

1SMB5.0CA  
THRU  
1SMB170CA

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



www.centrasemi.com

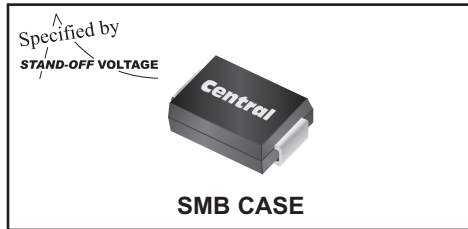
#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1SMB5.0CA series devices 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**



**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<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE |          | TEST<br>CURRENT | MAXIMUM<br>REVERSE<br>LEAKAGE<br>CURRENT | MAXIMUM<br>CLAMPING<br>VOLTAGE | PEAK<br>PULSE<br>CURRENT<br>(Note 1) | MARKING<br>CODE |
|-----------|---------------------------------|----------------------|----------|-----------------|------------------------------------------|--------------------------------|--------------------------------------|-----------------|
|           | $V_{RWM}$                       | $V_{BR} @ I_T$       |          | $I_T$           | $I_R @ V_{RWM}$                          | $V_C @ I_{PP}$                 | $I_{PP}$                             |                 |
|           | V                               | MIN<br>V             | MAX<br>V | mA              | μA                                       | 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            |

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

R7 (11-September 2018)

1SMB5.0CA  
THRU  
1SMB170CA



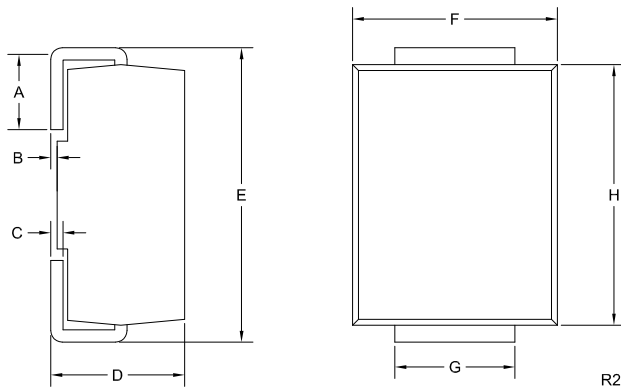
**SURFACE MOUNT SILICON  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSORS  
600 WATT, 5.0 THRU 170 VOLT**



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

| TYPE      | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE |          | TEST<br>CURRENT | MAXIMUM<br>REVERSE<br>LEAKAGE<br>CURRENT | MAXIMUM<br>CLAMPING<br>VOLTAGE | PEAK<br>PULSE<br>CURRENT<br>(Note 1) | MARKING<br>CODE |
|-----------|---------------------------------|----------------------|----------|-----------------|------------------------------------------|--------------------------------|--------------------------------------|-----------------|
|           | $V_{RWM}$                       | $V_{BR} @ I_T$       |          | $I_T$           | $I_R @ V_{RWM}$                          | $V_C @ I_{PP}$                 | $I_{PP}$                             |                 |
|           | V                               | MIN<br>V             | MAX<br>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 | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.030  | 0.060 | 0.76        | 1.52 |
| B      | 0.000  | 0.008 | 0.00        | 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  | 0.191 | 4.06        | 4.85 |

SMB (REV: R2)

R7 (11-September 2018)

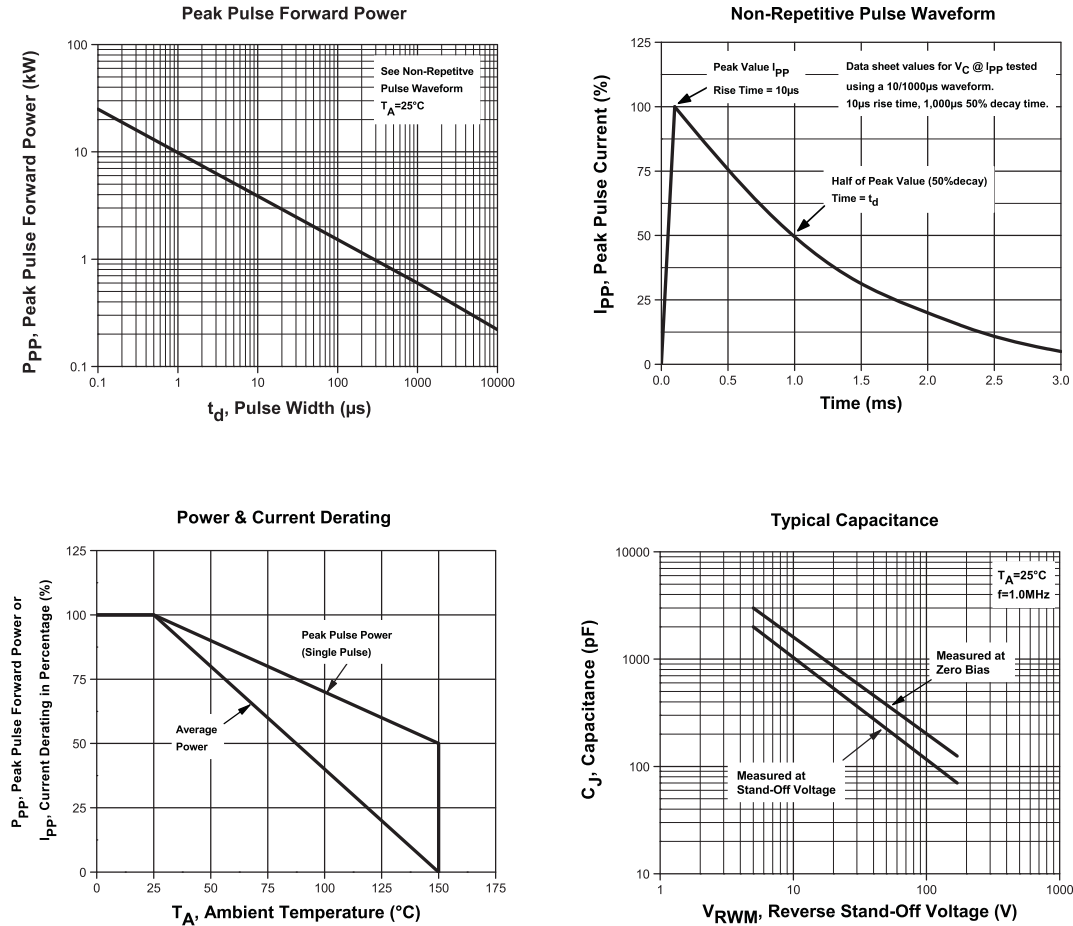
1SMB5.0CA  
THRU  
1SMB170CA



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



TYPICAL ELECTRICAL CHARACTERISTICS



R7 (11-September 2018)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



---

### 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

---

### 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

---

### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9