

1SMC5.0A  
THRU  
1SMC170A



SURFACE MOUNT SILICON  
UNI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSORS  
1500 WATT, 5.0 THRU 170 VOLT

Specified by  
STAND-OFF VOLTAGE



SMC CASE



www.centrasemi.com

#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1SMC5.0A series devices 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 1SMC5.0CA 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

|                |             |                  |
|----------------|-------------|------------------|
| $P_{PK}$       | 1500        | W                |
| $I_{FSM}$      | 200         | A                |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$ |

#### UNITS

**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              | $\mu\text{A}$                            | V                              | A                                    |                 |
| 1SMC5.0A | 5.0                             | 6.40                 | 7.25     | 10              | 1000                                     | 9.2                            | 163                                  | CGDE            |
| 1SMC6.0A | 6.0                             | 6.67                 | 7.67     | 10              | 1000                                     | 10.3                           | 145.6                                | CGDG            |
| 1SMC6.5A | 6.5                             | 7.22                 | 8.30     | 10              | 500                                      | 11.2                           | 133.9                                | CGDK            |
| 1SMC7.0A | 7.0                             | 7.78                 | 8.95     | 10              | 200                                      | 12                             | 125                                  | CGDM            |
| 1SMC7.5A | 7.5                             | 8.33                 | 9.58     | 1.0             | 100                                      | 12.9                           | 116.3                                | CGDP            |
| 1SMC8.0A | 8.0                             | 8.89                 | 10.23    | 1.0             | 50                                       | 13.6                           | 110.3                                | CGDR            |
| 1SMC8.5A | 8.5                             | 9.44                 | 10.82    | 1.0             | 20                                       | 14.4                           | 104.2                                | CGDT            |
| 1SMC9.0A | 9.0                             | 10                   | 11.5     | 1.0             | 10                                       | 15.4                           | 97.4                                 | CGDV            |
| 1SMC10A  | 10                              | 11.1                 | 12.8     | 1.0             | 5.0                                      | 17                             | 88.2                                 | CGDX            |
| 1SMC11A  | 11                              | 12.2                 | 14       | 1.0             | 5.0                                      | 18.2                           | 82.4                                 | CGDZ            |
| 1SMC12A  | 12                              | 13.3                 | 15.3     | 1.0             | 5.0                                      | 19.9                           | 75.3                                 | CGEE            |
| 1SMC13A  | 13                              | 14.4                 | 16.5     | 1.0             | 5.0                                      | 21.5                           | 69.7                                 | CGEG            |
| 1SMC14A  | 14                              | 15.6                 | 17.9     | 1.0             | 5.0                                      | 23.2                           | 64.7                                 | CGEK            |
| 1SMC15A  | 15                              | 16.7                 | 19.2     | 1.0             | 5.0                                      | 24.4                           | 61.5                                 | CGEM            |
| 1SMC16A  | 16                              | 17.8                 | 20.5     | 1.0             | 5.0                                      | 26                             | 57.7                                 | CGEP            |
| 1SMC17A  | 17                              | 18.9                 | 21.7     | 1.0             | 5.0                                      | 27.6                           | 53.3                                 | CGER            |
| 1SMC18A  | 18                              | 20                   | 23.3     | 1.0             | 5.0                                      | 29.2                           | 51.4                                 | CGET            |
| 1SMC20A  | 20                              | 22.2                 | 25.5     | 1.0             | 5.0                                      | 32.4                           | 46.3                                 | CGEV            |
| 1SMC22A  | 22                              | 24.4                 | 28       | 1.0             | 5.0                                      | 35.5                           | 42.2                                 | CGEX            |
| 1SMC24A  | 24                              | 26.7                 | 30.7     | 1.0             | 5.0                                      | 38.9                           | 38.6                                 | CGEZ            |
| 1SMC26A  | 26                              | 28.9                 | 33.2     | 1.0             | 5.0                                      | 42.1                           | 35.6                                 | CGFE            |
| 1SMC28A  | 28                              | 31.1                 | 35.8     | 1.0             | 5.0                                      | 45.4                           | 33                                   | CGFG            |
| 1SMC30A  | 30                              | 33.3                 | 38.3     | 1.0             | 5.0                                      | 48.4                           | 31                                   | CGFK            |

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

R7 (22-August 2016)

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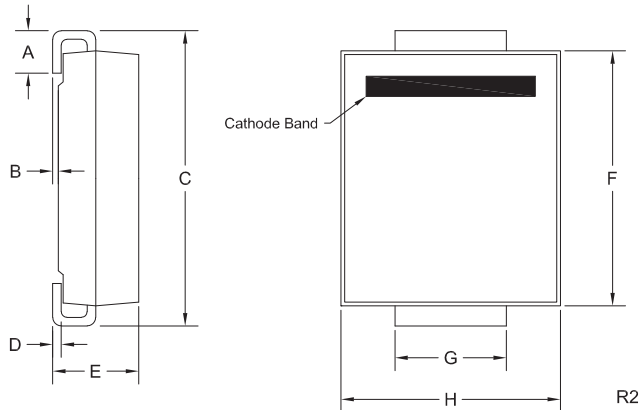
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| TYPE     | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE         |          | TEST<br>CURRENT | MAXIMUM<br>REVERSE<br>LEAKAGE<br>CURRENT<br>$I_R$ @ $V_{RWM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>$V_C$ @ $I_{PP}$ | PEAK<br>PULSE<br>CURRENT<br>(Note 1)<br>$I_{PP}$ | MARKING<br>CODE |
|----------|---------------------------------|------------------------------|----------|-----------------|---------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------|-----------------|
|          | $V_{RWM}$<br>V                  | $V_{BR}$ @ $I_T$<br>MIN<br>V | MAX<br>V | $I_T$<br>mA     | $\mu\text{A}$                                                 | V                                                  | A                                                |                 |
| 1SMC33A  | 33                              | 36.7                         | 42.2     | 1.0             | 5.0                                                           | 53.3                                               | 28.1                                             | CGFM            |
| 1SMC36A  | 36                              | 40                           | 46       | 1.0             | 5.0                                                           | 58.1                                               | 25.8                                             | CGFP            |
| 1SMC40A  | 40                              | 44.4                         | 51.1     | 1.0             | 5.0                                                           | 64.5                                               | 23.2                                             | CGFR            |
| 1SMC43A  | 43                              | 47.8                         | 54.9     | 1.0             | 5.0                                                           | 69.4                                               | 21.6                                             | CGFT            |
| 1SMC45A  | 45                              | 50                           | 57.5     | 1.0             | 5.0                                                           | 72.7                                               | 20.6                                             | CGFV            |
| 1SMC48A  | 48                              | 53.3                         | 61.3     | 1.0             | 5.0                                                           | 77.4                                               | 19.4                                             | CGFX            |
| 1SMC51A  | 51                              | 56.7                         | 65.2     | 1.0             | 5.0                                                           | 82.4                                               | 18.2                                             | CGFZ            |
| 1SMC54A  | 54                              | 60                           | 69       | 1.0             | 5.0                                                           | 87.1                                               | 17.2                                             | CGGE            |
| 1SMC58A  | 58                              | 64.4                         | 74.1     | 1.0             | 5.0                                                           | 93.6                                               | 16                                               | CGGG            |
| 1SMC60A  | 60                              | 66.7                         | 76.7     | 1.0             | 5.0                                                           | 96.8                                               | 15.5                                             | CGGK            |
| 1SMC64A  | 64                              | 71.1                         | 81.8     | 1.0             | 5.0                                                           | 103                                                | 14.6                                             | CGGM            |
| 1SMC70A  | 70                              | 77.8                         | 89.5     | 1.0             | 5.0                                                           | 113                                                | 13.3                                             | CGGP            |
| 1SMC75A  | 75                              | 83.3                         | 95.8     | 1.0             | 5.0                                                           | 121                                                | 12.4                                             | CGGR            |
| 1SMC78A  | 78                              | 86.7                         | 99.7     | 1.0             | 5.0                                                           | 126                                                | 11.4                                             | CGGT            |
| 1SMC85A  | 85                              | 94.4                         | 108.2    | 1.0             | 5.0                                                           | 137                                                | 10.4                                             | CGGV            |
| 1SMC90A  | 90                              | 100                          | 115.5    | 1.0             | 5.0                                                           | 146                                                | 10.3                                             | CGGX            |
| 1SMC100A | 100                             | 111                          | 128      | 1.0             | 5.0                                                           | 162                                                | 9.3                                              | CGGZ            |
| 1SMC110A | 110                             | 122                          | 140.5    | 1.0             | 5.0                                                           | 177                                                | 8.4                                              | CGHE            |
| 1SMC120A | 120                             | 133                          | 153      | 1.0             | 5.0                                                           | 193                                                | 7.9                                              | CGHG            |
| 1SMC130A | 130                             | 144                          | 165.5    | 1.0             | 5.0                                                           | 209                                                | 7.2                                              | CGHK            |
| 1SMC150A | 150                             | 167                          | 192.5    | 1.0             | 5.0                                                           | 243                                                | 6.2                                              | CGHM            |
| 1SMC160A | 160                             | 178                          | 205      | 1.0             | 5.0                                                           | 259                                                | 5.8                                              | CGHP            |
| 1SMC170A | 170                             | 189                          | 217.5    | 1.0             | 5.0                                                           | 275                                                | 5.5                                              | CGHR            |

#### SMC CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.030  | 0.060 | 0.76        | 1.52 |
| B      | 0.002  | 0.008 | 0.05        | 0.20 |
| C      | 0.305  | 0.320 | 7.75        | 8.13 |
| D      | 0.006  | 0.012 | 0.15        | 0.31 |
| E      | 0.079  | 0.103 | 2.00        | 2.62 |
| F      | 0.260  | 0.280 | 6.60        | 7.11 |
| G      | 0.108  | 0.128 | 2.75        | 3.25 |
| H      | 0.220  | 0.245 | 5.59        | 6.22 |

SMC (REV: R2)

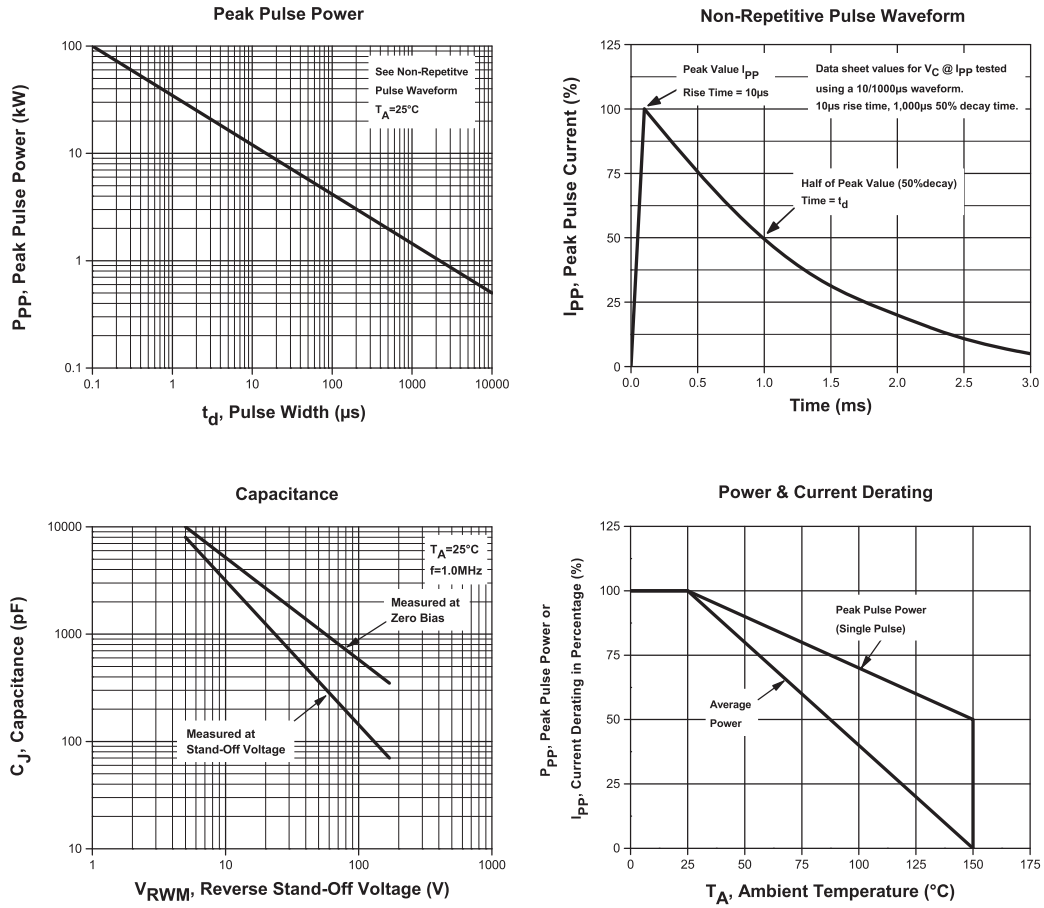
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TYPICAL ELECTRICAL CHARACTERISTICS



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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)
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- 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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