

1SMB5.0A  
THRU  
1SMB170A



SURFACE MOUNT SILICON  
UNI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSORS  
600 WATT, 5.0 THRU 170 VOLT

Specified by  
STAND-OFF VOLTAGE



SMB CASE



www.centrasemi.com

#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1SMB5.0A Series types are Surface Mount Uni-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 Bi-directional devices, please refer to the 1SMB5.0CA Series data sheet.

**MARKING CODE: SEE ELECTRICAL CHARACTERISTICS TABLE**

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

Peak Power Dissipation (Note 1)

Peak Forward Surge Current (JEDEC Method)

Operating and Storage Junction Temperature

#### SYMBOL

$P_{DM}$  600

$I_{FSM}$  100

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

#### UNITS

W

A

$^\circ\text{C}$

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

| TYPE     | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE |            | TEST<br>CURRENT | MAXIMUM<br>REVERSE<br>LEAKAGE<br>CURRENT<br>@ $V_{RWM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{pp}$ | PEAK<br>PULSE<br>CURRENT<br>(Note 1) | MARKING<br>CODE |
|----------|---------------------------------|----------------------|------------|-----------------|---------------------------------------------------------|----------------------------------------------|--------------------------------------|-----------------|
|          |                                 | $V_{BR}$ @ $I_T$     |            |                 |                                                         |                                              |                                      |                 |
|          | $V_{RWM}$<br>(V)                | MIN<br>(V)           | MAX<br>(V) | $I_T$<br>(mA)   | $I_R$<br>( $\mu\text{A}$ )                              | $V_C$<br>(V)                                 | $I_{pp}$<br>(A)                      |                 |
| 1SMB5.0A | 5.0                             | 6.40                 | 7.25       | 10              | 800                                                     | 9.2                                          | 65.2                                 | CKE             |
| 1SMB6.0A | 6.0                             | 6.67                 | 7.67       | 10              | 800                                                     | 10.3                                         | 58.3                                 | CKG             |
| 1SMB6.5A | 6.5                             | 7.22                 | 8.30       | 10              | 500                                                     | 11.2                                         | 53.6                                 | CKK             |
| 1SMB7.0A | 7.0                             | 7.78                 | 8.95       | 10              | 200                                                     | 12                                           | 50                                   | CKM             |
| 1SMB7.5A | 7.5                             | 8.33                 | 9.58       | 1.0             | 100                                                     | 12.9                                         | 46.5                                 | CKP             |
| 1SMB8.0A | 8.0                             | 8.89                 | 10.23      | 1.0             | 50                                                      | 13.6                                         | 44.1                                 | CKR             |
| 1SMB8.5A | 8.5                             | 9.44                 | 10.82      | 1.0             | 10                                                      | 14.4                                         | 41.7                                 | CKT             |
| 1SMB9.0A | 9.0                             | 10                   | 11.5       | 1.0             | 5.0                                                     | 15.4                                         | 39                                   | CKV             |
| 1SMB10A  | 10                              | 11.1                 | 12.8       | 1.0             | 5.0                                                     | 17                                           | 35.3                                 | CKX             |
| 1SMB11A  | 11                              | 12.2                 | 14         | 1.0             | 5.0                                                     | 18.2                                         | 33                                   | CKZ             |
| 1SMB12A  | 12                              | 13.3                 | 15.3       | 1.0             | 5.0                                                     | 19.9                                         | 30.2                                 | CLE             |
| 1SMB13A  | 13                              | 14.4                 | 16.5       | 1.0             | 5.0                                                     | 21.5                                         | 27.9                                 | CLG             |
| 1SMB14A  | 14                              | 15.6                 | 17.9       | 1.0             | 5.0                                                     | 23.2                                         | 25.8                                 | CLK             |
| 1SMB15A  | 15                              | 16.7                 | 19.2       | 1.0             | 5.0                                                     | 24.4                                         | 24                                   | CLM             |
| 1SMB16A  | 16                              | 17.8                 | 20.5       | 1.0             | 5.0                                                     | 26                                           | 23.1                                 | CLP             |
| 1SMB17A  | 17                              | 18.9                 | 21.7       | 1.0             | 5.0                                                     | 27.6                                         | 21.7                                 | CLR             |
| 1SMB18A  | 18                              | 20                   | 23.3       | 1.0             | 5.0                                                     | 29.2                                         | 20.5                                 | CLT             |
| 1SMB20A  | 20                              | 22.2                 | 25.5       | 1.0             | 5.0                                                     | 32.4                                         | 18.5                                 | CLV             |
| 1SMB22A  | 22                              | 24.4                 | 28         | 1.0             | 5.0                                                     | 35.5                                         | 16.9                                 | CLX             |
| 1SMB24A  | 24                              | 26.7                 | 30.7       | 1.0             | 5.0                                                     | 38.9                                         | 15.4                                 | CLZ             |
| 1SMB26A  | 26                              | 28.9                 | 33.2       | 1.0             | 5.0                                                     | 42.1                                         | 14.2                                 | CME             |
| 1SMB28A  | 28                              | 31.1                 | 35.8       | 1.0             | 5.0                                                     | 45.4                                         | 13.2                                 | CMG             |
| 1SMB30A  | 30                              | 33.3                 | 38.3       | 1.0             | 5.0                                                     | 48.4                                         | 12.4                                 | CMK             |

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

R5 (22-August 2016)

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1SMB170A



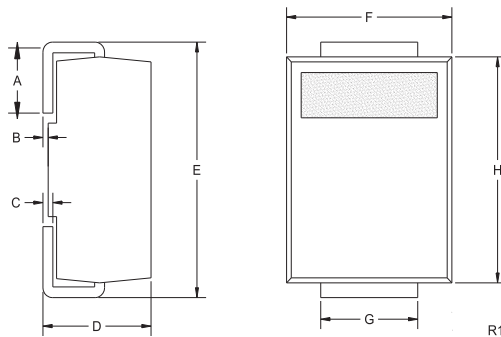
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**ELECTRICAL CHARACTERISTICS - Continued:**

| TYPE     | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE<br>$V_{BR} @ I_T$ |            | TEST<br>CURRENT<br>$I_T$<br>(mA) | MAXIMUM<br>REVERSE<br>LEAKAGE<br>CURRENT<br>@ $V_{RWM}$<br>$I_R$<br>( $\mu$ A) | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{PP}$<br>$V_C$<br>(V) | PEAK<br>PULSE<br>CURRENT<br>(Note 1)<br>$I_{PP}$<br>(A) | MARKING<br>CODE |
|----------|---------------------------------|----------------------------------------|------------|----------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------|-----------------|
|          |                                 | MIN<br>(V)                             | MAX<br>(V) |                                  |                                                                                |                                                              |                                                         |                 |
| 1SMB33A  | 33                              | 36.7                                   | 42.2       | 1.0                              | 5.0                                                                            | 53.3                                                         | 11.3                                                    | CMM             |
| 1SMB36A  | 36                              | 40                                     | 46         | 1.0                              | 5.0                                                                            | 58.1                                                         | 10.3                                                    | CMP             |
| 1SMB40A  | 40                              | 44.4                                   | 51.1       | 1.0                              | 5.0                                                                            | 64.5                                                         | 9.3                                                     | CMR             |
| 1SMB43A  | 43                              | 47.8                                   | 54.9       | 1.0                              | 5.0                                                                            | 69.4                                                         | 8.6                                                     | CMT             |
| 1SMB45A  | 45                              | 50                                     | 57.5       | 1.0                              | 5.0                                                                            | 72.7                                                         | 8.3                                                     | CMV             |
| 1SMB48A  | 48                              | 53.3                                   | 61.3       | 1.0                              | 5.0                                                                            | 77.4                                                         | 7.7                                                     | CMX             |
| 1SMB51A  | 51                              | 56.7                                   | 65.2       | 1.0                              | 5.0                                                                            | 82.4                                                         | 7.3                                                     | CMZ             |
| 1SMB54A  | 54                              | 60                                     | 69         | 1.0                              | 5.0                                                                            | 87.1                                                         | 6.9                                                     | CNE             |
| 1SMB58A  | 58                              | 64.4                                   | 74.1       | 1.0                              | 5.0                                                                            | 93.6                                                         | 6.4                                                     | CNG             |
| 1SMB60A  | 60                              | 66.7                                   | 76.7       | 1.0                              | 5.0                                                                            | 96.8                                                         | 6.2                                                     | CNK             |
| 1SMB64A  | 64                              | 71.1                                   | 81.8       | 1.0                              | 5.0                                                                            | 103                                                          | 5.8                                                     | CNM             |
| 1SMB70A  | 70                              | 77.8                                   | 89.5       | 1.0                              | 5.0                                                                            | 113                                                          | 5.3                                                     | CNP             |
| 1SMB75A  | 75                              | 83.3                                   | 95.8       | 1.0                              | 5.0                                                                            | 121                                                          | 4.9                                                     | CNR             |
| 1SMB78A  | 78                              | 86.7                                   | 99.7       | 1.0                              | 5.0                                                                            | 126                                                          | 4.7                                                     | CNT             |
| 1SMB85A  | 85                              | 94.4                                   | 108.2      | 1.0                              | 5.0                                                                            | 137                                                          | 4.4                                                     | CNV             |
| 1SMB90A  | 90                              | 100                                    | 115.5      | 1.0                              | 5.0                                                                            | 146                                                          | 4.1                                                     | CNX             |
| 1SMB100A | 100                             | 111                                    | 128        | 1.0                              | 5.0                                                                            | 162                                                          | 3.7                                                     | CNZ             |
| 1SMB110A | 110                             | 122                                    | 140.5      | 1.0                              | 5.0                                                                            | 177                                                          | 3.4                                                     | CPE             |
| 1SMB120A | 120                             | 133                                    | 153        | 1.0                              | 5.0                                                                            | 193                                                          | 3.1                                                     | CPG             |
| 1SMB130A | 130                             | 144                                    | 165.5      | 1.0                              | 5.0                                                                            | 209                                                          | 2.9                                                     | CPK             |
| 1SMB150A | 150                             | 167                                    | 192.5      | 1.0                              | 5.0                                                                            | 243                                                          | 2.5                                                     | CPM             |
| 1SMB160A | 160                             | 178                                    | 205        | 1.0                              | 5.0                                                                            | 259                                                          | 2.3                                                     | CPP             |
| 1SMB170A | 170                             | 189                                    | 217.5      | 1.0                              | 5.0                                                                            | 275                                                          | 2.2                                                     | CPR             |

**SMB CASE - MECHANICAL OUTLINE**



| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | 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 (22-August 2016)

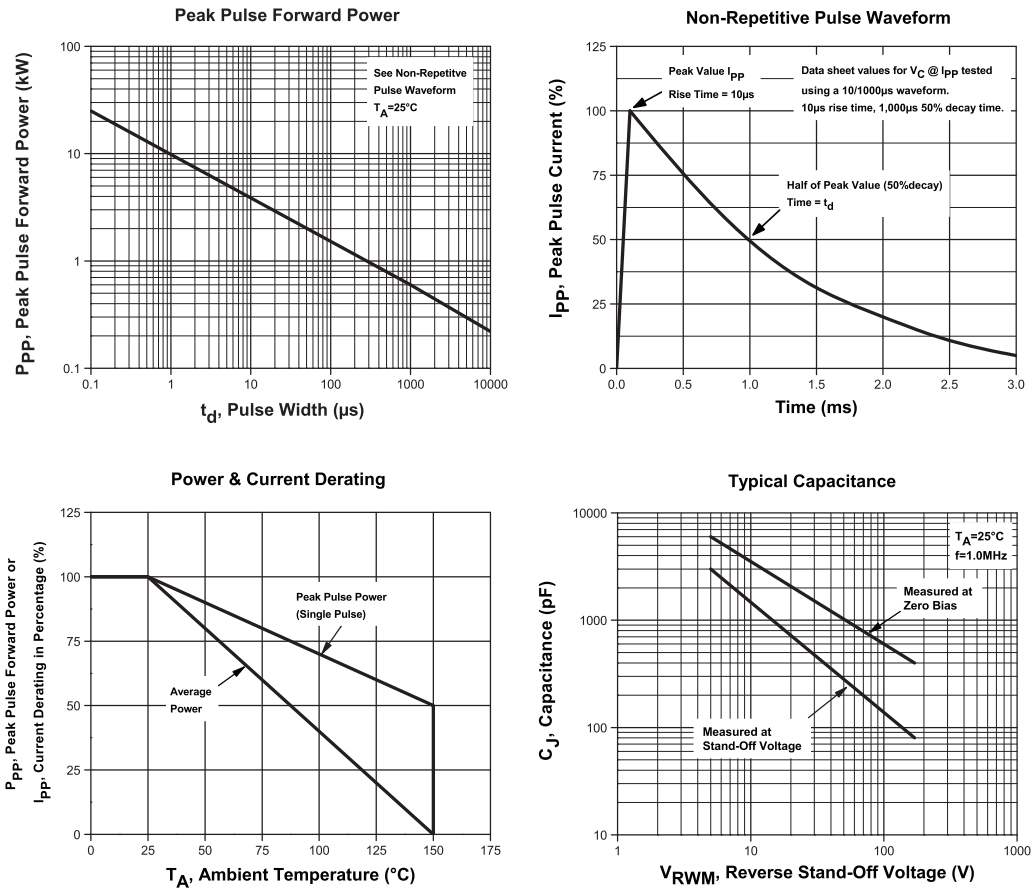
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TYPICAL ELECTRICAL CHARACTERISTICS



R5 (22-August 2016)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### CONTACT US

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