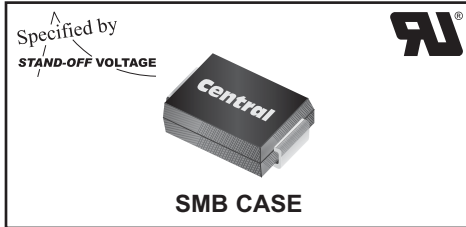


1SMB5.0CA  
THRU  
1SMB170CA

SURFACE MOUNT  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
SILICON TRANSIENT  
VOLTAGE SUPPRESSOR  
600 WATTS, 5.0 THRU 170 VOLTS



www.centrasemi.com



**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.

**MARKING CODE: SEE ELECTRICAL CHARACTERISTICS TABLE**

• This series is UL listed, UL file number E130224

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Peak Power Dissipation (Note 1)

Operating and Storage Junction Temperature

**SYMBOL**

$P_{PK}$  600

$T_J, T_{stg}$  -65 to +150

**UNITS**

W


$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| TYPE      | REVERSE STAND-OFF VOLTAGE | BREAKDOWN VOLTAGE |       | TEST CURRENT | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM CLAMPING VOLTAGE | PEAK PULSE CURRENT (Note 1) | MARKING CODE |
|-----------|---------------------------|-------------------|-------|--------------|---------------------------------|--------------------------|-----------------------------|--------------|
|           | $V_{RWM}$                 | $V_{BR} @ I_T$    |       | $I_T$        | $I_R @ V_{RWM}$                 | $V_C @ I_{pp}$           | $I_{pp}$                    |              |
|           | V                         | MIN V             | MAX V | mA           | $\mu\text{A}$                   | V                        | A                           |              |
| 1SMB5.0CA | 5.0                       | 6.40              | 7.25  | 10           | 1600                            | 9.2                      | 65.2                        | CKEC         |
| 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                       | 50                          | 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                | 11.5  | 1.0          | 10                              | 15.4                     | 39                          | CKVC         |
| 1SMB10CA  | 10                        | 11.1              | 12.8  | 1.0          | 5.0                             | 17                       | 35.3                        | CKXC         |
| 1SMB11CA  | 11                        | 12.2              | 14    | 1.0          | 5.0                             | 18.2                     | 33                          | 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         |
| 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                          | CLMC         |
| 1SMB16CA  | 16                        | 17.8              | 20.5  | 1.0          | 5.0                             | 26                       | 23.1                        | CLPC         |
| 1SMB17CA  | 17                        | 18.9              | 21.7  | 1.0          | 5.0                             | 27.6                     | 21.7                        | CLRC         |
| 1SMB18CA  | 18                        | 20                | 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    | 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         |

Notes: (1) Non-repetitive 10x1,000 $\mu\text{s}$  pulse.

R5 (8-September 2011)

**1SMB5.0CA  
THRU  
1SMB170CA**


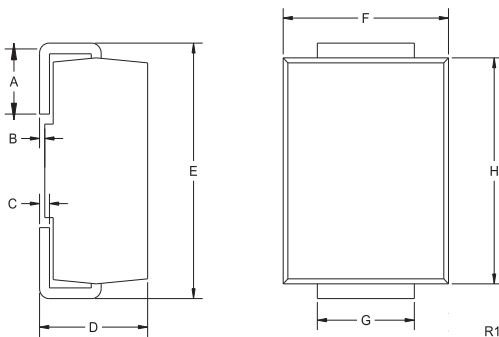
**SURFACE MOUNT  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
SILICON TRANSIENT  
VOLTAGE SUPPRESSOR  
600 WATTS, 5.0 THRU 170 VOLTS**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| TYPE      | REVERSE STAND-OFF VOLTAGE | BREAKDOWN VOLTAGE |       | TEST CURRENT | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM CLAMPING VOLTAGE | PEAK PULSE CURRENT   | MARKING CODE |
|-----------|---------------------------|-------------------|-------|--------------|---------------------------------|--------------------------|----------------------|--------------|
|           | $V_{RWM}$                 | $V_{BR} @ I_T$    |       | $I_T$        | $I_R @ V_{RWM}$                 | $V_C @ I_{PP}$           | (Note 1)<br>$I_{PP}$ |              |
|           | V                         | MIN V             | MAX V | mA           | $\mu\text{A}$                   | V                        | A                    |              |
| 1SMB33CA  | 33                        | 36.7              | 42.2  | 1.0          | 5.0                             | 53.3                     | 11.3                 | CMMC         |
| 1SMB36CA  | 36                        | 40                | 46    | 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                | 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                | 69    | 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               | 115.5 | 1.0          | 5.0                             | 146                      | 4.1                  | CNXC         |
| 1SMB100CA | 100                       | 111               | 128   | 1.0          | 5.0                             | 162                      | 3.7                  | CNZC         |
| 1SMB110CA | 110                       | 122               | 140.5 | 1.0          | 5.0                             | 177                      | 3.4                  | CPEC         |
| 1SMB120CA | 120                       | 133               | 153   | 1.0          | 5.0                             | 193                      | 3.1                  | CPGC         |
| 1SMB130CA | 130                       | 144               | 165.5 | 1.0          | 5.0                             | 209                      | 2.9                  | CPKC         |
| 1SMB150CA | 150                       | 167               | 192.5 | 1.0          | 5.0                             | 243                      | 2.5                  | CPMC         |
| 1SMB160CA | 160                       | 178               | 205   | 1.0          | 5.0                             | 259                      | 2.3                  | CPPC         |
| 1SMB170CA | 170                       | 189               | 217.5 | 1.0          | 5.0                             | 275                      | 2.2                  | CPRC         |

**SMB CASE - MECHANICAL OUTLINE**



| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.030      | 0.060 | 0.76        | 1.52 |
| B      | 0.004      | 0.008 | 0.10        | 0.20 |
| C      | 0.006      | 0.012 | 0.15        | 0.30 |
| D      | 0.086      | 0.096 | 2.18        | 2.44 |
| E      | 0.200      | 0.220 | 5.08        | 5.59 |
| F      | 0.130      | 0.150 | 3.30        | 3.81 |
| G      | 0.077      | 0.083 | 1.96        | 2.11 |
| H      | 0.160      | 0.180 | 4.06        | 4.57 |

SMB (REV: R1)

R5 (8-September 2011)

