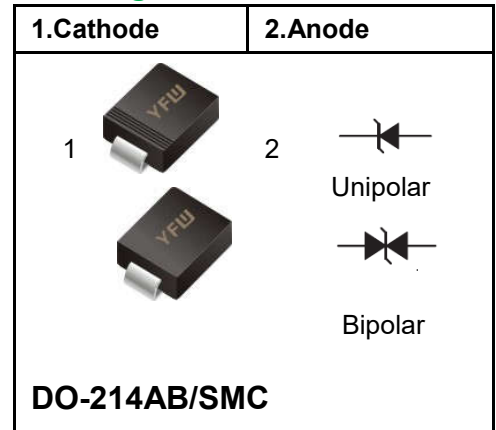


**Surface Mount Transient Voltage Suppressor Power
5000Watts
Stand-Off Voltage: 12V~170V**

Pinning



FEATURES

- ◆Peak power dissipation 5000w @10 x 1000 us Pulse
- ◆Low profile package.
- ◆Excellent clamping capability.
- ◆Typical I_R less than 5uA when V_{BR} above 22V.
- ◆Glass passivated junction.
- ◆Fast response time: typically less than 1.0ps from 0 Volts to BV min
- ◆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
- ◆Halogen free and ROHS compliant
- ◆Lead-free finish

MECHANICAL CHARACTERISTICS

- ◆Case: SMC (DO-214AB) Molded Plastic over glass passivated junction.
- ◆Mounting Position: Any
- ◆Polarity: by cathode band denotes UNI-directional device, none cathode band denotes bi-directional device.
- ◆Terminal: Solder plated



Maximum Ratings and Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|----------------|----------------|------------------|
| Peak Pulse Power Dissipation on 10/1000 us waveform (Note 1, 2, FIG.1) | P_{PPM} | 5000 | W |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2, 3) | I_{FSM} | 300 | A |
| Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3) | I_{PPM} | See Next Table | A |
| Power dissipation on Infinite heat sink at $T_L=50\text{ }^\circ\text{C}$ | P_D | 6.5 | W |
| Operating Junction Temperature and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25\text{ }^\circ\text{C}$ per Fig.2.
2. Mounted on $8.0 \times 8.0 \text{ mm}^2$ (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

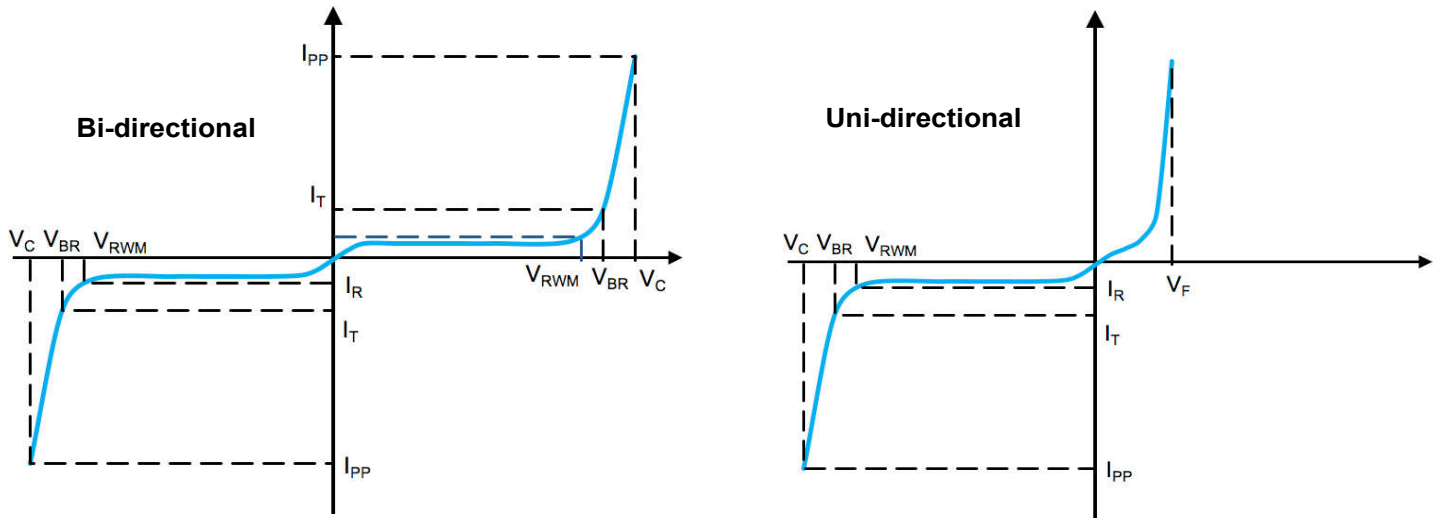
Electrical Specification @ Tamb 25°C

| Type Number | | Marking | | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I _T | Breakdown Voltage Max. @ I _T | Test Current | Maximum Clamping Voltage @I _{PP} | Peak Pulse Current | Reverse Leakage @V _{RMW} |
|-------------|--------------|---------|------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni) | (Bi) | (Uni) | (Bi) | V _{RMW} (V) | V _{BR MIN} (V) | V _{BR MAX} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (μ A) |
| 5.0SMDJ12A | 5.0SMDJ12CA | 5PEP | 5BEP | 12.0 | 13.30 | 14.70 | 10 | 19.9 | 252.00 | 800 |
| 5.0SMDJ13A | 5.0SMDJ13CA | 5PEQ | 5BEQ | 13.0 | 14.40 | 15.90 | 10 | 21.5 | 233.00 | 500 |
| 5.0SMDJ14A | 5.0SMDJ14CA | 5PER | 5BER | 14.0 | 15.60 | 17.20 | 10 | 23.2 | 216.00 | 200 |
| 5.0SMDJ15A | 5.0SMDJ15CA | 5PES | 5BES | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 205.00 | 100 |
| 5.0SMDJ16A | 5.0SMDJ16CA | 5PET | 5BET | 16.0 | 17.80 | 20.50 | 1 | 26.0 | 193.00 | 50 |
| 5.0SMDJ17A | 5.0SMDJ17CA | 5PEU | 5BEU | 17.0 | 18.90 | 20.90 | 1 | 27.6 | 181.00 | 20 |
| 5.0SMDJ18A | 5.0SMDJ18CA | 5PEV | 5BEV | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 172.00 | 10 |
| 5.0SMDJ20A | 5.0SMDJ20CA | 5PEW | 5BEW | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 155.00 | 5 |
| 5.0SMDJ22A | 5.0SMDJ22CA | 5PEX | 5BEX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 141.00 | 5 |
| 5.0SMDJ24A | 5.0SMDJ24CA | 5PEZ | 5BEZ | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 129.00 | 5 |
| 5.0SMDJ26A | 5.0SMDJ26CA | 5PFE | 5BFE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 119.00 | 5 |
| 5.0SMDJ28A | 5.0SMDJ28CA | 5PFG | 5BFG | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 110.00 | 5 |
| 5.0SMDJ30A | 5.0SMDJ30CA | 5PFK | 5BFK | 30.0 | 33.30 | 36.80 | 1 | 48.4 | 103.00 | 5 |
| 5.0SMDJ33A | 5.0SMDJ33CA | 5PFM | 5BFM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 93.90 | 5 |
| 5.0SMDJ36A | 5.0SMDJ36CA | 5PFP | 5BFP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 86.10 | 5 |
| 5.0SMDJ40A | 5.0SMDJ40CA | 5PFR | 5BFR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 77.60 | 5 |
| 5.0SMDJ43A | 5.0SMDJ43CA | 5PFT | 5BFT | 43.0 | 47.80 | 52.80 | 1 | 69.4 | 72.10 | 5 |
| 5.0SMDJ45A | 5.0SMDJ45CA | 5PFV | 5BFV | 45.0 | 50.00 | 55.30 | 1 | 72.7 | 68.80 | 5 |
| 5.0SMDJ48A | 5.0SMDJ48CA | 5PFX | 5BFX | 48.0 | 53.30 | 58.90 | 1 | 77.4 | 64.70 | 5 |
| 5.0SMDJ51A | 5.0SMDJ51CA | 5PFZ | 5BFZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 60.70 | 5 |
| 5.0SMDJ54A | 5.0SMDJ54CA | 5PGE | 5BGE | 54.0 | 60.00 | 66.30 | 1 | 87.1 | 57.50 | 5 |
| 5.0SMDJ58A | 5.0SMDJ58CA | 5PGG | 5BGG | 58.0 | 64.40 | 71.20 | 1 | 93.6 | 53.50 | 5 |
| 5.0SMDJ60A | 5.0SMDJ60CA | 5PGK | 5BGK | 60.0 | 66.70 | 73.70 | 1 | 96.8 | 51.70 | 5 |
| 5.0SMDJ64A | 5.0SMDJ64CA | 5PGM | 5BGM | 64.0 | 71.10 | 78.60 | 1 | 103.0 | 48.60 | 5 |
| 5.0SMDJ70A | 5.0SMDJ70CA | 5PGP | 5BGP | 70.0 | 77.80 | 86.00 | 1 | 113.0 | 44.30 | 5 |
| 5.0SMDJ75A | 5.0SMDJ75CA | 5PGR | 5BGR | 75.0 | 83.00 | 92.10 | 1 | 121.0 | 41.40 | 5 |
| 5.0SMDJ78A | 5.0SMDJ78CA | 5PGT | 5BGT | 78.0 | 86.00 | 95.80 | 1 | 126.0 | 39.70 | 5 |
| 5.0SMDJ85A | 5.0SMDJ85CA | 5PGV | 5BGV | 85.0 | 94.00 | 104.00 | 1 | 137.0 | 36.50 | 5 |
| 5.0SMDJ90A | 5.0SMDJ90CA | 5PGX | 5BGX | 90.0 | 100.00 | 111.00 | 1 | 146.0 | 34.30 | 5 |
| 5.0SMDJ100A | 5.0SMDJ100CA | 5PGZ | 5BGZ | 100.0 | 111.00 | 123.00 | 1 | 162.0 | 30.90 | 5 |
| 5.0SMDJ110A | 5.0SMDJ110CA | 5PHE | 5BHE | 110.0 | 122.00 | 135.00 | 1 | 177.0 | 28.30 | 5 |
| 5.0SMDJ120A | 5.0SMDJ120CA | 5PHG | 5BHG | 120.0 | 133.00 | 147.00 | 1 | 193.0 | 26.00 | 5 |
| 5.0SMDJ130A | 5.0SMDJ130CA | 5PHK | 5BHK | 130.0 | 144.00 | 159.00 | 1 | 209.0 | 24.00 | 5 |
| 5.0SMDJ150A | 5.0SMDJ150CA | 5PHM | 5BHM | 150.0 | 167.00 | 185.00 | 1 | 243.0 | 20.60 | 5 |
| 5.0SMDJ160A | 5.0SMDJ160CA | 5PHP | 5BHP | 160.0 | 178.00 | 197.00 | 1 | 259.0 | 19.30 | 5 |
| 5.0SMDJ170A | 5.0SMDJ170CA | 5PHR | 5BHR | 170.0 | 189.00 | 209.00 | 1 | 275.0 | 18.20 | 5 |

※ For Bi-directional type having V_{RMW} of 20 Volts and less, the I_R limit is double

※ For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

I-V Curve Characteristics



- P_{PPM} Peak Pulse Power Dissipation** - Max power dissipation
- V_{RWM} Reverse Stand-off Voltage** - Maximum voltage that can be applied to TVS without operation
- V_{BR} Breakdown Voltage** – Maximum voltage that flows though the TVS at a specified current (I_T)
- V_C Clamping Voltage** – Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)
- I_R Reverse Leakage Current** – Current measured at V_R
- V_F Forward Voltage Drop for Uni-directional**



Fig.1 - Peak Pulse Power Rating

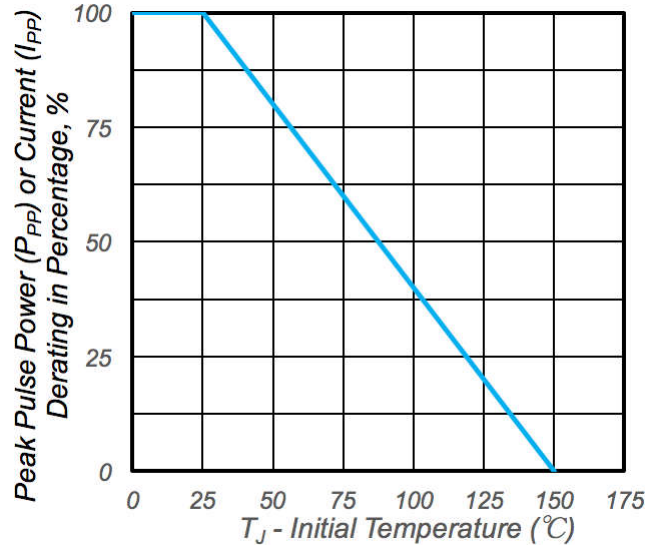


Fig.2 - Pulse Derating Curve



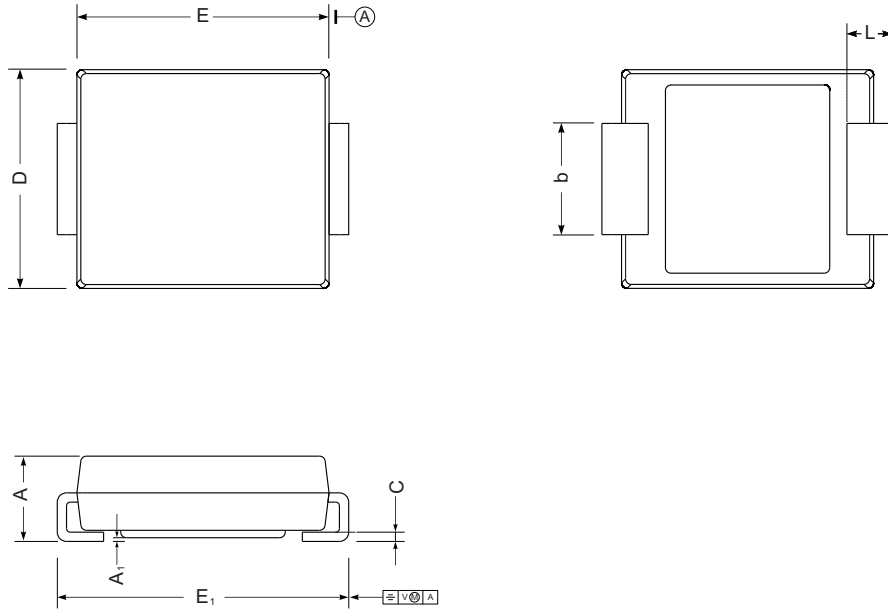
Fig.3 - Pulse Waveform



Fig.4 - Typical Junction Capacitance

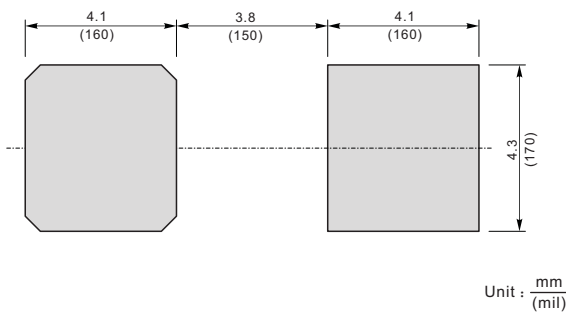
Package Outline DO-214AB SMC

Plastic surface mounted package; 2 leads



| 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



Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|--------------|---------------------|------------------|-------------------|
| DO-214AB SMC | Tape/Reel, 13" reel | 3000 | EIA-481-1 |