

## FEATURES

- For surface mounted application
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- Typical less than 1 , -4;0'
- High temperature soldering guaranteed:250°C/ 10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 600 watts peak pulse power capability with a 10 x 1000 us waveform by 0.01% duty cycle



**SMB(DO-214AA)**

## MECHANICAL DATA

- Case: Molded plastic
- Terminals: Solder plated
- Polarity: Indicated by cathode band
- Standard packaging: 12mm tape (EIA STD RS-481)
- Weight: 0.003 ounce 0.093grams

## DEVICES FOR BIPOLAR APPLICATION

For bidirectional use C or CA suffix for types SMBJ5.0 thru types SMBJ440 (e.g.SMBJ5.0CA, SMBJ440CA),electrical characteristics apply in both directions.

## MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 ambient temperature unless otherwise specified.

| Type Number  | Symbol                            | Value        | Units |
|--|-----------------------------------|--------------|-------|
| Peak Power Dissipation at TA=25°C, Tp=1ms(Note 1)  | P <sub>PPM</sub>                  | Minimum 600  | Watts |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3) - Unidirectional Only | I <sub>FSM</sub>                  | 100          | Amps  |
| Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only   | V <sub>F</sub>                    | 3.5 / 5.0    | Volts |
| Operating and Storage Temperature Range  | T <sub>J</sub> , T <sub>STG</sub> | -65 to + 150 | °C    |

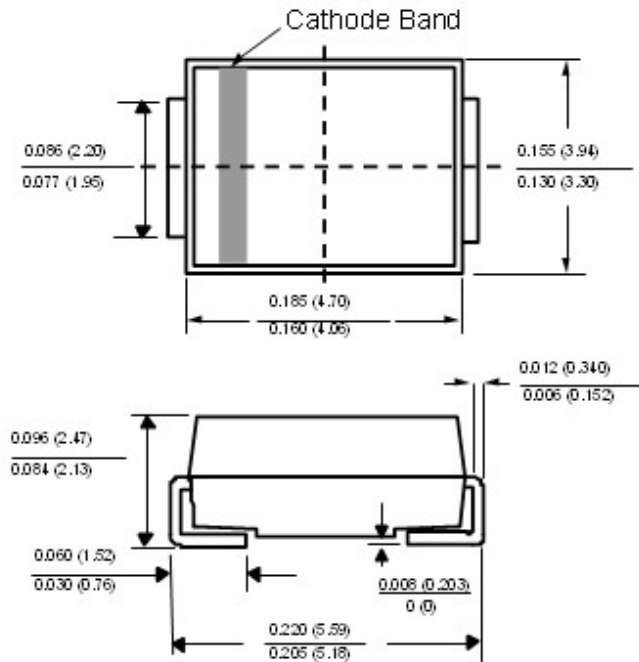
Notes: 1. Non-repetitive Current Pulse Per Fig. 3 and Derated above TA=25°C Per Fig. 2.

2. Mounted on 5.0mm<sup>2</sup> (.013 mm Thick) Copper Pads to Each Terminal.

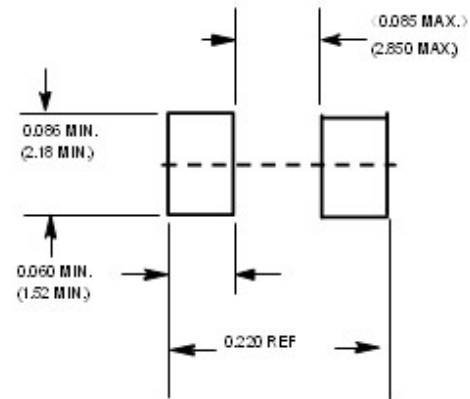
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 pulses Per Minute Maximum.

**PACKAGE DIMENSIONS**

**DO-214AA (SMB-J-Bend)**



**Mounting Pad Layout**



**ELECTRICAL CHARACTERISTICS**

| Part Number |           | Marking code |      | Reverse Stand-Off Voltage | Breakdown Voltage @IT |             | Test Current | Maximum Clamping Voltage @IPP | Peak Pulse Current | Reverse Leakage @VRWM |
|-------------|-----------|--------------|------|---------------------------|-----------------------|-------------|--------------|-------------------------------|--------------------|-----------------------|
| (UNI)       | (BI)      | (UNI)        | (BI) | VRWM(V)                   | VBR MIN.(V)           | VBR MAX.(V) | IT(mA)       | VC(V)                         | IPP(A)             | IR(μA)                |
| SMBJ5.0A    | SMBJ5.0CA | KE           | AE   | 5.0                       | 6.40                  | 7.25        | 10           | 9.20                          | 65.30              | 800                   |
| SMBJ6.0A    | SMBJ6.0CA | KG           | AG   | 6.0                       | 6.67                  | 7.67        | 10           | 10.30                         | 58.30              | 800                   |
| SMBJ6.5A    | SMBJ6.5CA | KK           | AK   | 6.5                       | 7.22                  | 8.30        | 10           | 11.20                         | 53.60              | 500                   |
| SMBJ7.0A    | SMBJ7.0CA | KM           | AM   | 7.0                       | 7.78                  | 8.95        | 10           | 12.00                         | 50.00              | 200                   |
| SMBJ7.5A    | SMBJ7.5CA | KP           | AP   | 7.5                       | 8.33                  | 9.58        | 1            | 12.90                         | 46.60              | 100                   |
| SMBJ8.0A    | SMBJ8.0CA | KR           | AR   | 8.0                       | 8.89                  | 10.23       | 1            | 13.60                         | 44.20              | 50                    |
| SMBJ8.5A    | SMBJ8.5CA | KT           | AT   | 8.5                       | 9.44                  | 10.82       | 1            | 14.40                         | 41.70              | 20                    |
| SMBJ9.0A    | SMBJ9.0CA | KV           | AV   | 9.0                       | 10.00                 | 11.50       | 1            | 15.40                         | 39.00              | 10                    |
| SMBJ10A     | SMBJ10CA  | KX           | AX   | 10.0                      | 11.10                 | 12.80       | 1            | 17.00                         | 35.30              | 5                     |

| Part Number |          | Marking code |      | Reverse Stand-Off Voltage | Breakdown Voltage @IT |             | Test Current | Maximum Clamping Voltage @IPP | Peak Pulse Current | Reverse Leakage @VRWM |
|-------------|----------|--------------|------|---------------------------|-----------------------|-------------|--------------|-------------------------------|--------------------|-----------------------|
| (UNI)       | (BI)     | (UNI)        | (BI) | VRWM(V)                   | VBR MIN.(V)           | VBR MAX.(V) | IT(mA)       | VC(V)                         | IPP(A)             | IR(μA)                |
| SMBJ11A     | SMBJ11CA | KZ           | AZ   | 11.0                      | 12.20                 | 14.00       | 1            | 18.20                         | 33.00              | 1                     |
| SMBJ12A     | SMBJ12CA | LE           | BE   | 12.0                      | 13.30                 | 15.30       | 1            | 19.90                         | 30.20              | 1                     |
| SMBJ13A     | SMBJ13CA | LG           | BG   | 13.0                      | 14.40                 | 16.50       | 1            | 21.50                         | 28.00              | 1                     |
| SMBJ14A     | SMBJ14CA | LK           | BK   | 14.0                      | 15.60                 | 17.90       | 1            | 23.20                         | 25.90              | 1                     |
| SMBJ15A     | SMBJ15CA | LM           | BM   | 15.0                      | 16.70                 | 19.20       | 1            | 24.40                         | 24.60              | 1                     |
| SMBJ16A     | SMBJ16CA | LP           | BP   | 16.0                      | 17.80                 | 20.50       | 1            | 26.00                         | 23.10              | 1                     |
| SMBJ17A     | SMBJ17CA | LR           | BR   | 17.0                      | 18.90                 | 21.70       | 1            | 27.60                         | 21.70              | 1                     |
| SMBJ18A     | SMBJ18CA | LT           | BT   | 18.0                      | 20.00                 | 23.30       | 1            | 29.20                         | 20.50              | 1                     |
| SMBJ20A     | SMBJ20CA | LV           | BV   | 20.0                      | 22.20                 | 25.50       | 1            | 32.40                         | 18.50              | 1                     |
| SMBJ22A     | SMBJ22CA | LX           | BX   | 22.0                      | 24.40                 | 28.00       | 1            | 35.50                         | 16.90              | 1                     |
| SMBJ24A     | SMBJ24CA | LZ           | BZ   | 24.0                      | 26.70                 | 30.70       | 1            | 38.90                         | 15.20              | 1                     |
| SMBJ26A     | SMBJ26CA | ME           | CE   | 26.0                      | 28.90                 | 33.20       | 1            | 42.10                         | 14.20              | 1                     |
| SMBJ28A     | SMBJ28CA | MG           | CG   | 28.0                      | 31.10                 | 35.80       | 1            | 45.20                         | 13.20              | 1                     |
| SMBJ30A     | SMBJ30CA | MK           | CK   | 30.0                      | 33.30                 | 38.30       | 1            | 48.40                         | 12.40              | 1                     |
| SMBJ33A     | SMBJ33CA | MM           | CM   | 33.0                      | 36.70                 | 42.20       | 1            | 53.3                          | 11.30              | 1                     |
| SMBJ36A     | SMBJ36CA | MP           | CP   | 36.0                      | 40.00                 | 46.00       | 1            | 58.10                         | 10.30              | 1                     |
| SMBJ40A     | SMBJ40CA | MR           | CR   | 40.0                      | 44.40                 | 51.10       | 1            | 64.50                         | 9.30               | 1                     |
| SMBJ43A     | SMBJ43CA | MT           | CT   | 43.0                      | 47.80                 | 54.90       | 1            | 69.40                         | 8.60               | 1                     |
| SMBJ45A     | SMBJ45CA | MV           | CV   | 45.0                      | 50.00                 | 57.50       | 1            | 72.70                         | 8.30               | 1                     |
| SMBJ48A     | SMBJ48CA | MX           | CX   | 48.0                      | 53.30                 | 61.30       | 1            | 77.40                         | 7.70               | 1                     |
| SMBJ51A     | SMBJ51CA | MZ           | CZ   | 51.0                      | 56.70                 | 65.20       | 1            | 82.40                         | 7.30               | 1                     |
| SMBJ54A     | SMBJ54CA | NE           | DE   | 54.0                      | 60.00                 | 69.00       | 1            | 87.10                         | 6.90               | 1                     |
| SMBJ58A     | SMBJ58CA | NG           | DG   | 58.0                      | 64.40                 | 74.10       | 1            | 93.60                         | 6.40               | 1                     |
| SMBJ60A     | SMBJ60CA | NK           | DK   | 60.0                      | 66.70                 | 76.70       | 1            | 96.80                         | 6.20               | 1                     |
| SMBJ64A     | SMBJ64CA | NM           | DM   | 64.0                      | 71.10                 | 81.80       | 1            | 103.00                        | 5.80               | 1                     |
| SMBJ70A     | SMBJ70CA | NP           | DP   | 70.0                      | 77.80                 | 89.50       | 1            | 113.00                        | 5.30               | 1                     |

| Part Number |           | Marking code |      | Reverse Stand-Off Voltage | Breakdown Voltage @IT |             | Test Current | Maximum Clamping Voltage @IPP | Peak Pulse Current | Reverse Leakage @VRWM |
|-------------|-----------|--------------|------|---------------------------|-----------------------|-------------|--------------|-------------------------------|--------------------|-----------------------|
| (UNI)       | (BI)      | (UNI)        | (BI) | VRWM(V)                   | VBR MIN.(V)           | VBR MAX.(V) | IT(mA)       | VC(V)                         | IPP(A)             | IR(μA)                |
| SMBJ75A     | SMBJ75CA  | NR           | DR   | 75.0                      | 83.30                 | 95.80       | 1            | 121.00                        | 4.90               | 1                     |
| SMBJ78A     | SMBJ78CA  | NT           | DT   | 78.0                      | 86.70                 | 99.70       | 1            | 126.00                        | 4.70               | 1                     |
| SMBJ85A     | SMBJ85CA  | NV           | DV   | 85.0                      | 94.40                 | 108.20      | 1            | 137.00                        | 4.40               | 1                     |
| SMBJ90A     | SMBJ90CA  | NX           | DX   | 90.0                      | 100.00                | 115.50      | 1            | 146.00                        | 4.10               | 1                     |
| SMBJ100A    | SMBJ100CA | NZ           | DZ   | 100.0                     | 111.00                | 128.00      | 1            | 162.00                        | 3.70               | 1                     |
| SMBJ110A    | SMBJ110CA | PE           | EE   | 110.0                     | 122.00                | 140.50      | 1            | 177.00                        | 3.40               | 1                     |
| SMBJ120A    | SMBJ120CA | PG           | EG   | 120.0                     | 133.00                | 153.00      | 1            | 193.00                        | 3.10               | 1                     |
| SMBJ130A    | SMBJ130CA | PK           | EK   | 130.0                     | 144.00                | 165.50      | 1            | 209.00                        | 2.90               | 1                     |
| SMBJ150A    | SMBJ150CA | PM           | EM   | 150.0                     | 167.00                | 192.50      | 1            | 243.00                        | 2.50               | 1                     |
| SMBJ160A    | SMBJ160CA | PP           | EP   | 160.0                     | 178.00                | 205.00      | 1            | 259.00                        | 2.30               | 1                     |
| SMBJ170A    | SMBJ170CA | PR           | ER   | 170.0                     | 189.00                | 217.50      | 1            | 275.00                        | 2.20               | 1                     |
| SMBJ180A    | SMBJ180CA | PT           | ET   | 180.0                     | 201.00                | 230.40      | 1            | 292.00                        | 2.10               | 1                     |
| SMBJ190A    | SMBJ190CA | PV           | EV   | 190.0                     | 209.00                | 243.20      | 1            | 308.00                        | 2.00               | 1                     |
| SMBJ200A    | SMBJ200CA | PX           | EX   | 200.0                     | 224.00                | 256.00      | 1            | 324.00                        | 1.90               | 1                     |
| SMBJ210A    | SMBJ210CA | PZ           | EZ   | 210.0                     | 231.00                | 268.80      | 1            | 340.00                        | 1.80               | 1                     |
| SMBJ220A    | SMBJ220CA | QE           | FE   | 220.0                     | 246.00                | 281.60      | 1            | 356.00                        | 1.70               | 1                     |
| SMBJ250A    | SMBJ250CA | QG           | FG   | 250.0                     | 279.00                | 309.00      | 1            | 405.00                        | 1.50               | 1                     |
| SMBJ300A    | SMBJ300CA | QK           | FK   | 300.0                     | 335.00                | 371.00      | 1            | 486.00                        | 1.30               | 1                     |
| SMBJ350A    | SMBJ350CA | QM           | FM   | 350.0                     | 391.00                | 432.00      | 1            | 567.00                        | 1.10               | 1                     |
| SMBJ400A    | SMBJ400CA | QP           | FP   | 400.0                     | 447.00                | 494.00      | 1            | 648.00                        | 0.90               | 1                     |
| SMBJ440A    | SMBJ440CA | QR           | FR   | 440.0                     | 492.00                | 543.00      | 1            | 713.00                        | 0.90               | 1                     |

**PACKAGING**

| Part Number | Component Package | Quantity |
|-------------|-------------------|----------|
| SMBJxxxXX   | DO-214AA          | 500      |

**RATINGS AND CHARACTERISTIC CURVES** (TA=25 unless

otherwise noted)

FIG.1- PEAK PULSE POWER RATING CURVE

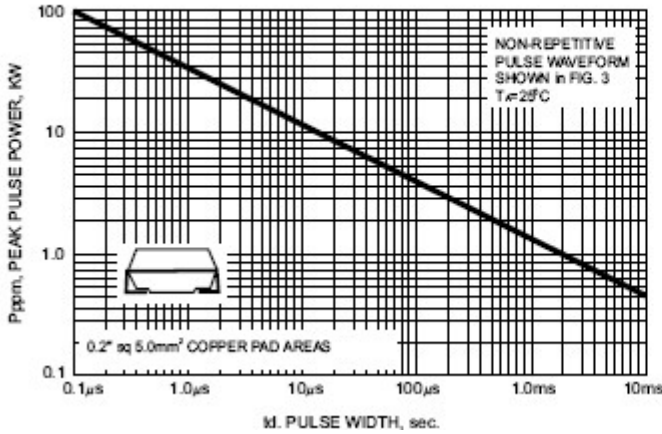


FIG.2- PULSE DERATING CURVE

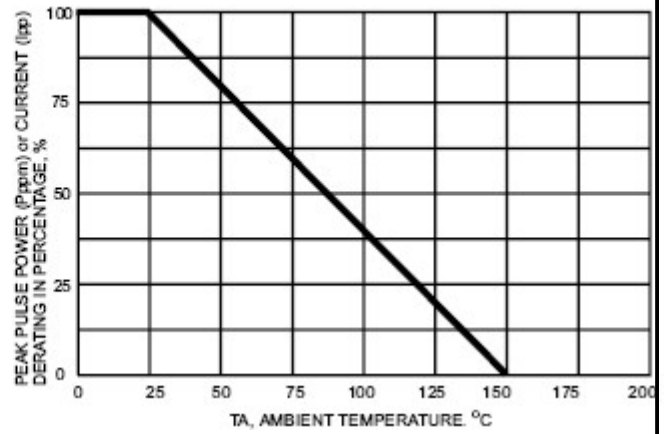


FIG.3- PULSE WAVEFORM

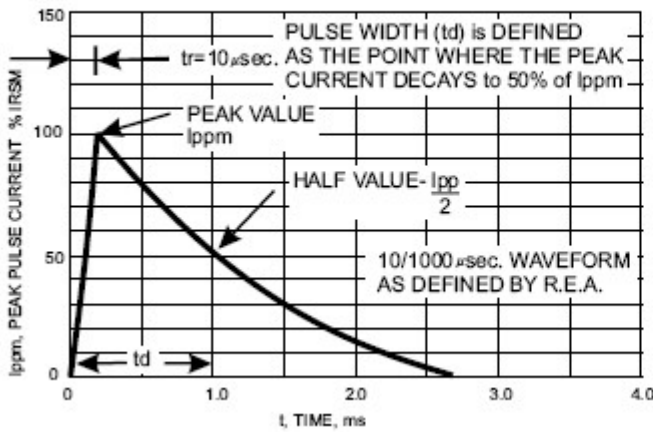


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

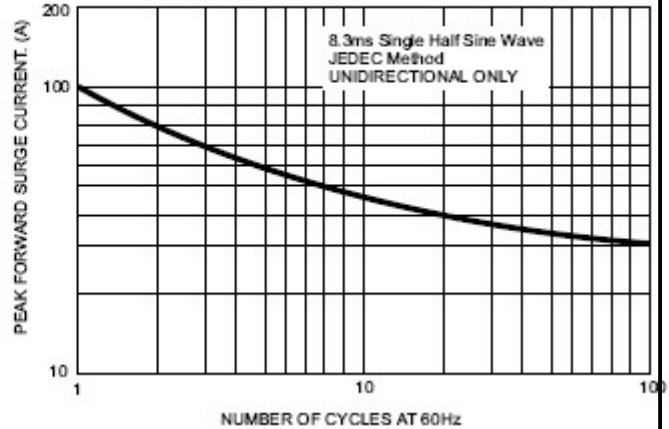
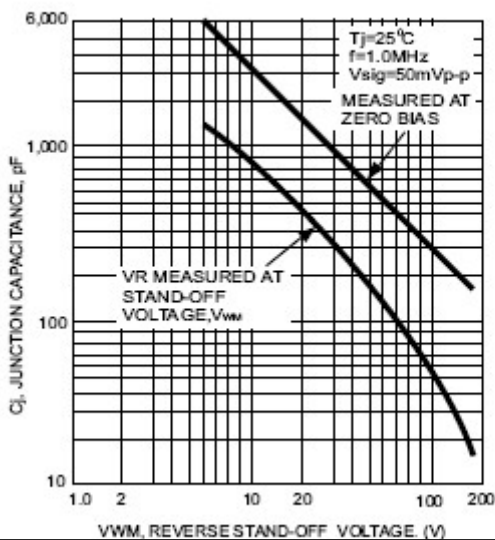


FIG.5- TYPICAL JUNCTION CAPACITANCE



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [SEMBO](#) manufacturer:*

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [DESD5V0U1BB-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#) [P6KE8.2A](#)  
[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)  
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DESD5V0U1BL-7B](#) [DRTR5V0U4SL-7](#)  
[SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [SMF8.0A-TP](#) [SMLJ45CA-TP](#) [SMQA1000T1G](#) [CEN955 W/DATA](#) [82350120560](#)  
[VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [IP4042CX5/LF,135](#) [D1213A-01LP4-7B](#) [D1213A-02WL-7](#) [1SMB33CAT3G-XYZ](#) [MMAD1108/TR13](#) [5KP100A](#) [5KP15A](#)