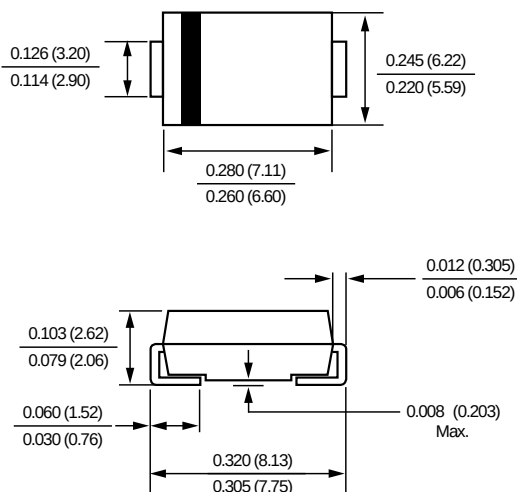
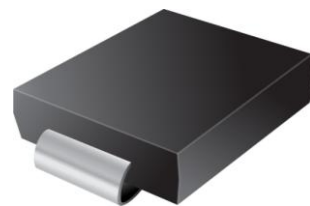




### DO-214AB(SMC)

Dimensions in inches and (millimeters)



#### Ordering Information

| Part Number   | Compound     |
|---------------|--------------|
| SMDJ SERIES   | General      |
| SMDJ SERIES-H | Halogen Free |
| SMDJ SERIES-Q | Automotive   |

#### PRIMARY CHARACTERISTICS

|                    |          |
|--------------------|----------|
| V <sub>BR</sub>    | 5.0~440V |
| P <sub>PPM</sub>   | 3000W    |
| P <sub>D</sub>     | 6W       |
| T <sub>J</sub> max | 150°C    |

#### Features

- Constructed with Glass Passivated Die
- 3000W peak pulse power Dissipation
- Excellent clamping capability
- Uni and Bidirectional unit
- Very fast response time
- Component in accordance to RoHS 2002/95/EC
- AEC-Q101 Qualified

#### Mechanical Data

- Cases: DO-214AB(SMC)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead free Plating (Tin Finish)  
Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.231 grams (approximate)

#### MAXIMUM RATINGS (TA=25°C unless otherwise noted)

| PARAMETER                                                                      | SYMBOL                            | VALUE        | UNIT |
|--------------------------------------------------------------------------------|-----------------------------------|--------------|------|
| Peak power dissipation with a 10/1000μs waveform                               | P <sub>PP</sub>                   | Minimum 3000 | W    |
| Power dissipation on infinite heatsink at TL=75°C                              | P <sub>D</sub>                    | 6            | W    |
| Peak forward surge current, 8.3ms single half sine-wave unidirectional only(1) | I <sub>FSM</sub>                  | 300          | A    |
| Maximum instantaneous forward voltage at 100 A for unidirectional only(2)      | V <sub>F</sub>                    | 3.5 / 5.0    | V    |
| Operating and Storage Temperature Range                                        | T <sub>J</sub> , T <sub>STG</sub> | -55 ~ +150   | °C   |

Note:

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

(2) V<sub>F</sub> < 3.5V for devices of V<sub>BR</sub> < 200V and V<sub>F</sub> < 5.0V for devices of V<sub>BR</sub> > 201V



# SMDJ SERIES



## Transient Voltage Suppressors(3000W)

| Part Number |           | Marking Code |          | Reverse Stand-off Voltage | Breakdown Voltage Min@I <sub>T</sub> | Breakdown Voltage Max@I <sub>T</sub> | Test Current   | Max Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> | Peak Pulse Current | Reverse Leakage I <sub>R</sub> @V <sub>RRM</sub> |
|-------------|-----------|--------------|----------|---------------------------|--------------------------------------|--------------------------------------|----------------|------------------------------------------------------|--------------------|--------------------------------------------------|
| DIRECTIONAL |           | DIRECTIONAL  |          | V <sub>RRM</sub>          | V <sub>BR</sub>                      | V <sub>BR</sub>                      | I <sub>T</sub> | V <sub>C</sub>                                       | I <sub>PP</sub>    | I <sub>R</sub>                                   |
| UNI         | BI        | UNI          | BI       | V                         | V                                    | V                                    | mA             | V                                                    | A                  | uA                                               |
| SMDJ5.0A    | SMDJ5.0CA | 3DJ5.0A      | 3DJ5.0CA | 5.0                       | 6.40                                 | 7.00                                 | 10.0           | 9.2                                                  | 326.09             | 1000                                             |
| SMDJ6.0A    | SMDJ6.0CA | 3DJ6.0A      | 3DJ6.0CA | 6.0                       | 6.67                                 | 7.37                                 | 10.0           | 10.3                                                 | 291.26             | 1000                                             |
| SMDJ6.5A    | SMDJ6.5CA | 3DJ6.5A      | 3DJ6.5CA | 6.5                       | 7.22                                 | 7.98                                 | 10.0           | 11.2                                                 | 267.86             | 500                                              |
| SMDJ7.0A    | SMDJ7.0CA | 3DJ7.0A      | 3DJ7.0CA | 7.0                       | 7.78                                 | 8.60                                 | 10.0           | 12.0                                                 | 250.00             | 200                                              |
| SMDJ7.5A    | SMDJ7.5CA | 3DJ7.5A      | 3DJ7.5CA | 7.5                       | 8.33                                 | 9.21                                 | 1.0            | 12.9                                                 | 232.56             | 100                                              |
| SMDJ8.0A    | SMDJ8.0CA | 3DJ8.0A      | 3DJ8.0CA | 8.0                       | 8.89                                 | 9.83                                 | 1.0            | 13.6                                                 | 220.59             | 50                                               |
| SMDJ8.5A    | SMDJ8.5CA | 3DJ8.5A      | 3DJ8.5CA | 8.5                       | 9.44                                 | 10.40                                | 1.0            | 14.4                                                 | 208.33             | 25                                               |
| SMDJ9.0A    | SMDJ9.0CA | 3DJ9.0A      | 3DJ9.0CA | 9.0                       | 10.00                                | 11.10                                | 1.0            | 15.4                                                 | 194.87             | 10                                               |
| SMDJ10A     | SMDJ10CA  | 3DJ10A       | 3DJ10CA  | 10.0                      | 11.10                                | 12.30                                | 1.0            | 17.0                                                 | 176.47             | 5                                                |
| SMDJ11A     | SMDJ11CA  | 3DJ11A       | 3DJ11CA  | 11.0                      | 12.20                                | 13.50                                | 1.0            | 18.2                                                 | 164.84             | 5                                                |
| SMDJ12A     | SMDJ12CA  | 3DJ12A       | 3DJ12CA  | 12.0                      | 13.30                                | 14.70                                | 1.0            | 19.9                                                 | 150.75             | 5                                                |
| SMDJ13A     | SMDJ13CA  | 3DJ13A       | 3DJ13CA  | 13.0                      | 14.40                                | 15.90                                | 1.0            | 21.5                                                 | 139.53             | 5                                                |
| SMDJ14A     | SMDJ14CA  | 3DJ14A       | 3DJ14CA  | 14.0                      | 15.60                                | 17.20                                | 1.0            | 23.2                                                 | 129.31             | 5                                                |
| SMDJ15A     | SMDJ15CA  | 3DJ15A       | 3DJ15CA  | 15.0                      | 16.70                                | 18.50                                | 1.0            | 24.4                                                 | 122.95             | 5                                                |
| SMDJ16A     | SMDJ16CA  | 3DJ16A       | 3DJ16CA  | 16.0                      | 17.80                                | 19.70                                | 1.0            | 26.0                                                 | 115.38             | 5                                                |
| SMDJ17A     | SMDJ17CA  | 3DJ17A       | 3DJ17CA  | 17.0                      | 18.90                                | 20.90                                | 1.0            | 27.6                                                 | 108.70             | 5                                                |
| SMDJ18A     | SMDJ18CA  | 3DJ18A       | 3DJ18CA  | 18.0                      | 20.00                                | 22.10                                | 1.0            | 29.2                                                 | 102.74             | 5                                                |
| SMDJ19A     | SMDJ19CA  | 3DJ19A       | 3DJ19CA  | 19.0                      | 21.13                                | 23.30                                | 1.0            | 30.8                                                 | 97.50              | 5                                                |
| SMDJ20A     | SMDJ20CA  | 3DJ20A       | 3DJ20CA  | 20.0                      | 22.20                                | 24.50                                | 1.0            | 32.4                                                 | 97.47              | 5                                                |
| SMDJ22A     | SMDJ22CA  | 3DJ22A       | 3DJ22CA  | 22.0                      | 24.40                                | 26.90                                | 1.0            | 35.5                                                 | 84.51              | 5                                                |
| SMDJ24A     | SMDJ24CA  | 3DJ24A       | 3DJ24CA  | 24.0                      | 26.70                                | 29.50                                | 1.0            | 38.9                                                 | 77.12              | 5                                                |
| SMDJ26A     | SMDJ26CA  | 3DJ26A       | 3DJ26CA  | 26.0                      | 28.90                                | 31.90                                | 1.0            | 42.1                                                 | 71.26              | 5                                                |
| SMDJ28A     | SMDJ28CA  | 3DJ28A       | 3DJ28CA  | 28.0                      | 31.10                                | 34.40                                | 1.0            | 45.4                                                 | 66.08              | 5                                                |
| SMDJ30A     | SMDJ30CA  | 3DJ30A       | 3DJ30CA  | 30.0                      | 33.30                                | 36.80                                | 1.0            | 48.4                                                 | 61.98              | 5                                                |
| SMDJ33A     | SMDJ33CA  | 3DJ33A       | 3DJ33CA  | 33.0                      | 36.70                                | 40.60                                | 1.0            | 53.3                                                 | 56.29              | 5                                                |
| SMDJ36A     | SMDJ36CA  | 3DJ36A       | 3DJ36CA  | 36.0                      | 40.00                                | 44.20                                | 1.0            | 58.1                                                 | 51.64              | 5                                                |
| SMDJ40A     | SMDJ40CA  | 3DJ40A       | 3DJ40CA  | 40.0                      | 44.40                                | 49.10                                | 1.0            | 64.5                                                 | 46.51              | 5                                                |
| SMDJ43A     | SMDJ43CA  | 3DJ43A       | 3DJ43CA  | 43.0                      | 47.80                                | 52.80                                | 1.0            | 69.4                                                 | 43.23              | 5                                                |
| SMDJ45A     | SMDJ45CA  | 3DJ45A       | 3DJ45CA  | 45.0                      | 50.00                                | 55.30                                | 1.0            | 72.7                                                 | 41.27              | 5                                                |
| SMDJ48A     | SMDJ48CA  | 3DJ48A       | 3DJ48CA  | 48.0                      | 53.30                                | 58.90                                | 1.0            | 77.4                                                 | 38.76              | 5                                                |
| SMDJ51A     | SMDJ51CA  | 3DJ51A       | 3DJ51CA  | 51.0                      | 56.70                                | 62.70                                | 1.0            | 82.4                                                 | 36.41              | 5                                                |
| SMDJ54A     | SMDJ54CA  | 3DJ54A       | 3DJ54CA  | 54.0                      | 60.00                                | 66.30                                | 1.0            | 87.1                                                 | 34.44              | 5                                                |
| SMDJ58A     | SMDJ58CA  | 3DJ58A       | 3DJ58CA  | 58.0                      | 64.40                                | 71.20                                | 1.0            | 93.6                                                 | 32.05              | 5                                                |
| SMDJ60A     | SMDJ60CA  | 3DJ60A       | 3DJ60CA  | 60.0                      | 66.70                                | 73.70                                | 1.0            | 96.8                                                 | 30.99              | 5                                                |
| SMDJ64A     | SMDJ64CA  | 3DJ64A       | 3DJ64CA  | 64.0                      | 71.10                                | 78.60                                | 1.0            | 103.0                                                | 29.13              | 5                                                |
| SMDJ70A     | SMDJ70CA  | 3DJ70A       | 3DJ70CA  | 70.0                      | 77.80                                | 86.00                                | 1.0            | 113.0                                                | 26.55              | 5                                                |
| SMDJ75A     | SMDJ75CA  | 3DJ75A       | 3DJ75CA  | 75.0                      | 83.30                                | 92.10                                | 1.0            | 121.0                                                | 24.79              | 5                                                |
| SMDJ78A     | SMDJ78CA  | 3DJ78A       | 3DJ78CA  | 78.0                      | 86.70                                | 95.80                                | 1.0            | 126.0                                                | 23.81              | 5                                                |
| SMDJ80A     | SMDJ80CA  | 3DJ80A       | 3DJ80CA  | 80.0                      | 88.80                                | 97.60                                | 1.0            | 129.6                                                | 23.15              | 5                                                |
| SMDJ85A     | SMDJ85CA  | 3DJ85A       | 3DJ85CA  | 85.0                      | 94.40                                | 104.00                               | 1.0            | 137.0                                                | 21.90              | 5                                                |
| SMDJ90A     | SMDJ90CA  | 3DJ90A       | 3DJ90CA  | 90.0                      | 100.00                               | 111.00                               | 1.0            | 146.0                                                | 20.55              | 5                                                |



# SMDJ SERIES



## Transient Voltage Suppressors(3000W)

| Part Number |           | Marking Code |          | Reverse Stand-off Voltage | Breakdown Voltage Min@I <sub>T</sub> | Breakdown Voltage Max@I <sub>T</sub> | Test Current   | Max Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> | Peak Pulse Current | Reverse Leakage I <sub>R</sub> @V <sub>RRM</sub> |
|-------------|-----------|--------------|----------|---------------------------|--------------------------------------|--------------------------------------|----------------|------------------------------------------------------|--------------------|--------------------------------------------------|
| DIRECTIONAL |           | DIRECTIONAL  |          | V <sub>RRM</sub>          | V <sub>BR</sub>                      | V <sub>BR</sub>                      | I <sub>T</sub> | V <sub>C</sub>                                       | I <sub>PP</sub>    | I <sub>R</sub>                                   |
| UNI         | BI        | UNI          | BI       | V                         | V                                    | V                                    | mA             | V                                                    | A                  | uA                                               |
| SMDJ100A    | SMDJ100CA | 3DJ100A      | 3DJ100CA | 100.0                     | 111.00                               | 123.00                               | 1.0            | 162.0                                                | 18.52              | 5                                                |
| SMDJ110A    | SMDJ110CA | 3DJ110A      | 3DJ110CA | 110.0                     | 122.00                               | 135.00                               | 1.0            | 177.0                                                | 16.95              | 5                                                |
| SMDJ120A    | SMDJ120CA | 3DJ120A      | 3DJ120CA | 120.0                     | 133.00                               | 147.00                               | 1.0            | 193.0                                                | 15.54              | 5                                                |
| SMDJ130A    | SMDJ130CA | 3DJ130A      | 3DJ130CA | 130.0                     | 144.00                               | 159.00                               | 1.0            | 209.0                                                | 14.35              | 5                                                |
| SMDJ140A    | SMDJ140CA | 3DJ140A      | 3DJ140CA | 140.0                     | 155.00                               | 171.00                               | 1.0            | 226.8                                                | 13.23              | 5                                                |
| SMDJ150A    | SMDJ150CA | 3DJ150A      | 3DJ150CA | 150.0                     | 167.00                               | 185.00                               | 1.0            | 243.0                                                | 12.35              | 5                                                |
| SMDJ160A    | SMDJ160CA | 3DJ160A      | 3DJ160CA | 160.0                     | 178.00                               | 197.00                               | 1.0            | 259.0                                                | 11.58              | 5                                                |
| SMDJ170A    | SMDJ170CA | 3DJ170A      | 3DJ170CA | 170.0                     | 189.00                               | 209.00                               | 1.0            | 275.0                                                | 10.91              | 5                                                |
| SMDJ180A    | SMDJ180CA | 3DJ180A      | 3DJ180CA | 180.0                     | 200.00                               | 220.00                               | 1.0            | 291.6                                                | 10.29              | 5                                                |
| SMDJ190A    | SMDJ190CA | 3DJ190A      | 3DJ190CA | 190.0                     | 211.00                               | 232.00                               | 1.0            | 307.8                                                | 9.75               | 5                                                |
| SMDJ200A    | SMDJ200CA | 3DJ200A      | 3DJ200CA | 200.0                     | 224.00                               | 247.00                               | 1.0            | 324.0                                                | 9.26               | 5                                                |
| SMDJ220A    | SMDJ220CA | 3DJ220A      | 3DJ220CA | 220.0                     | 246.00                               | 272.00                               | 1.0            | 356.0                                                | 8.43               | 5                                                |
| SMDJ250A    | SMDJ250CA | 3DJ250A      | 3DJ250CA | 250.0                     | 279.00                               | 309.00                               | 1.0            | 405.0                                                | 7.41               | 5                                                |
| SMDJ300A    | SMDJ300CA | 3DJ300A      | 3DJ300CA | 300.0                     | 335.00                               | 371.00                               | 1.0            | 486.0                                                | 6.17               | 5                                                |
| SMDJ350A    | SMDJ350CA | 3DJ350A      | 3DJ350CA | 350.0                     | 391.00                               | 432.00                               | 1.0            | 567.0                                                | 5.29               | 5                                                |
| SMDJ400A    | SMDJ400CA | 3DJ400A      | 3DJ400CA | 400.0                     | 447.00                               | 494.00                               | 1.0            | 648.0                                                | 4.63               | 5                                                |
| SMDJ440A    | SMDJ440CA | 3DJ440A      | 3DJ440CA | 440.0                     | 492.00                               | 543.00                               | 1.0            | 713.0                                                | 4.21               | 5                                                |

Note:

1. Suffix 'A ' denotes 5% tolerance device.
2. Add suffix ' CA ' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .

Fig. 1 - Pulse Derating Curve

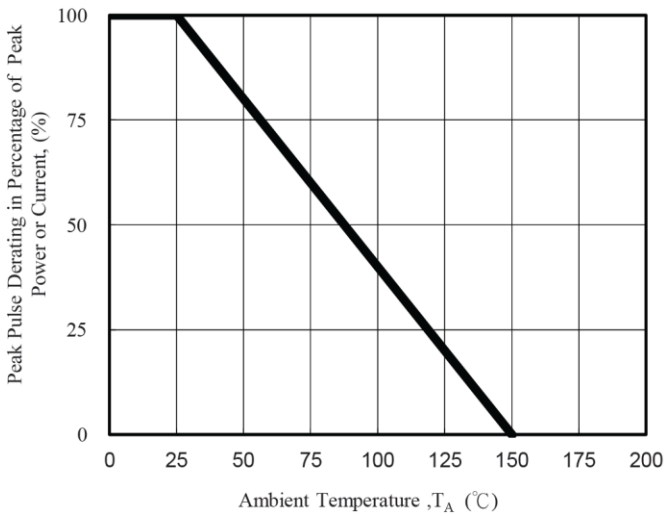


Fig. 2 - Maximum Non-Repetitive Surge Current

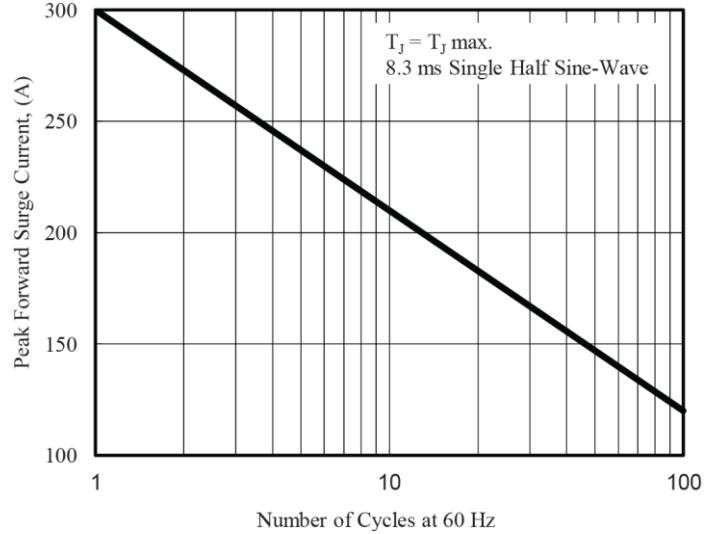


Fig. 3 - Steady State Power Derating Curve

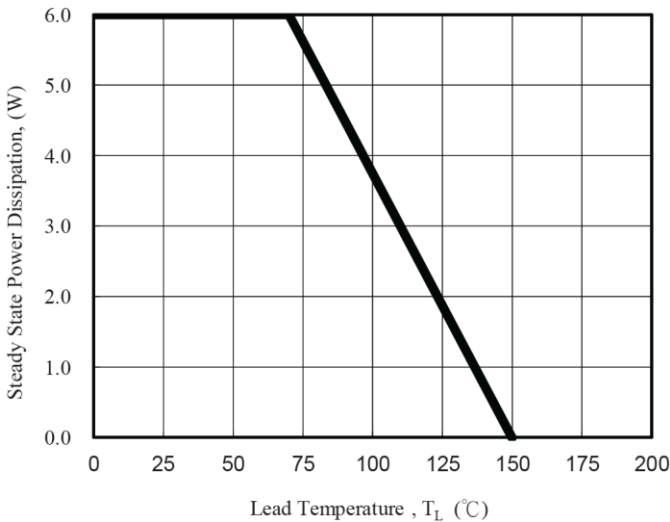


Fig. 4 - Peak Pulse Power Rating Curve

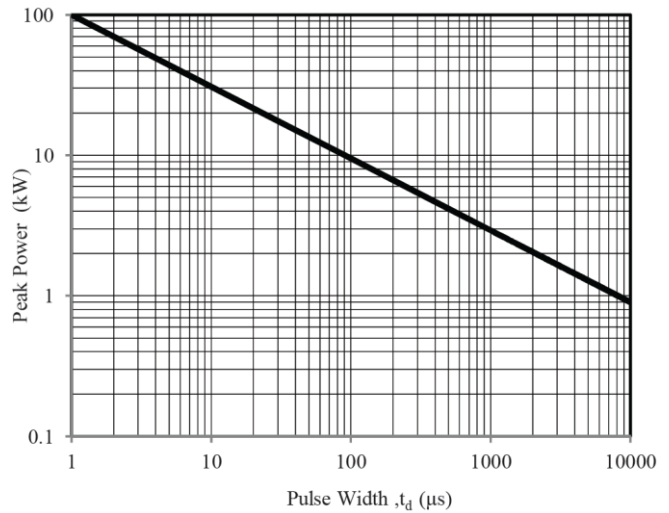


Fig. 5 - Pulse Waveform

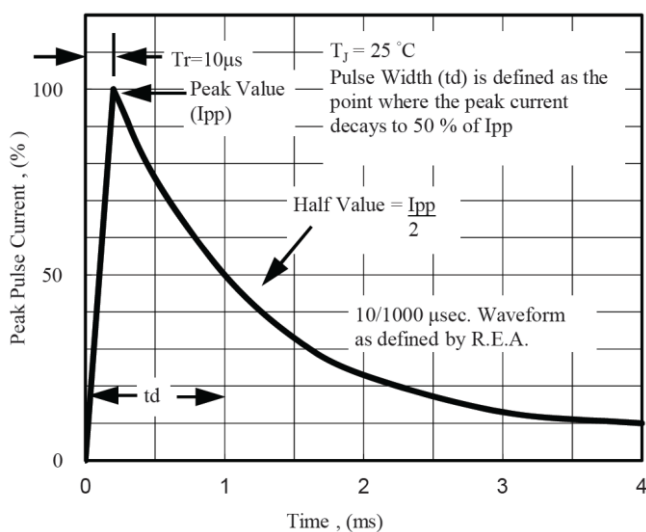


Fig. 6 - Typical junction Capacitance

