

1.5SMC6.8CA  
THRU  
1.5SMC220CA

SURFACE MOUNT SILICON  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSORS  
1500 WATT, 6.8 THRU 220 VOLT



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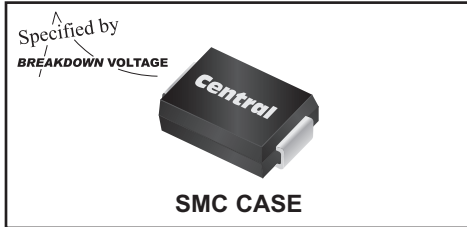
**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 1.5SMC6.8CA 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 1.5SMC6.8A 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**

$P_{PK}$  1500  
 $T_J, T_{stg}$  -65 to +150

**UNITS**

W  
 $^\circ\text{C}$

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

| TYPE        | BREAKDOWN VOLTAGE |       |       | TEST CURRENT<br>$I_T$<br>mA | WORKING PEAK REVERSE VOLTAGE<br>$V_{RWM}$<br>V | MAXIMUM REVERSE LEAKAGE CURRENT<br>$I_R @ V_{RWM}$<br>$\mu\text{A}$ | MAXIMUM CLAMPING VOLTAGE<br>$V_C @ I_{PP}$<br>V | PEAK PULSE CURRENT (Note 1)<br>$I_{PP}$<br>A | MAXIMUM TEMPERATURE COEFFICIENT<br>$\theta_{VBR}$<br>%/ $^\circ\text{C}$ | MARKING CODE |
|-------------|-------------------|-------|-------|-----------------------------|--|---|---|--|--|--------------|
|             | $V_{BR} @ I_T$    |       |       |                             |  |   |   |  |  |              |
|             | MIN V             | NOM V | MAX V |                             |  |   |   |  |  |              |
| 1.5SMC6.8CA | 6.45              | 6.8   | 7.14  | 10                          | 5.8  | 2000  | 10.5  | 143  | 0.057  | C6V8C        |
| 1.5SMC7.5CA | 7.13              | 7.5   | 7.88  | 10                          | 6.4  | 1000  | 11.3  | 132  | 0.061  | C7V5C        |
| 1.5SMC8.2CA | 7.79              | 8.2   | 8.61  | 10                          | 7.02   | 400   | 12.1  | 124  | 0.065  | C8V2C        |
| 1.5SMC9.1CA | 8.65              | 9.1   | 9.55  | 1.0                         | 7.78   | 100   | 13.4  | 112  | 0.068  | C9V1C        |
| 1.5SMC10CA  | 9.5               | 10    | 10.5  | 1.0                         | 8.55   | 20  | 14.5  | 103  | 0.073  | C10C         |
| 1.5SMC11CA  | 10.5              | 11    | 11.6  | 1.0                         | 9.4  | 5.0   | 15.6  | 96   | 0.075  | C11C         |
| 1.5SMC12CA  | 11.4              | 12    | 12.6  | 1.0                         | 10.2   | 5.0   | 16.7  | 90   | 0.078  | C12C         |
| 1.5SMC13CA  | 12.4              | 13    | 13.7  | 1.0                         | 11.1   | 5.0   | 18.2  | 82   | 0.081  | C13C         |
| 1.5SMC15CA  | 14.3              | 15    | 15.8  | 1.0                         | 12.8   | 5.0   | 21.2  | 71   | 0.084  | C15C         |
| 1.5SMC16CA  | 15.2              | 16    | 16.8  | 1.0                         | 13.6   | 5.0   | 22.5  | 67   | 0.086  | C16C         |
| 1.5SMC18CA  | 17.1              | 18    | 18.9  | 1.0                         | 15.3   | 5.0   | 25.2  | 59.5   | 0.088  | C18C         |
| 1.5SMC20CA  | 19.0              | 20    | 21.0  | 1.0                         | 17.1   | 5.0   | 27.7  | 54   | 0.090  | C20C         |
| 1.5SMC22CA  | 20.9              | 22    | 23.1  | 1.0                         | 18.8   | 5.0   | 30.6  | 49   | 0.092  | C22C         |
| 1.5SMC24CA  | 22.8              | 24    | 25.2  | 1.0                         | 20.5   | 5.0   | 33.2  | 45   | 0.094  | C24C         |
| 1.5SMC27CA  | 25.7              | 27    | 28.4  | 1.0                         | 23.1   | 5.0   | 37.5  | 40   | 0.096  | C27C         |
| 1.5SMC30CA  | 28.5              | 30    | 31.5  | 1.0                         | 25.6   | 5.0   | 41.4  | 36   | 0.097  | C30C         |
| 1.5SMC33CA  | 31.4              | 33    | 34.7  | 1.0                         | 28.2   | 5.0   | 45.7  | 33   | 0.098  | C33C         |
| 1.5SMC36CA  | 34.2              | 36    | 37.8  | 1.0                         | 30.8   | 5.0   | 49.9  | 30   | 0.099  | C36C         |
| 1.5SMC39CA  | 37.1              | 39    | 41    | 1.0                         | 33.3   | 5.0   | 53.9  | 28   | 0.100  | C39C         |

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

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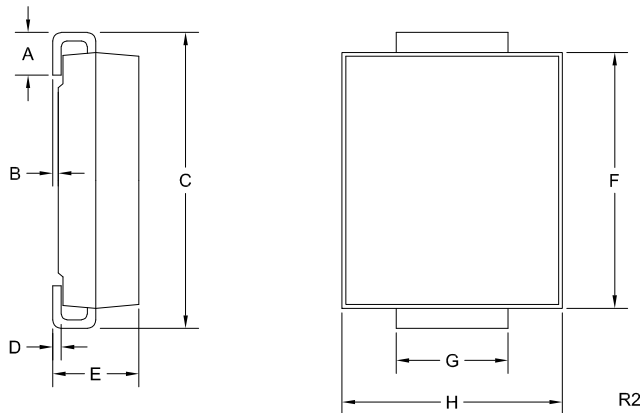
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| TYPE        | BREAKDOWN VOLTAGE |       |       | TEST CURRENT<br>$I_T$<br>mA | WORKING PEAK REVERSE VOLTAGE<br>$V_{RWM}$<br>V | MAXIMUM REVERSE LEAKAGE CURRENT<br>$I_R @ V_{RWM}$<br>$\mu\text{A}$ | MAXIMUM CLAMPING VOLTAGE<br>$V_C @ I_{PP}$<br>V | PEAK PULSE CURRENT (Note 1)<br>$I_{PP}$<br>A | MAXIMUM TEMPERATURE COEFFICIENT<br>$\theta_{V_{BR}}$<br>%/ $^{\circ}\text{C}$ | MARKING CODE |
|-------------|-------------------|-------|-------|-----------------------------|--|---|---|--|---|--------------|
|             | $V_{BR} @ I_T$    |       |       |                             |  |   |   |  |   |              |
|             | MIN V             | NOM V | MAX V |                             |  |   |   |  |   |              |
| 1.5SMC43CA  | 40.9              | 43    | 45.2  | 1.0                         | 36.8   | 5.0   | 59.3  | 25.3   | 0.101   | C43C         |
| 1.5SMC47CA  | 44.7              | 47    | 49.4  | 1.0                         | 40.2   | 5.0   | 64.8  | 23.2   | 0.101   | C47C         |
| 1.5SMC51CA  | 48.5              | 51    | 53.6  | 1.0                         | 43.6   | 5.0   | 70.1  | 21.4   | 0.102   | C51C         |
| 1.5SMC56CA  | 53.2              | 56    | 58.8  | 1.0                         | 47.8   | 5.0   | 77  | 19.5   | 0.103   | C56C         |
| 1.5SMC62CA  | 58.9              | 62    | 65.1  | 1.0                         | 53.0   | 5.0   | 85  | 17.7   | 0.104   | C62C         |
| 1.5SMC68CA  | 64.6              | 68    | 71.4  | 1.0                         | 58.1   | 5.0   | 92  | 16.3   | 0.104   | C68C         |
| 1.5SMC75CA  | 71.3              | 75    | 78.8  | 1.0                         | 64.1   | 5.0   | 103   | 14.6   | 0.105   | C75C         |
| 1.5SMC82CA  | 77.9              | 82    | 86.1  | 1.0                         | 70.1   | 5.0   | 113   | 13.3   | 0.105   | C82C         |
| 1.5SMC91CA  | 86.5              | 91    | 95.5  | 1.0                         | 77.8   | 5.0   | 125   | 12   | 0.106   | C91C         |
| 1.5SMC100CA | 95.0              | 100   | 105   | 1.0                         | 85.5   | 5.0   | 137   | 11   | 0.106   | C100C        |
| 1.5SMC110CA | 104.5             | 110   | 115.5 | 1.0                         | 94.0   | 5.0   | 152   | 9.9  | 0.107   | C110C        |
| 1.5SMC120CA | 114               | 120   | 126   | 1.0                         | 102  | 5.0   | 165   | 9.1  | 0.107   | C120C        |
| 1.5SMC130CA | 123.5             | 130   | 136.5 | 1.0                         | 111  | 5.0   | 179   | 8.4  | 0.107   | C130C        |
| 1.5SMC150CA | 142.5             | 150   | 157.5 | 1.0                         | 128  | 5.0   | 207   | 7.2  | 0.108   | C150C        |
| 1.5SMC160CA | 152               | 160   | 168   | 1.0                         | 136  | 5.0   | 219   | 6.8  | 0.108   | C160C        |
| 1.5SMC170CA | 161.5             | 170   | 178.5 | 1.0                         | 145  | 5.0   | 234   | 6.4  | 0.108   | C170C        |
| 1.5SMC180CA | 171               | 180   | 189   | 1.0                         | 154  | 5.0   | 246   | 6.1  | 0.108   | C180C        |
| 1.5SMC200CA | 190               | 200   | 210   | 1.0                         | 171  | 5.0   | 274   | 5.5  | 0.108   | C200C        |
| 1.5SMC220CA | 209               | 220   | 231   | 1.0                         | 185  | 5.0   |   | 4.6  | 0.108   | C220C        |

**SMC CASE - MECHANICAL OUTLINE**



| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | 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)

R9 (17-March 2016)

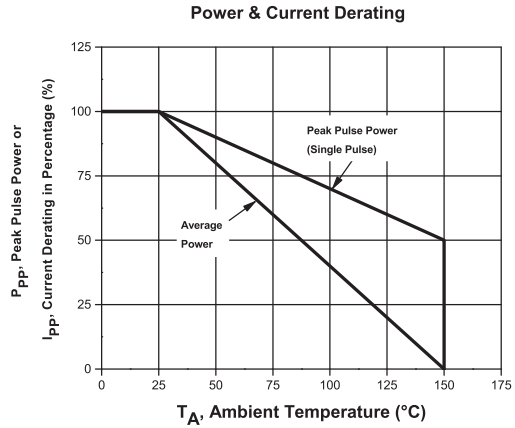
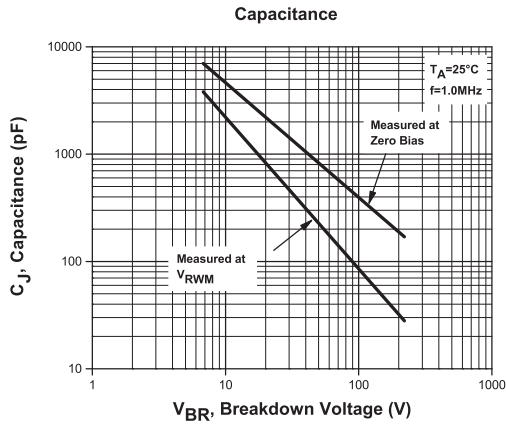
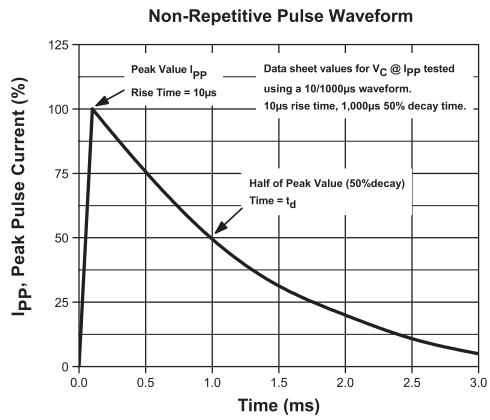
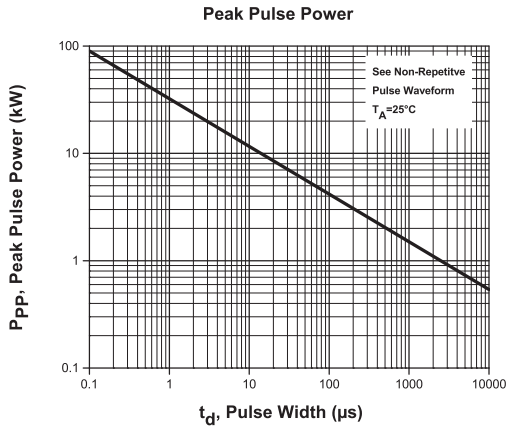
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### TYPICAL ELECTRICAL CHARACTERISTICS



R9 (17-March 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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