

Features

- 5000W peak pulse power capability with a 10/1000 μ s waveform
- Excellent clamping capability
- Excellent clamping capability and fast response time
- Moisture sensitivity: level 1, per J-STD-020
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- IEC 61000-4-2 ESD 30kV(Air), 30kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4



DO-214AB(SMC)



RoHS
COMPLIANT

Applications

For use in sensitive electronics protection against voltage transients induced by lightning or inductive load switching. Key applications include protection of I/O interfaces, industrial and LED lighting applications, DC power buses, and other vulnerable circuits used in consumer electronics.

Mechanical Data

Case: DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|------------------|----------------|------|
| Peak Pulse Power Dissipation with a 10/1000 μ s Waveform ¹ | P _{PPM} | 5000 | W |
| Peak Pulse Current with a 10/1000 μ s Waveform ¹ | I _{PPM} | See Next Table | A |
| Maximum Instantaneous Forward Voltage @ I _{PP} = 100A | V _F | 5 | V |
| Thermal Resistance, Junction to Ambient ² | R _{θJA} | 100 | °C/W |
| Thermal Resistance, Junction to Mount ³ | R _{θJM} | 20.8 | °C/W |
| Storage Temperature Range | T _{STG} | - 55 to +150 | °C |
| Operating Junction and Temperature Range | T _J | - 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 minimum recommended pad layout

3. Mounted on infinite heat sink.

Electrical Characteristics (T_A = 25 °C unless otherwise noted)

| Part Number (Uni) | Part Number (Bi) | Marking Code | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Max Reverse Leakage Current | Max. Clamp Voltage | Peak Pulse Current |
|----------------------|---------------------|--------------|-----|---------------------------|----------------------------------|----------------|--------------|----------------------------------|-----------------------------------|--------------------|
| | | | | | V _{BR} @ I _T | | | | | |
| | | UNI | BI | | V _{WM} | I _T | | I _D @ V _{WM} | V _C @ I _{PPM} | I _{PPM} |
| | | | | | Min | Max | mA | | | |
| | | V | V | V | | | | | | |
| 5.0SMCJ11A | 5.0SMCJ11CA | JDZ | KDZ | 11 | 12.2 | 13.5 | 10 | 800 | 18.2 | 274.7 |
| 5.0SMCJ12A | 5.0SMCJ12CA | JEE | KEE | 12 | 13.3 | 14.7 | 10 | 800 | 19.9 | 252 |
| 5.0SMCJ13A | 5.0SMCJ13CA | JEG | KEG | 13 | 14.4 | 15.9 | 10 | 500 | 21.5 | 233 |
| 5.0SMCJ14A | 5.0SMCJ14CA | JEK | KEK | 14 | 15.6 | 17.2 | 10 | 200 | 23.2 | 216 |
| 5.0SMCJ15A | 5.0SMCJ15CA | JEM | KEM | 15 | 16.7 | 18.5 | 1 | 100 | 24.4 | 205 |
| 5.0SMCJ16A | 5.0SMCJ16CA | JEP | KEP | 16 | 17.8 | 19.7 | 1 | 50 | 26 | 193 |
| 5.0SMCJ17A | 5.0SMCJ17CA | JER | KER | 17 | 18.9 | 20.9 | 1 | 20 | 27.6 | 181 |
| 5.0SMCJ18A | 5.0SMCJ18CA | JET | KET | 18 | 20 | 22.1 | 1 | 10 | 29.2 | 172 |
| 5.0SMCJ20A | 5.0SMCJ20CA | JEV | KEV | 20 | 22.2 | 24.5 | 1 | 5 | 32.4 | 155 |
| 5.0SMCJ22A | 5.0SMCJ22CA | JEX | KEX | 22 | 24.4 | 26.9 | 1 | 5 | 35.5 | 141 |
| 5.0SMCJ24A | 5.0SMCJ24CA | JEZ | KEZ | 24 | 26.7 | 29.5 | 1 | 5 | 38.9 | 129 |
| 5.0SMCJ26A | 5.0SMCJ26CA | JFE | KFE | 26 | 28.9 | 31.9 | 1 | 5 | 42.1 | 119 |
| 5.0SMCJ28A | 5.0SMCJ28CA | JFG | KFG | 28 | 31.1 | 34.4 | 1 | 5 | 45.4 | 110 |
| 5.0SMCJ30A | 5.0SMCJ30CA | JFK | KFK | 30 | 33.3 | 36.8 | 1 | 5 | 48.4 | 103 |
| 5.0SMCJ33A | 5.0SMCJ33CA | JFM | KFM | 33 | 36.7 | 40.6 | 1 | 5 | 53.3 | 93.9 |
| 5.0SMCJ36A | 5.0SMCJ36CA | JFP | KFP | 36 | 40 | 44.2 | 1 | 5 | 58.1 | 86.1 |
| 5.0SMCJ40A | 5.0SMCJ40CA | JFR | KFR | 40 | 44.4 | 49.1 | 1 | 5 | 64.5 | 77.6 |
| 5.0SMCJ43A | 5.0SMCJ43CA | JFT | KFT | 43 | 47.8 | 52.8 | 1 | 5 | 69.4 | 72.1 |
| 5.0SMCJ45A | 5.0SMCJ45CA | JFV | KFV | 45 | 50 | 55.3 | 1 | 5 | 72.7 | 68.8 |
| 5.0SMCJ48A | 5.0SMCJ48CA | JFX | KFX | 48 | 53.3 | 58.9 | 1 | 5 | 77.4 | 64.6 |
| 5.0SMCJ51A | 5.0SMCJ51CA | JFZ | KFZ | 51 | 56.7 | 62.7 | 1 | 5 | 82.4 | 60.7 |
| 5.0SMCJ54A | 5.0SMCJ54CA | JGE | KGE | 54 | 60 | 66.3 | 1 | 5 | 87.1 | 57.4 |
| 5.0SMCJ58A | 5.0SMCJ58CA | JGG | KGG | 58 | 64.4 | 71.2 | 1 | 5 | 93.6 | 53.5 |
| 5.0SMCJ60A | 5.0SMCJ60CA | JGK | KGK | 60 | 66.7 | 73.7 | 1 | 5 | 96.8 | 51.7 |
| 5.0SMCJ64A | 5.0SMCJ64CA | JGM | KGM | 64 | 71.1 | 78.6 | 1 | 5 | 103 | 48.6 |
| 5.0SMCJ70A | 5.0SMCJ70CA | JGP | KGP | 70 | 77.8 | 86 | 1 | 5 | 113 | 44.3 |
| 5.0SMCJ75A | 5.0SMCJ75CA | JGR | KGR | 75 | 83.3 | 92.1 | 1 | 5 | 121 | 41.3 |
| 5.0SMCJ78A | 5.0SMCJ78CA | JGT | KGT | 78 | 86.7 | 95.8 | 1 | 5 | 126 | 39.7 |
| 5.0SMCJ85A | 5.0SMCJ85CA | JGV | KGV | 85 | 94.4 | 104 | 1 | 5 | 137 | 36.5 |
| 5.0SMCJ90A | 5.0SMCJ90CA | JGX | KGX | 90 | 100 | 111 | 1 | 5 | 146 | 34.3 |
| 5.0SMCJ100A | 5.0SMCJ100CA | JGZ | KGZ | 100 | 111 | 123 | 1 | 5 | 162 | 30.9 |
| 5.0SMCJ110A | 5.0SMCJ110CA | JHE | KHE | 110 | 122 | 135 | 1 | 5 | 177 | 28.3 |
| 5.0SMCJ120A | 5.0SMCJ120CA | JHG | KHG | 120 | 133 | 147 | 1 | 5 | 193 | 25.9 |
| 5.0SMCJ130A | 5.0SMCJ130CA | JHK | KHK | 130 | 144 | 159 | 1 | 5 | 209 | 23.9 |
| 5.0SMCJ140A | 5.0SMCJ140CA | JHB | KHB | 140 | 156 | 171 | 1 | 5 | 226 | 22.2 |
| 5.0SMCJ150A | 5.0SMCJ150CA | JHM | KHM | 150 | 167 | 185 | 1 | 5 | 243 | 20.6 |
| 5.0SMCJ160A | 5.0SMCJ160CA | JHP | KHP | 160 | 178 | 197 | 1 | 5 | 259 | 19.3 |
| 5.0SMCJ170A | 5.0SMCJ170CA | JHR | KHR | 170 | 189 | 209 | 1 | 5 | 275 | 18.2 |

Ratings and Characteristic Curves (T_A = 25 °C unless otherwise noted)

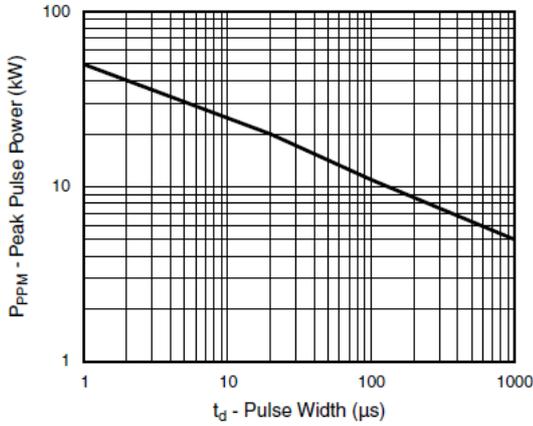


Figure 1. Peak Pulse Power Rating Curve

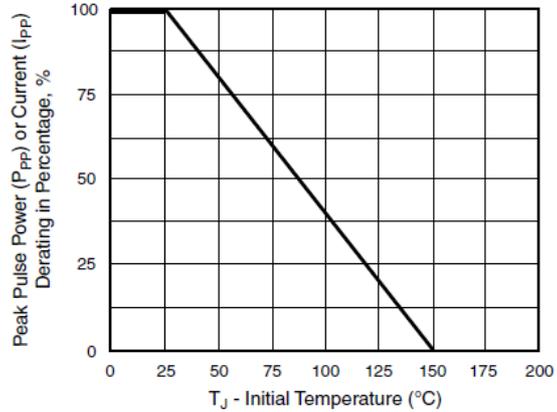


Figure 2. Pulse Power or Current Vs. Initial Junction Temperature

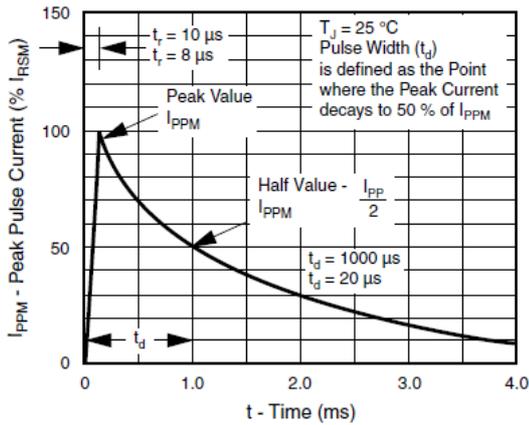


Figure 3. Pulse Waveform

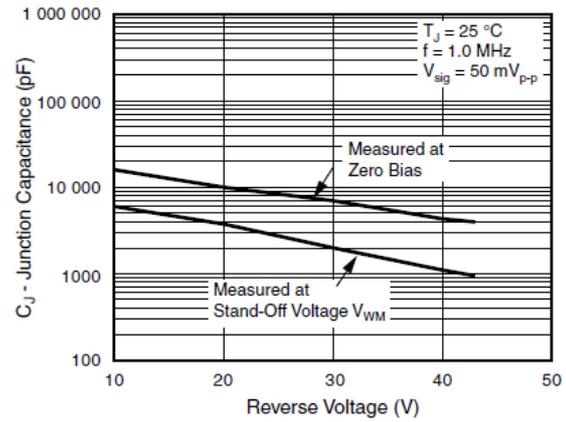


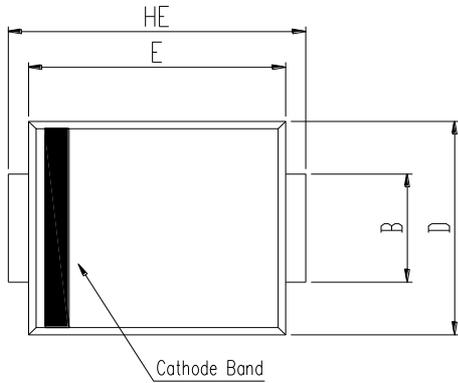
Figure 4 Typical Junction Capacitance

5.0SMCJx Series

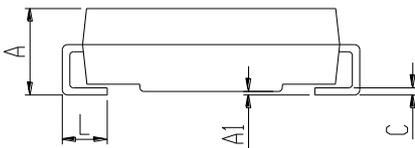
Transient Voltage Suppressors

Peak Pulse Power 5000W Stand-off Voltage 11V to 170V

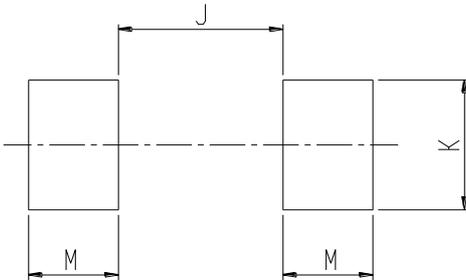
Package Outline Dimensions DO-214AB(SMC)



| DIM | SMC (DO-214AB) | | | |
|-----|----------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 2.00 | 2.62 | 0.079 | 0.103 |
| A1 | 0.00 | 0.20 | 0.000 | 0.008 |
| B | 2.92 | 3.07 | 0.115 | 0.121 |
| C | 0.15 | 0.31 | 0.006 | 0.012 |
| D | 5.59 | 6.22 | 0.220 | 0.245 |
| E | 6.60 | 7.11 | 0.260 | 0.280 |
| HE | 7.75 | 8.13 | 0.305 | 0.320 |
| L | 0.76 | 1.52 | 0.030 | 0.060 |



Recommended Pad Layout



| DIM | Recommended Pad Layout (Reference ONLY) | | | |
|-----|---|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| J | - | 4.60 | - | 0.181 |
| K | 3.20 | - | 0.126 | - |
| M | 2.00 | - | 0.079 | - |