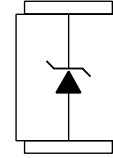


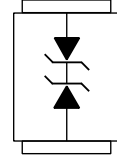
**Surface Mount-600W Transient Voltage Suppression Diodes**
**Description**

The SMBJ Series are designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Unidirectional



Bidirectional


**Feature**

- Halogen-Free
- RoHS compliant
- For surface mounted application to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Fast response time: typical less than 1.2ps from 0V to  $V_{BR}$  min
- 600W peak pulse power capability at  $10^*1000\mu s$  waveform, repetition rate (duty cycle): 0.01%

**Applications**

TVS device are ideal for the protection of I/O interfaces,  $V_{CC}$  bus and other vulnerable circuits used in telecom, computer industrial and consumer electronic application

**Absolute maximum rating@25°C**

| Rating  | Symbol         | Value       | Units |
|---|----------------|-------------|-------|
| Peak Pulse Power ( $t_p=10/700\mu s$ )  | $P_{pp}$       | 600         | W     |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) | $I_{FSM}$      | 100         | A     |
| Instantaneous Forward Voltage @ $I_{PP}=35A$<br>$V_{BR}<100V$<br>$V_{BR}\geq 100V$                | $V_F$          | 3.5<br>5.0  | V     |
| Operating and Storage Temperature   | $T_J, T_{STG}$ | -55 to +150 | °C    |

## Electrical characteristics per line@25°C ( unless otherwise specified)

| Part Number (Uni) | Part Number (Bi) | Reverse Stand off Voltage $V_R$ (V) | Breakdown Voltage $V_{BR}@ I_T$ (V) |       | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V) | Maximum Peak Pulse Current $I_{PP}$ | Maximum Reverse Leakage $I_R @ V_R$ ( $\mu A$ ) |
|-------------------|------------------|-------------------------------------|-------------------------------------|-------|-------------------------|---|-------------------------------------|---|
|                   |                  |                                     | MIN                                 | MAX   |                         |   |                                     |   |
| SMBJ5.0A          | SMBJ5.0CA        | 5.0                                 | 6.40                                | 7.00  | 10                      | 9.2   | 65.3                                | 800   |
| SMBJ6.0A          | SMBJ6.0CA        | 6.0                                 | 6.67                                | 7.37  | 10                      | 10.3  | 58.3                                | 800   |
| SMBJ6.5A          | SMBJ6.5CA        | 6.5                                 | 7.22                                | 7.98  | 10                      | 11.2  | 53.6                                | 500   |
| SMBJ7.0A          | SMBJ7.0CA        | 7.0                                 | 7.78                                | 8.60  | 10                      | 12.0  | 50.0                                | 200   |
| SMBJ7.5A          | SMBJ7.5CA        | 7.5                                 | 8.33                                | 9.21  | 1                       | 12.9  | 46.6                                | 100   |
| SMBJ8.0A          | SMBJ8.0CA        | 8.0                                 | 8.89                                | 9.83  | 1                       | 13.6  | 44.2                                | 50  |
| SMBJ8.5A          | SMBJ8.5CA        | 8.5                                 | 9.44                                | 10.40 | 1                       | 14.4  | 41.7                                | 20  |
| SMBJ9.0A          | SMBJ9.0CA        | 9.0                                 | 10.00                               | 11.10 | 1                       | 15.4  | 39.0                                | 10  |
| SMBJ10A           | SMBJ10CA         | 10.0                                | 11.10                               | 12.30 | 1                       | 17.0  | 35.3                                | 5   |
| SMBJ11A           | SMBJ11CA         | 11.0                                | 12.20                               | 13.50 | 1                       | 18.2  | 33.0                                | 1   |
| SMBJ12A           | SMBJ12CA         | 12.0                                | 13.30                               | 14.70 | 1                       | 19.9  | 30.2                                | 1   |
| SMBJ13A           | SMBJ13CA         | 13.0                                | 14.40                               | 15.90 | 1                       | 21.5  | 28.0                                | 1   |
| SMBJ14A           | SMBJ14CA         | 14.0                                | 15.60                               | 17.20 | 1                       | 23.2  | 25.9                                | 1   |
| SMBJ15A           | SMBJ15CA         | 15.0                                | 16.70                               | 18.50 | 1                       | 24.4  | 24.6                                | 1   |
| SMBJ16A           | SMBJ16CA         | 16.0                                | 17.80                               | 19.70 | 1                       | 26.0  | 23.1                                | 1   |
| SMBJ17A           | SMBJ17CA         | 17.0                                | 18.90                               | 20.90 | 1                       | 27.6  | 21.8                                | 1   |
| SMBJ18A           | SMBJ18CA         | 18.0                                | 20.00                               | 22.10 | 1                       | 29.2  | 20.6                                | 1   |
| SMBJ20A           | SMBJ20CA         | 20.0                                | 22.20                               | 24.50 | 1                       | 32.4  | 18.6                                | 1   |
| SMBJ22A           | SMBJ22CA         | 22.0                                | 24.40                               | 26.90 | 1                       | 35.5  | 16.9                                | 1   |
| SMBJ24A           | SMBJ24CA         | 24.0                                | 26.70                               | 29.50 | 1                       | 38.9  | 15.5                                | 1   |
| SMBJ26A           | SMBJ26CA         | 26.0                                | 28.90                               | 31.90 | 1                       | 42.1  | 14.3                                | 1   |
| SMBJ28A           | SMBJ28CA         | 28.0                                | 31.10                               | 34.40 | 1                       | 45.4  | 13.3                                | 1   |
| SMBJ30A           | SMBJ30CA         | 30.0                                | 33.30                               | 36.80 | 1                       | 48.4  | 12.4                                | 1   |
| SMBJ33A           | SMBJ33CA         | 33.0                                | 36.70                               | 40.60 | 1                       | 53.3  | 11.3                                | 1   |
| SMBJ36A           | SMBJ36CA         | 36.0                                | 40.00                               | 44.20 | 1                       | 58.1  | 10.4                                | 1   |
| SMBJ40A           | SMBJ40CA         | 40.0                                | 44.40                               | 49.10 | 1                       | 64.5  | 9.3                                 | 1   |
| SMBJ43A           | SMBJ43CA         | 43.0                                | 47.80                               | 52.80 | 1                       | 69.40   | 8.7                                 | 1   |
| SMBJ45A           | SMBJ45CA         | 45.0                                | 50.00                               | 55.30 | 1                       | 72.7  | 8.3                                 | 1   |

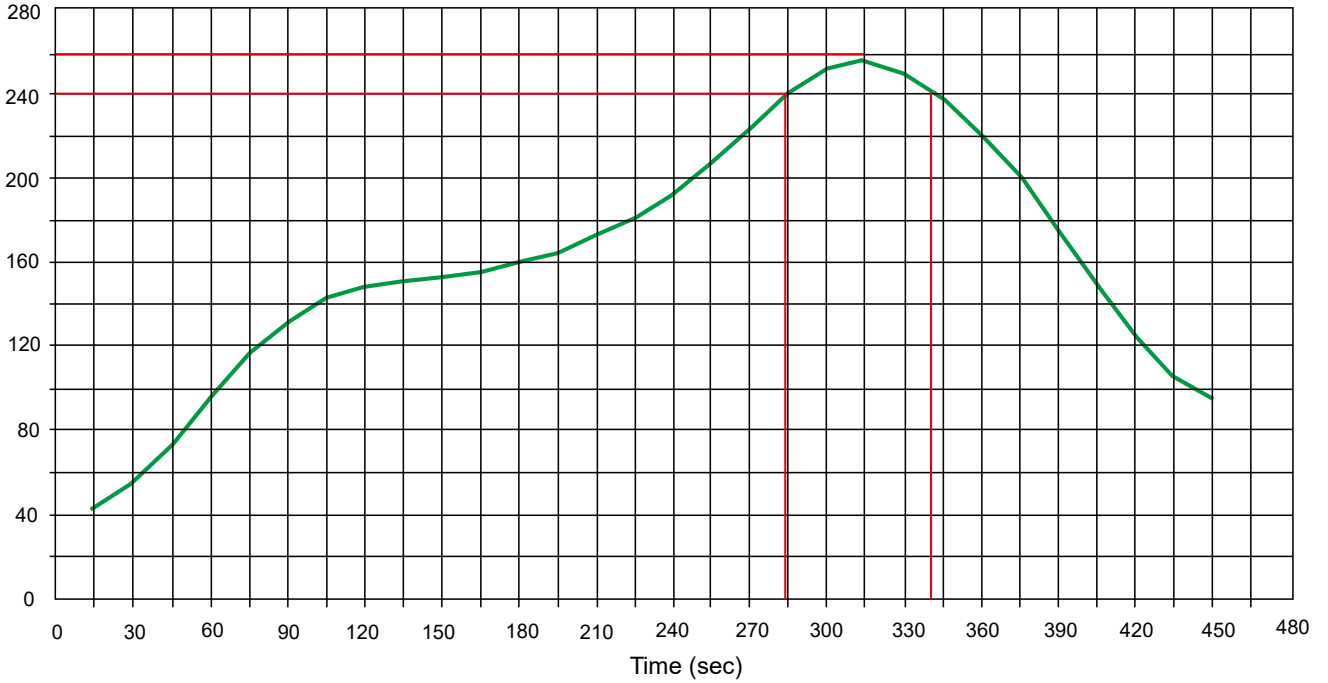
| Part Number (Uni) | Part Number (Bi) | Reverse Stand off Voltage $V_R$ (V) | Breakdown Voltage $V_{BR}@ I_T$ (V) |        | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C @ I_{PP}$ (V) | Maximum Peak Pulse Current $I_{PP}$ | Maximum Reverse Leakage $I_R @ V_R$ ( $\mu A$ ) |
|-------------------|------------------|-------------------------------------|-------------------------------------|--------|-------------------------|---|-------------------------------------|---|
|                   |                  |                                     | MIN                                 | MAX    |                         |   |                                     |   |
| SMBJ48A           | SMBJ48CA         | 48.0                                | 53.30                               | 58.90  | 1                       | 77.4  | 7.8                                 | 1   |
| SMBJ51A           | SMBJ51CA         | 51.0                                | 56.70                               | 62.70  | 1                       | 82.4  | 7.3                                 | 1   |
| SMBJ54A           | SMBJ54CA         | 54.0                                | 60.00                               | 66.30  | 1                       | 87.1  | 6.9                                 | 1   |
| SMBJ58A           | SMBJ58CA         | 58.0                                | 64.40                               | 71.20  | 1                       | 93.6  | 6.5                                 | 1   |
| SMBJ60A           | SMBJ60CA         | 60.0                                | 66.70                               | 73.70  | 1                       | 96.8  | 6.2                                 | 1   |
| SMBJ64A           | SMBJ64CA         | 64.0                                | 71.10                               | 78.60  | 1                       | 103.0                                       | 5.9                                 | 1   |
| SMBJ70A           | SMBJ70CA         | 70.0                                | 77.80                               | 86.00  | 1                       | 113.0                                       | 5.3                                 | 1   |
| SMBJ75A           | SMBJ75CA         | 75.0                                | 83.30                               | 92.10  | 1                       | 121.0                                       | 5.0                                 | 1   |
| SMBJ78A           | SMBJ78CA         | 78.0                                | 86.70                               | 95.80  | 1                       | 126.0                                       | 4.8                                 | 1   |
| SMBJ85A           | SMBJ85CA         | 85.0                                | 94.40                               | 104.00 | 1                       | 137.0                                       | 4.4                                 | 1   |
| SMBJ90A           | SMBJ90CA         | 90.0                                | 100.00                              | 111.00 | 1                       | 146.0                                       | 4.1                                 | 1   |
| SMBJ100A          | SMBJ100CA        | 100.0                               | 111.00                              | 123.00 | 1                       | 162.0                                       | 3.7                                 | 1   |
| SMBJ110A          | SMBJ110CA        | 110.0                               | 122.00                              | 135.00 | 1                       | 177.0                                       | 3.4                                 | 1   |
| SMBJ120A          | SMBJ120CA        | 120.0                               | 133.00                              | 147.00 | 1                       | 193.0                                       | 3.1                                 | 1   |
| SMBJ130A          | SMBJ130CA        | 130.0                               | 144.00                              | 159.00 | 1                       | 209.0                                       | 2.9                                 | 1   |
| SMBJ150A          | SMBJ150CA        | 150.0                               | 167.00                              | 185.00 | 1                       | 243.0                                       | 2.5                                 | 1   |
| SMBJ160A          | SMBJ160CA        | 160.0                               | 178.00                              | 197.00 | 1                       | 259.0                                       | 2.3                                 | 1   |
| SMBJ170A          | SMBJ170CA        | 170.0                               | 189.00                              | 209.00 | 1                       | 275.0                                       | 2.2                                 | 1   |
| SMBJ180A          | SMBJ180CA        | 180.0                               | 201.00                              | 222.00 | 1                       | 292.0                                       | 2.1                                 | 1   |
| SMBJ200A          | SMBJ200CA        | 200.0                               | 224.00                              | 247.00 | 1                       | 324.0                                       | 1.9                                 | 1   |
| SMBJ220A          | SMBJ220A         | 220.0                               | 246.00                              | 272.00 | 1                       | 356.0                                       | 1.7                                 | 1   |
| SMBJ250A          | SMBJ250CA        | 250.0                               | 279.00                              | 309.00 | 1                       | 405.0                                       | 1.5                                 | 1   |
| SMBJ300A          | SMBJ300CA        | 300.0                               | 335.00                              | 371.00 | 1                       | 486.0                                       | 1.3                                 | 1   |
| SMBJ350A          | SMBJ350CA        | 350.0                               | 391.00                              | 432.00 | 1                       | 567.0                                       | 1.1                                 | 1   |
| SMBJ400A          | SMBJ400CA        | 400.0                               | 447.00                              | 494.00 | 1                       | 648.0                                       | 0.9                                 | 1   |
| SMBJ440A          | SMBJ440CA        | 440.0                               | 492.00                              | 543.00 | 1                       | 713.0                                       | 0.9                                 | 1   |

For bidirectional type having  $V_{RWM}$  of 10 volts and less, the  $I_R$  limit is double.

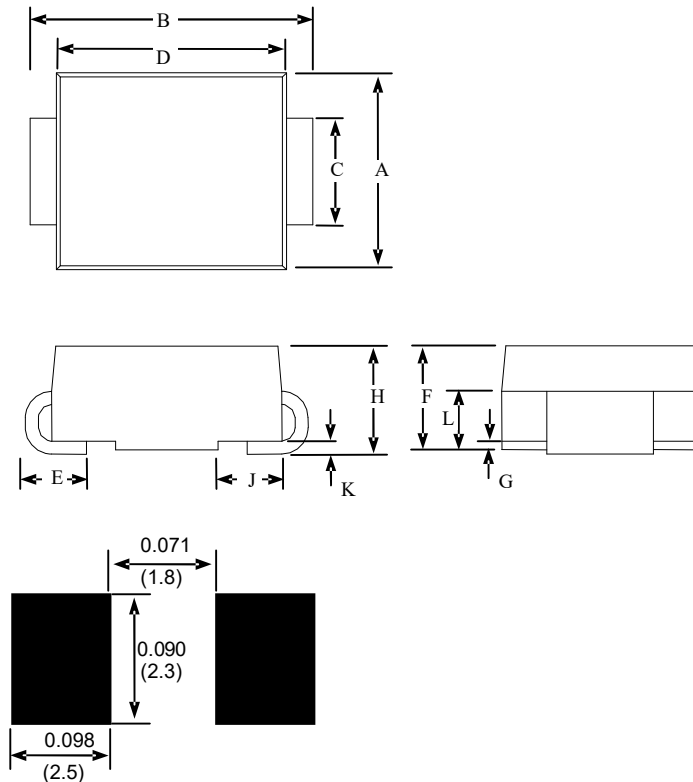
For parts without A, the  $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than with A parts.

Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension(SMB)




DIMENSIONS ARE :  $\frac{\text{INCHES}}{\text{(Millimeters)}}$

| Dimension | Inches |       | Millimeters |      |
|-----------|--------|-------|-------------|------|
|           | MIN    | MAX   | MIN         | MAX  |
| A         | 0.134  | 0.155 | 3.40        | 3.94 |
| B         | 0.205  | 0.220 | 5.21        | 5.59 |
| C         | 0.075  | 0.083 | 1.90        | 2.11 |
| D         | 0.166  | 0.185 | 4.22        | 4.70 |
| E         | 0.036  | 0.056 | 0.91        | 1.42 |
| F         | 0.073  | 0.087 | 1.85        | 2.10 |
| G         | 0.002  | 0.008 | 0.05        | 0.20 |
| H         | 0.077  | 0.094 | 1.95        | 2.40 |
| J         | 0.043  | 0.053 | 1.09        | 1.35 |
| K         | 0.008  | 0.014 | 0.20        | 0.35 |
| L         | 0.039  | 0.049 | 0.99        | 1.24 |

### Ordering information

| Device      | Package       | Reel | Shipping          |
|-------------|---------------|------|-------------------|
| SMBJ Series | SMB (Pb-Free) | 7"   | 500 / Tape & Reel |


**IMPORTANT NOTICE**

 and **Prisemi**<sup>®</sup> are registered trademarks of **Prisemi Electronics Co., Ltd** (Prisemi). Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. “Typical” parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including “Typicals” must be validated for each customer application by customer’s technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**<sup>®</sup> is a registered trademark of Prisemi Electronics.

All rights are reserved.

## 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 [Prisemi](#) 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](#) [CEN955 W/DATA](#) [82350120560](#) [VESD12A1A-](#)  
[HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [D1213A-02WL-7](#)  
[MMAD1108/TR13](#) [5KP100A](#) [5KP15A](#) [5KP18A](#) [5KP48A](#) [5KP90A](#)