

# Silicon Avalanche Diodes

## 1500W Surface Mount Transient Voltage Suppressors

**NEW** **RoHS** **SMCJ Series**

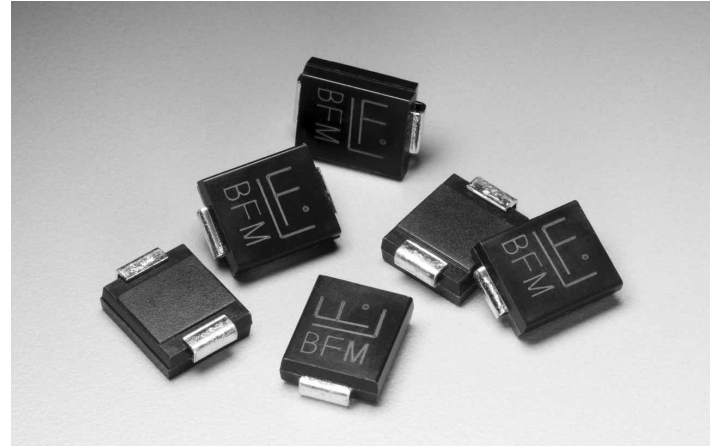


### FEATURES

- RoHS compliant
- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition Rate(duty cycle): 0.05%
- Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- Typical IR less than 1mA above 10V
- High temperature soldering: 250°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-O

**Agency Approvals:** Recognized under the Components Program of Underwriters Laboratories.

**Agency File Number:** E128662



### MAXIMUM RATINGS AND CHARACTERISTICS

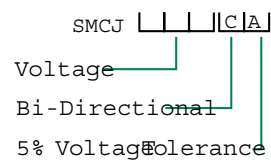
@25°C AMBIENT TEMPERATURE (unless otherwise noted)

| PARAMETER   | SYMBOL                            | VALUE       | UNIT  |
|---|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation on 10/1000µs waveform (note 1,2,FIG.1)   | P <sub>ppM</sub>                  | Min<br>1500 | Watts |
| Peak Pulse Current of on 10/1000µs waveform (note 1,FIG.3)  | I <sub>ppM</sub>                  | See Table 1 | Amps  |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load, (JEDEC Method) (note 2,3) | I <sub>FSM</sub>                  | 200         | Amps  |
| Operating junction and Storage Temperature Range  | T <sub>j</sub> , T <sub>sTG</sub> | -55 to +150 | °C    |

Notes:

1. Non-repetitive current pulse , per Fig. 3 and derated above T<sub>A</sub>=25°C per Fig 2
2. Mounted on 8.0mm<sup>2</sup>.Copper Pads to each terminal
3. 8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

### ORDERING INFORMATION



Tape and reeled (3000 pcs)

### Mechanical Specifications:

- Weight:** 0.007ounce, 0.21 gram  
**Case:** JEDEC DO-214AB Molded Plastic over glass passivated junction  
**Mounting Position:** Any  
**Polarity:** Color band denotes cathode except Bidirectional  
**Terminal:** Solder Plated, solderable per MIL-STD-750, Method 2026  
**Standard Packaging:** 16mm tape (EIA STD RS-481)

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## 1500W Surface Mount Transient Voltage Suppressors

### RoHS SMCJ Series

#### ELECTRICAL SPECIFICATION @ Tamb 25°C

| Part Number (Uni) | Part Number (Bi) | Device Marking Code |     | Reverse Stand off Voltage $V_R$ (Volts) | Breakdown Voltage $V_{BR}$ (Volts) @ $I_T$ |        | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C @ I_{PP}$ (Volts) | Maximum Peak Pulse Current $I_{PP}$ (A) | Maximum Reverse Leakage $I_R @ V_R$ ( $\mu$ A) |
|-------------------|------------------|---------------------|-----|---|--|--------|-------------------------|---|---|--|
|                   |                  | UNI                 | BI  |   | MIN  | MAX    |                         |   |   |  |
| SMCJ5.0A          | SMCJ5.0CA        | GDE                 | BDE | 5.0                                     | 6.40                                       | 7.00   | 10                      | 9.2   | 163.0                                   | 800  |
| SMCJ6.0A          | SMCJ6.0CA        | GDG                 | BDG | 6.0                                     | 6.67                                       | 7.37   | 10                      | 10.3  | 145.7                                   | 800  |
| SMCJ6.5A          | SMCJ6.5CA        | GDK                 | BDK | 6.5                                     | 7.22                                       | 7.98   | 10                      | 11.2  | 134.0                                   | 500  |
| SMCJ7.0A          | SMCJ7.0CA        | GDM                 | BDM | 7.0                                     | 7.78                                       | 8.60   | 10                      | 12.0  | 125.0                                   | 200  |
| SMCJ7.5A          | SMCJ7.5CA        | GDP                 | BDP | 7.5                                     | 8.33                                       | 9.21   | 1                       | 12.9  | 116.3                                   | 100  |
| SMCJ8.0A          | SMCJ8.0CA        | GDR                 | BDR | 8.0                                     | 8.89                                       | 9.83   | 1                       | 13.6  | 110.3                                   | 50   |
| SMCJ8.5A          | SMCJ8.5CA        | GDT                 | BDT | 8.5                                     | 9.44                                       | 10.40  | 1                       | 14.4  | 104.2                                   | 20   |
| SMCJ9.0A          | SMCJ9.0CA        | GDV                 | BDV | 9.0                                     | 10.00                                      | 11.10  | 1                       | 15.4  | 97.4                                    | 10   |
| SMCJ10A           | SMCJ10CA         | GDX                 | BDX | 10.0                                    | 11.10                                      | 12.30  | 1                       | 17.0  | 88.3                                    | 5  |
| SMCJ11A           | SMCJ11CA         | GDZ                 | BDZ | 11.0                                    | 12.20                                      | 13.50  | 1                       | 18.2  | 82.5                                    | 5  |
| SMCJ12A           | SMCJ12CA         | GEE                 | BEE | 12.0                                    | 13.30                                      | 14.70  | 1                       | 19.9  | 75.4                                    | 5  |
| SMCJ13A           | SMCJ13CA         | GEG                 | BEG | 13.0                                    | 14.40                                      | 15.90  | 1                       | 21.5  | 69.8                                    | 5  |
| SMCJ14A           | SMCJ14CA         | GEK                 | BEK | 14.0                                    | 15.60                                      | 17.20  | 1                       | 23.2  | 64.7                                    | 5  |
| SMCJ15A           | SMCJ15CA         | GEM                 | BEM | 15.0                                    | 16.70                                      | 18.50  | 1                       | 24.4  | 61.5                                    | 5  |
| SMCJ16A           | SMCJ16CA         | GEP                 | BEP | 16.0                                    | 17.80                                      | 19.70  | 1                       | 26.0  | 57.7                                    | 5  |
| SMCJ17A           | SMCJ17CA         | GER                 | BER | 17.0                                    | 18.90                                      | 20.90  | 1                       | 27.6  | 54.4                                    | 5  |
| SMCJ18A           | SMCJ18CA         | GET                 | BET | 18.0                                    | 20.00                                      | 22.10  | 1                       | 29.2  | 51.4                                    | 5  |
| SMCJ20A           | SMCJ20CA         | GEV                 | BEV | 20.0                                    | 22.20                                      | 24.50  | 1                       | 32.4  | 46.3                                    | 5  |
| SMCJ22A           | SMCJ22CA         | GEX                 | BEX | 22.0                                    | 24.40                                      | 26.90  | 1                       | 35.5  | 42.3                                    | 5  |
| SMCJ24A           | SMCJ24CA         | GEZ                 | BEZ | 24.0                                    | 26.70                                      | 29.50  | 1                       | 38.9  | 38.6                                    | 5  |
| SMCJ26A           | SMCJ26CA         | GFE                 | BFE | 26.0                                    | 28.90                                      | 31.90  | 1                       | 42.1  | 35.7                                    | 5  |
| SMCJ28A           | SMCJ28CA         | GFG                 | BFG | 28.0                                    | 31.10                                      | 34.40  | 1                       | 45.4  | 33.1                                    | 5  |
| SMCJ30A           | SMCJ30CA         | GFK                 | BFK | 30.0                                    | 33.30                                      | 36.80  | 1                       | 48.4  | 31.0                                    | 5  |
| SMCJ33A           | SMCJ33CA         | GFM                 | BFM | 33.0                                    | 36.70                                      | 40.60  | 1                       | 53.3  | 28.2                                    | 5  |
| SMCJ36A           | SMCJ36CA         | GFP                 | BFP | 36.0                                    | 40.00                                      | 44.20  | 1                       | 58.1  | 25.9                                    | 5  |
| SMCJ40A           | SMCJ40CA         | GFR                 | BFR | 40.0                                    | 44.40                                      | 49.10  | 1                       | 64.5  | 23.3                                    | 5  |
| SMCJ43A           | SMCJ43CA         | GFT                 | BFT | 43.0                                    | 47.80                                      | 52.80  | 1                       | 69.4  | 21.7                                    | 5  |
| SMCJ45A           | SMCJ45CA         | GFV                 | BFV | 45.0                                    | 50.00                                      | 55.30  | 1                       | 72.7  | 20.6                                    | 5  |
| SMCJ48A           | SMCJ48CA         | GFX                 | BFX | 48.0                                    | 53.30                                      | 58.90  | 1                       | 77.4  | 19.4                                    | 5  |
| SMCJ51A           | SMCJ51CA         | GFZ                 | BFZ | 51.0                                    | 56.70                                      | 62.70  | 1                       | 82.4  | 18.2                                    | 5  |
| SMCJ54A           | SMCJ54CA         | GGE                 | BGE | 54.0                                    | 60.00                                      | 66.30  | 1                       | 87.1  | 17.3                                    | 5  |
| SMCJ58A           | SMCJ58CA         | GGG                 | BGG | 58.0                                    | 64.40                                      | 71.20  | 1                       | 93.6  | 16.1                                    | 5  |
| SMCJ60A           | SMCJ60CA         | GGK                 | BGK | 60.0                                    | 66.70                                      | 73.70  | 1                       | 96.8  | 15.5                                    | 5  |
| SMCJ64A           | SMCJ64CA         | GGM                 | BGM | 64.0                                    | 71.10                                      | 78.60  | 1                       | 103.0   | 14.6                                    | 5  |
| SMCJ70A           | SMCJ70CA         | GGP                 | BGP | 70.0                                    | 77.80                                      | 86.00  | 1                       | 113.0   | 13.3                                    | 5  |
| SMCJ75A           | SMCJ75CA         | GGR                 | BGR | 75.0                                    | 83.30                                      | 92.10  | 1                       | 121.0   | 12.4                                    | 5  |
| SMCJ78A           | SMCJ78CA         | GGT                 | BGT | 78.0                                    | 86.70                                      | 95.80  | 1                       | 126.0   | 11.9                                    | 5  |
| SMCJ85A           | SMCJ85CA         | GGV                 | BGV | 85.0                                    | 94.40                                      | 104.00 | 1                       | 137.0   | 11.0                                    | 5  |
| SMCJ90A           | SMCJ90CA         | GGX                 | BGX | 90.0                                    | 100.00                                     | 111.00 | 1                       | 146.0   | 10.3                                    | 5  |
| SMCJ100A          | SMCJ100CA        | GGZ                 | BGZ | 100.0                                   | 111.00                                     | 123.00 | 1                       | 162.0   | 9.3                                     | 5  |
| SMCJ110A          | SMCJ110CA        | GHE                 | BHE | 110.0                                   | 122.00                                     | 135.00 | 1                       | 177.0   | 8.5                                     | 5  |
| SMCJ120A          | SMCJ120CA        | GHG                 | BHG | 120.0                                   | 133.00                                     | 147.00 | 1                       | 193.0   | 7.8                                     | 5  |
| SMCJ130A          | SMCJ130CA        | GHK                 | BHK | 130.0                                   | 144.00                                     | 159.00 | 1                       | 209.0   | 7.2                                     | 5  |
| SMCJ150A          | SMCJ150CA        | GHM                 | BHM | 150.0                                   | 167.00                                     | 185.00 | 1                       | 243.0   | 6.2                                     | 5  |
| SMCJ160A          | SMCJ160CA        | GHP                 | BHP | 160.0                                   | 178.00                                     | 197.00 | 1                       | 259.0   | 5.8                                     | 5  |
| SMCJ170A          | SMCJ170CA        | GHR                 | BHR | 170.0                                   | 189.00                                     | 209.00 | 1                       | 275.0   | 5.5                                     | 5  |
| SMCJ180A          | SMCJ180CA        | GHT                 | BHT | 180.0                                   | 201.00                                     | 222.00 | 1                       | 292.0   | 5.1                                     | 5  |
| SMCJ200A          | SMCJ200CA        | GHV                 | BHV | 200.0                                   | 224.00                                     | 247.00 | 1                       | 324.0   | 4.6                                     | 5  |
| SMCJ220A          | SMCJ220CA        | GHX                 | BHX | 220.0                                   | 246.00                                     | 272.00 | 1                       | 356.0   | 4.2                                     | 5  |
| SMCJ250A          | SMCJ250CA        | GHZ                 | BHZ | 250.0                                   | 279.00                                     | 309.00 | 1                       | 405.0   | 3.7                                     | 5  |
| SMCJ300A          | SMCJ300CA        | GJE                 | BJE | 300.0                                   | 335.00                                     | 371.00 | 1                       | 486.0   | 3.1                                     | 5  |
| SMCJ350A          | SMCJ350CA        | GJG                 | BJG | 350.0                                   | 391.00                                     | 432.00 | 1                       | 567.0   | 2.6                                     | 5  |
| SMCJ400A          | SMCJ400CA        | GJK                 | BJK | 400.0                                   | 447.00                                     | 494.00 | 1                       | 648.0   | 2.3                                     | 5  |
| SMCJ440A          | SMCJ440CA        | GJM                 | BJM | 440.0                                   | 492.00                                     | 543.00 | 1                       | 713.0   | 2.1                                     | 5  |

For bidirectional type having  $V_{RWM}$  of 10 volts and less, the  $I_R$  limit is double.  
For parts without A ( $V_{BR}$  is  $\pm 10\%$ ).