

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 1SMB5.0CA Series types are Surface Mount Bi-Directional Glass Passivated Junction Transient Voltage Suppressors designed to protect voltage sensitive components from high voltage transients. **THIS DEVICE IS MANUFACTURED WITH A GLASS PASSIVATED CHIP FOR OPTIMUM RELIABILITY.**

Note: For Uni-directional devices, please refer to the 1SMB5.0A Series data sheet.

**Specified by**  
**STAND-OFF VOLTAGE**

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

|                                               | SYMBOL         |             | UNITS              |
|-----------------------------------------------|----------------|-------------|--------------------|
| Peak Power Dissipation                        | $P_{DM}$       | 600         | W                  |
| Peak Forward Surge Current (JEDEC Method)     | $I_{FSM}$      | 100         | A                  |
| Operating and Storage<br>Junction Temperature | $T_J, T_{stg}$ | -65 to +150 | $^{\circ}\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

| TYPE NO.  | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE |       |                 | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@V <sub>RWM</sub> | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@I <sub>PPM</sub> | MAXIMUM<br>PEAK PULSE<br>CURRENT | MARKING<br>CODE |
|-----------|---------------------------------|----------------------|-------|-----------------|----------------------------------------------------|-----------------------------------------------------|----------------------------------|-----------------|
|           |                                 | V <sub>BR</sub>      |       | @I <sub>T</sub> |                                                    |                                                     |                                  |                 |
|           | V <sub>RWM</sub>                | VOLTS                |       |                 |                                                    |                                                     |                                  |                 |
|           | VOLTS                           | MIN                  | MAX   | mA              | μA                                                 | VOLTS                                               | A                                |                 |
|           | 1SMB5.0CA                       | 5.0                  | 6.40  | 7.25            | 10                                                 | 1600                                                | 9.2                              |                 |
| 1SMB6.0CA | 6.0                             | 6.67                 | 7.67  | 10              | 1600                                               | 10.3                                                | 58.3                             | CKGC            |
| 1SMB6.5CA | 6.5                             | 7.22                 | 8.30  | 10              | 1000                                               | 11.2                                                | 53.6                             | CKKC            |
| 1SMB7.0CA | 7.0                             | 7.78                 | 8.95  | 10              | 400                                                | 12.0                                                | 50.0                             | CKMC            |
| 1SMB7.5CA | 7.5                             | 8.33                 | 9.58  | 1.0             | 200                                                | 12.9                                                | 46.5                             | CKPC            |
| 1SMB8.0CA | 8.0                             | 8.89                 | 10.23 | 1.0             | 100                                                | 13.6                                                | 44.1                             | CKRC            |
| 1SMB8.5CA | 8.5                             | 9.44                 | 10.82 | 1.0             | 20                                                 | 14.4                                                | 41.7                             | CKTC            |
| 1SMB9.0CA | 9.0                             | 10.0                 | 11.5  | 1.0             | 10                                                 | 15.4                                                | 39.0                             | CKVC            |
| 1SMB10CA  | 10                              | 11.1                 | 12.8  | 1.0             | 5.0                                                | 17.0                                                | 35.3                             | CKXC            |
| 1SMB11CA  | 11                              | 12.2                 | 14.0  | 1.0             | 5.0                                                | 18.2                                                | 33.0                             | CKZC            |
| 1SMB12CA  | 12                              | 13.3                 | 15.3  | 1.0             | 5.0                                                | 19.9                                                | 30.2                             | CLEC            |
| 1SMB13CA  | 13                              | 14.4                 | 16.5  | 1.0             | 5.0                                                | 21.5                                                | 27.9                             | CLGC            |

| TYPE NO.  |                           | BREAKDOWN VOLTAGE |       |         | MAXIMUM REVERSE LEAKAGE @ $V_{RWM}$ | MAXIMUM CLAMPING VOLTAGE @ $I_{PPM}$ | MAXIMUM PEAK PULSE CURRENT | MARKING CODE |
|-----------|---------------------------|-------------------|-------|---------|-------------------------------------|--------------------------------------|----------------------------|--------------|
|           | REVERSE STAND-OFF VOLTAGE | $V_{BR}$          |       | @ $I_T$ |                                     |                                      |                            |              |
|           |                           |                   |       |         |                                     |                                      |                            |              |
|           |                           | $V_{RWM}$         | VOLTS |         |                                     |                                      |                            |              |
| VOLTS     | MIN                       | MAX               | mA    | $\mu A$ | VOLTS                               | A                                    |                            |              |
| 1SMB14CA  | 14                        | 15.6              | 17.9  | 1.0     | 5.0                                 | 23.2                                 | 25.8                       | CLKC         |
| 1SMB15CA  | 15                        | 16.7              | 19.2  | 1.0     | 5.0                                 | 24.4                                 | 24.0                       | CLMC         |
| 1SMB16CA  | 16                        | 17.8              | 20.5  | 1.0     | 5.0                                 | 26.0                                 | 23.1                       | CLPC         |
| 1SMB17CA  | 17                        | 18.9              | 21.7  | 1.0     | 5.0                                 | 27.6                                 | 21.7                       | CLRC         |
| 1SMB18CA  | 18                        | 20.0              | 23.3  | 1.0     | 5.0                                 | 29.2                                 | 20.5                       | CLTC         |
| 1SMB20CA  | 20                        | 22.2              | 25.5  | 1.0     | 5.0                                 | 32.4                                 | 18.5                       | CLVC         |
| 1SMB22CA  | 22                        | 24.4              | 28.0  | 1.0     | 5.0                                 | 35.5                                 | 16.9                       | CLXC         |
| 1SMB24CA  | 24                        | 26.7              | 30.7  | 1.0     | 5.0                                 | 38.9                                 | 15.4                       | CLZC         |
| 1SMB26CA  | 26                        | 28.9              | 33.2  | 1.0     | 5.0                                 | 42.1                                 | 14.2                       | CMEC         |
| 1SMB28CA  | 28                        | 31.1              | 35.8  | 1.0     | 5.0                                 | 45.4                                 | 13.2                       | CMGC         |
| 1SMB30CA  | 30                        | 33.3              | 38.3  | 1.0     | 5.0                                 | 48.4                                 | 12.4                       | CMKC         |
| 1SMB33CA  | 33                        | 36.7              | 42.2  | 1.0     | 5.0                                 | 53.3                                 | 11.3                       | CMMC         |
| 1SMB36CA  | 36                        | 40.0              | 46.0  | 1.0     | 5.0                                 | 58.1                                 | 10.3                       | CMPC         |
| 1SMB40CA  | 40                        | 44.4              | 51.1  | 1.0     | 5.0                                 | 64.5                                 | 9.3                        | CMRC         |
| 1SMB43CA  | 43                        | 47.8              | 54.9  | 1.0     | 5.0                                 | 69.4                                 | 8.6                        | CMTC         |
| 1SMB45CA  | 45                        | 50.0              | 57.5  | 1.0     | 5.0                                 | 72.7                                 | 8.3                        | CMVC         |
| 1SMB48CA  | 48                        | 53.3              | 61.3  | 1.0     | 5.0                                 | 77.4                                 | 7.7                        | CMXC         |
| 1SMB51CA  | 51                        | 56.7              | 65.2  | 1.0     | 5.0                                 | 82.4                                 | 7.3                        | CMZC         |
| 1SMB54CA  | 54                        | 60.0              | 69.0  | 1.0     | 5.0                                 | 87.1                                 | 6.9                        | CNEC         |
| 1SMB58CA  | 58                        | 64.4              | 74.1  | 1.0     | 5.0                                 | 93.6                                 | 6.4                        | CNGC         |
| 1SMB60CA  | 60                        | 66.7              | 76.7  | 1.0     | 5.0                                 | 96.8                                 | 6.2                        | CNKC         |
| 1SMB64CA  | 64                        | 71.1              | 81.8  | 1.0     | 5.0                                 | 103                                  | 5.8                        | CNMC         |
| 1SMB70CA  | 70                        | 77.8              | 89.5  | 1.0     | 5.0                                 | 113                                  | 5.3                        | CNPC         |
| 1SMB75CA  | 75                        | 83.3              | 95.8  | 1.0     | 5.0                                 | 121                                  | 4.9                        | CNRC         |
| 1SMB78CA  | 78                        | 86.7              | 99.7  | 1.0     | 5.0                                 | 126                                  | 4.7                        | CNTC         |
| 1SMB85CA  | 85                        | 94.4              | 108.2 | 1.0     | 5.0                                 | 137                                  | 4.4                        | CNVC         |
| 1SMB90CA  | 90                        | 100.0             | 115.5 | 1.0     | 5.0                                 | 146                                  | 4.1                        | CNXC         |
| 1SMB100CA | 100                       | 111.0             | 128.0 | 1.0     | 5.0                                 | 162                                  | 3.7                        | CNZC         |
| 1SMB110CA | 110                       | 122.0             | 140.5 | 1.0     | 5.0                                 | 177                                  | 3.4                        | CPEC         |
| 1SMB120CA | 120                       | 133.0             | 153.0 | 1.0     | 5.0                                 | 193                                  | 3.1                        | CPGC         |
| 1SMB130CA | 130                       | 144.0             | 165.5 | 1.0     | 5.0                                 | 209                                  | 2.9                        | CPKC         |
| 1SMB150CA | 150                       | 167.0             | 192.5 | 1.0     | 5.0                                 | 243                                  | 2.5                        | CPMC         |
| 1SMB160CA | 160                       | 178.0             | 205.0 | 1.0     | 5.0                                 | 259                                  | 2.3                        | CPPC         |
| 1SMB170CA | 170                       | 189.0             | 217.5 | 1.0     | 5.0                                 | 275                                  | 2.2                        | CPRC         |

All Dimensions in Inches (mm).

