

1SMC5.0A  
THRU  
1SMC170A

SURFACE MOUNT  
UNI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
SILICON TRANSIENT  
VOLTAGE SUPPRESSOR  
1500 WATTS, 5.0 THRU 170 VOLTS



www.centrasemi.com

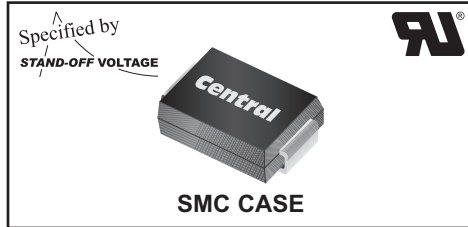
#### DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1SMC5.0A 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 1SMC5.0CA 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)  
Peak Forward Surge Current (JEDEC Method)  
Operating and Storage Junction Temperature

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

**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 |
|----------|---------------------------------|----------------------|-------|-----------------|---------------------------------------------------------|----------------------------------------------|--------------------------------------|-----------------|
|          | $V_{RWM}$<br>(V)                | $V_{BR}$ @ $I_T$     |       | $I_T$<br>(mA)   | $I_R$<br>( $\mu\text{A}$ )                              | $V_C$<br>(V)                                 | $I_{pp}$<br>(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.

R5 (20-November 2009)

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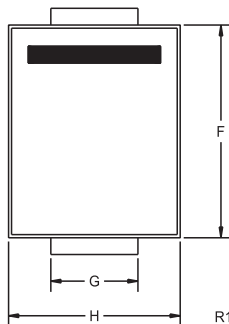
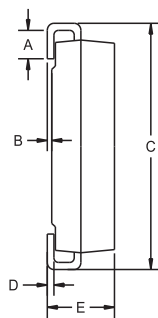
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ELECTRICAL CHARACTERISTICS - Continued:

| TYPE     | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE<br>$V_{BR}$ @ $I_T$ |            | TEST<br>CURRENT | 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 |
|----------|---------------------------------|------------------------------------------|------------|-----------------|---------------------------------------------------------|----------------------------------------------|--------------------------------------|-----------------|
|          | $V_{RWM}$<br>(V)                | MIN<br>(V)                               | MAX<br>(V) | $I_T$<br>(mA)   | $I_R$<br>( $\mu$ A)                                     | $V_C$<br>(V)                                 | $I_{PP}$<br>(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      | 0.004  | 0.008 | 0.10        | 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  | 0.124 | 2.75        | 3.15 |
| H      | 0.220  | 0.245 | 5.59        | 6.22 |

SMC (REV: R1)

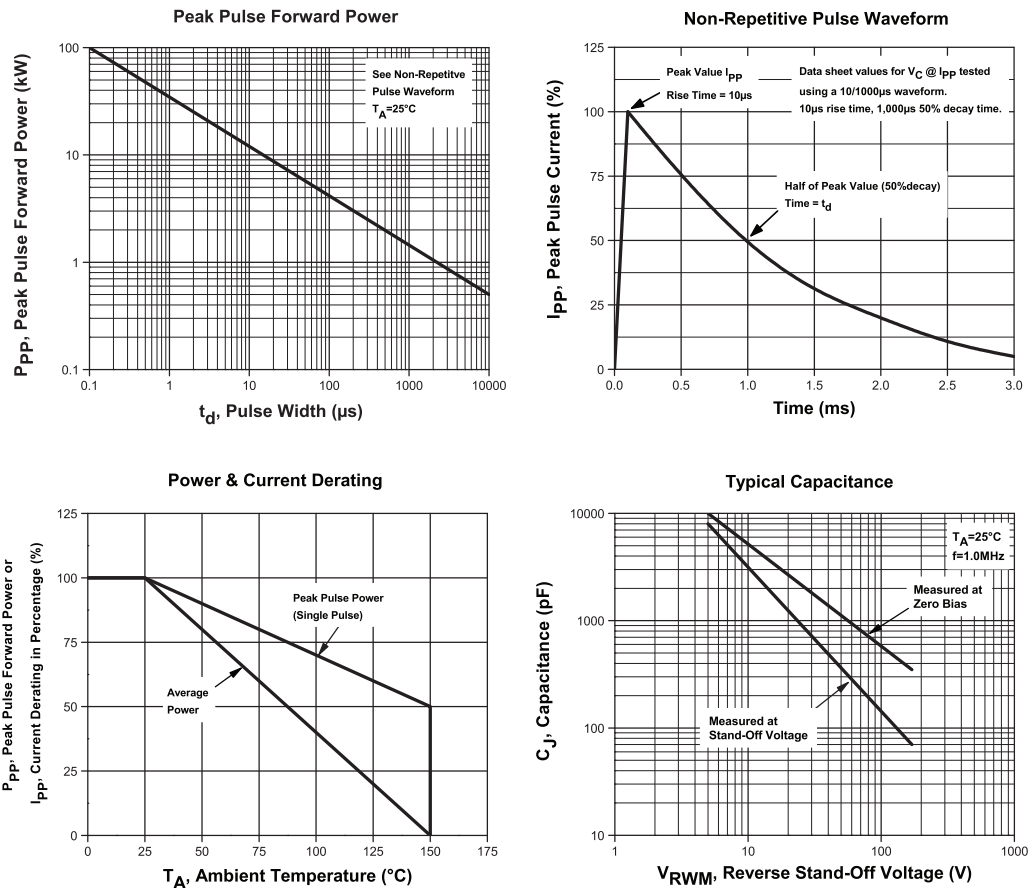
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# TYPICAL ELECTRICAL CHARACTERISTICS



R5 (20-November 2009)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.