 | 17 | 176.5 | 5 | PDX | DDX |
| SMDJ11A | SMDJ11CA | 11.0 | 12.2 | 13.5 | 1 | 18.2 | 164.8 | 2 | PDZ | DDZ |
| SMDJ12A | SMDJ12CA | 12.0 | 13.3 | 14.7 | 1 | 19.9 | 150.8 | 2 | PEE | DEE |
| SMDJ13A | SMDJ13CA | 13.0 | 14.4 | 15.9 | 1 | 21.5 | 139.5 | 2 | PEG | DEG |
| SMDJ14A | SMDJ14CA | 14.0 | 15.6 | 17.2 | 1 | 23.2 | 129.3 | 2 | PEK | DEK |
| SMDJ15A | SMDJ15CA | 15.0 | 16.7 | 18.5 | 1 | 24.4 | 123 | 2 | PEM | DEM |
| SMDJ16A | SMDJ16CA | 16.0 | 17.8 | 19.7 | 1 | 26 | 115.4 | 2 | PEP | DEP |
| SMDJ17A | SMDJ17CA | 17.0 | 18.9 | 20.9 | 1 | 27.6 | 108.7 | 2 | PER | DER |
| SMDJ18A | SMDJ18CA | 18.0 | 20 | 22.1 | 1 | 29.2 | 102.7 | 2 | PET | DET |
| SMDJ20A | SMDJ20CA | 20.0 | 22.2 | 24.5 | 1 | 32.4 | 92.6 | 2 | PEV | DEV |
| SMDJ22A | SMDJ22CA | 22.0 | 24.4 | 26.9 | 1 | 35.5 | 84.5 | 2 | PEX | DEX |
| SMDJ24A | SMDJ24CA | 24.0 | 26.7 | 29.5 | 1 | 38.9 | 77.1 | 2 | PEZ | DEZ |
| SMDJ26A | SMDJ26CA | 26.0 | 28.9 | 31.9 | 1 | 42.1 | 71.3 | 2 | PFE | DFE |
| SMDJ28A | SMDJ28CA | 28.0 | 31.1 | 34.4 | 1 | 45.4 | 66.1 | 2 | PFG | DFG |
| SMDJ30A | SMDJ30CA | 30.0 | 33.3 | 36.8 | 1 | 48.4 | 62 | 2 | PFK | DFK |
| SMDJ33A | SMDJ33CA | 33.0 | 36.7 | 40.6 | 1 | 53.3 | 56.3 | 2 | PFM | DFM |
| SMDJ36A | SMDJ36CA | 36.0 | 40 | 44.2 | 1 | 58.1 | 51.6 | 2 | PFP | DFP |
| SMDJ40A | SMDJ40CA | 40.0 | 44.4 | 49.1 | 1 | 64.5 | 46.5 | 2 | PFR | DFR |
| SMDJ43A | SMDJ43CA | 43.0 | 47.8 | 52.8 | 1 | 69.4 | 43.2 | 2 | PFT | DFT |
| SMDJ45A | SMDJ45CA | 45.0 | 50 | 55.3 | 1 | 72.7 | 41.3 | 2 | PFV | DFV |
| SMDJ48A | SMDJ48CA | 48.0 | 53.3 | 58.9 | 1 | 77.4 | 38.8 | 2 | PFX | DFX |
| SMDJ51A | SMDJ51CA | 51.0 | 56.7 | 62.7 | 1 | 82.4 | 36.4 | 2 | PFZ | DFZ |
| SMDJ54A | SMDJ54CA | 54.0 | 60 | 66.3 | 1 | 87.1 | 34.4 | 2 | RGE | DGE |
| SMDJ58A | SMDJ58CA | 58.0 | 64.4 | 71.2 | 1 | 93.6 | 32.1 | 2 | PGG | DGG |
| SMDJ60A | SMDJ60CA | 60.0 | 66.7 | 73.7 | 1 | 96.8 | 31 | 2 | PGK | DGK |
| SMDJ64A | SMDJ64CA | 64.0 | 71.1 | 78.6 | 1 | 103 | 29.1 | 2 | PGM | DGM |
| SMDJ70A | SMDJ70CA | 70.0 | 77.8 | 86 | 1 | 113 | 26.5 | 2 | PGP | DGP |
| SMDJ75A | SMDJ75CA | 75.0 | 83.3 | 92.1 | 1 | 121 | 24.8 | 2 | PGR | DGR |
| SMDJ78A | SMDJ78CA | 78.0 | 86.7 | 95.8 | 1 | 126 | 23.8 | 2 | PGT | DGT |
| SMDJ85A | SMDJ85CA | 85.0 | 94.4 | 104 | 1 | 137 | 21.9 | 2 | PGV | DGV |
| SMDJ90A | SMDJ90CA | 90.0 | 100 | 111 | 1 | 146 | 20.5 | 2 | PGX | DGX |
| SMDJ100A | SMDJ100CA | 100.0 | 111 | 123 | 1 | 162 | 18.5 | 2 | PGZ | DGZ |
| SMDJ110A | SMDJ110CA | 110.0 | 122 | 135 | 1 | 177 | 16.9 | 2 | PHE | DHE |
| SMDJ120A | SMDJ120CA | 120.0 | 133 | 147 | 1 | 193 | 15.5 | 2 | PHG | DHG |
| SMDJ130A | SMDJ130CA | 130.0 | 144 | 159 | 1 | 209 | 14.4 | 2 | PHK | DHK |
| SMDJ150A | SMDJ150CA | 150.0 | 167 | 185 | 1 | 243 | 12.3 | 2 | PHM | DHM |
| SMDJ160A | SMDJ160CA | 160.0 | 178 | 197 | 1 | 259 | 11.6 | 2 | PHP | DHP |
| SMDJ170A | SMDJ170CA | 170.0 | 189 | 209 | 1 | 275 | 10.9 | 2 | PHR | DHR |



Fig.1 Peak Pulse Power Rating Curve



Fig.2 Forward Current Derating Curve



Fig.3 Pulse Waveform



Fig.4 Typical Junction Capacitance

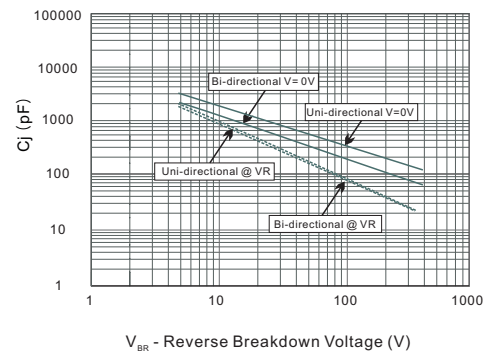


Fig.5 Steady State Power Derating Curve

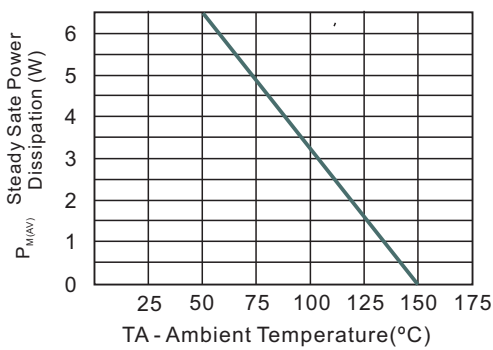


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

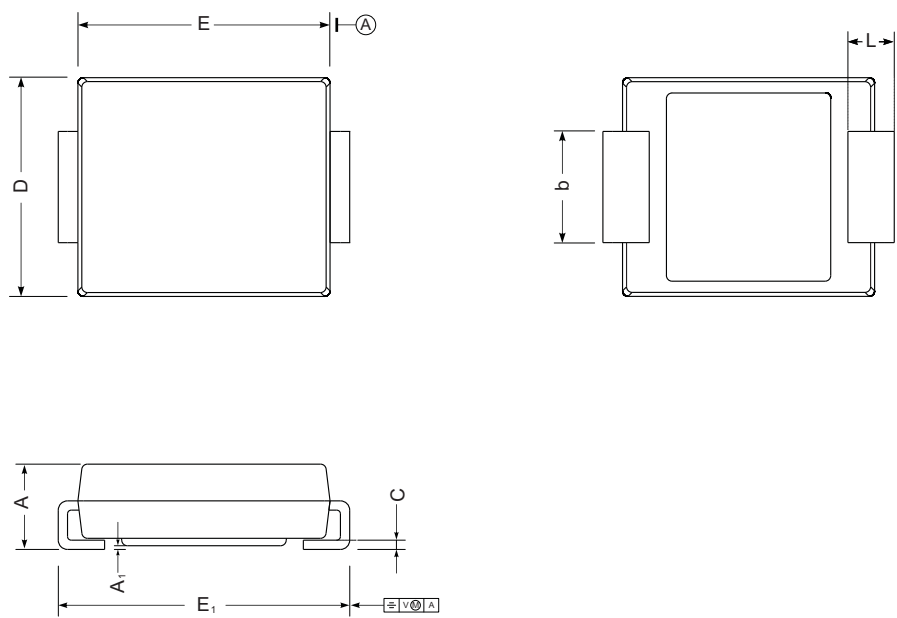




PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMC



SMC mechanical data

| UNIT | | A | E | D | E ₁ | A ₁ | C | L | b |
|------|-----|------|-----|-----|----------------|----------------|------|-----|------|
| mm | max | 2.62 | 7.0 | 6.2 | 8.0 | 0.21 | 0.31 | 1.6 | 3.25 |
| | min | 2.00 | 6.5 | 5.6 | 7.6 | 0.05 | 0.15 | 0.9 | 2.75 |
| mil | max | 103 | 276 | 244 | 315 | 8.3 | 12 | 63 | 128 |
| | min | 79 | 256 | 220 | 299 | 2.0 | 5.9 | 35 | 108 |

The recommended mounting pad size



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