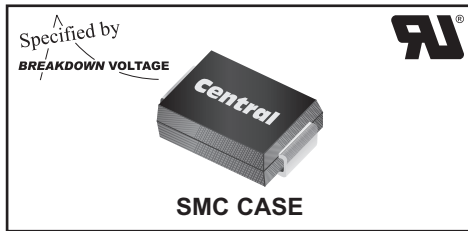


1.5SMC6.8A  
THRU  
1.5SMC220A

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



www.centrasemi.com



#### DESCRIPTION:

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

$P_{PK}$

$I_{FSM}$

$T_J, T_{stg}$

1500

200

-65 to +150

**UNITS**

W

A

$^\circ\text{C}$

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

| TYPE       | BREAKDOWN VOLTAGE |       |       | TEST CURRENT<br><br>$I_T$<br><br>mA | WORKING PEAK REVERSE VOLTAGE<br><br>$V_{RWM}$<br><br>V | MAXIMUM REVERSE LEAKAGE CURRENT<br><br>$I_R @ V_{RWM}$<br><br>$\mu A$ | MAXIMUM REVERSE SURGE CURRENT (Note 1)<br><br>$I_{RSM}$<br><br>A | MAXIMUM REVERSE VOLTAGE<br><br>$V_{RSM} @ I_{RSM}$<br><br>V | MAXIMUM TEMPERATURE COEFFICIENT<br><br>$\theta V_{BR}$<br><br>% / °C | MARKING CODE |
|------------|-------------------|-------|-------|-------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|--------------|
|            | $V_{BR} @ I_T$    |       |       |                                     |                                                        |                                                                       |                                                                  |                                                             |                                                                      |              |
|            | MIN V             | NOM V | MAX V |                                     |                                                        |                                                                       |                                                                  |                                                             |                                                                      |              |
| 1.5SMC6.8A | 6.45              | 6.8   | 7.14  | 10                                  | 5.8                                                    | 1000                                                                  | 143                                                              | 10.5                                                        | 0.057                                                                | C6V8A        |
| 1.5SMC7.5A | 7.13              | 7.5   | 7.88  | 10                                  | 6.4                                                    | 500                                                                   | 132                                                              | 11.3                                                        | 0.061                                                                | C7V5A        |
| 1.5SMC8.2A | 7.79              | 8.2   | 8.61  | 10                                  | 7.02                                                   | 200                                                                   | 124                                                              | 12.1                                                        | 0.065                                                                | C8V2A        |
| 1.5SMC9.1A | 8.65              | 9.1   | 9.55  | 1.0                                 | 7.78                                                   | 50                                                                    | 112                                                              | 13.4                                                        | 0.068                                                                | C9V1A        |
| 1.5SMC10A  | 9.5               | 10    | 10.5  | 1.0                                 | 8.55                                                   | 10                                                                    | 103                                                              | 14.5                                                        | 0.073                                                                | C10A         |
| 1.5SMC11A  | 10.5              | 11    | 11.6  | 1.0                                 | 9.4                                                    | 5                                                                     | 96                                                               | 15.6                                                        | 0.075                                                                | C11A         |
| 1.5SMC12A  | 11.4              | 12    | 12.6  | 1.0                                 | 10.2                                                   | 5                                                                     | 90                                                               | 16.7                                                        | 0.078                                                                | C12A         |
| 1.5SMC13A  | 12.4              | 13    | 13.7  | 1.0                                 | 11.1                                                   | 5                                                                     | 82                                                               | 18.2                                                        | 0.081                                                                | C13A         |
| 1.5SMC15A  | 14.3              | 15    | 15.8  | 1.0                                 | 12.8                                                   | 5                                                                     | 71                                                               | 21.2                                                        | 0.084                                                                | C15A         |
| 1.5SMC16A  | 15.2              | 16    | 16.8  | 1.0                                 | 13.6                                                   | 5                                                                     | 67                                                               | 22.5                                                        | 0.086                                                                | C16A         |
| 1.5SMC18A  | 17.1              | 18    | 18.9  | 1.0                                 | 15.3                                                   | 5                                                                     | 59.5                                                             | 25.2                                                        | 0.088                                                                | C18A         |
| 1.5SMC20A  | 19.0              | 20    | 21.0  | 1.0                                 | 17.1                                                   | 5                                                                     | 54                                                               | 27.7                                                        | 0.090                                                                | C20A         |
| 1.5SMC22A  | 20.9              | 22    | 23.1  | 1.0                                 | 18.8                                                   | 5                                                                     | 49                                                               | 30.6                                                        | 0.092                                                                | C22A         |
| 1.5SMC24A  | 22.8              | 24    | 25.2  | 1.0                                 | 20.5                                                   | 5                                                                     | 45                                                               | 33.2                                                        | 0.094                                                                | C24A         |
| 1.5SMC27A  | 25.7              | 27    | 28.4  | 1.0                                 | 23.1                                                   | 5                                                                     | 40                                                               | 37.5                                                        | 0.096                                                                | C27A         |
| 1.5SMC30A  | 28.5              | 30    | 31.5  | 1.0                                 | 25.6                                                   | 5                                                                     | 36                                                               | 41.4                                                        | 0.097                                                                | C30A         |
| 1.5SMC33A  | 31.4              | 33    | 34.7  | 1.0                                 | 28.2                                                   | 5                                                                     | 33                                                               | 45.7                                                        | 0.098                                                                | C33A         |
| 1.5SMC36A  | 34.2              | 36    | 37.8  | 1.0                                 | 30.8                                                   | 5                                                                     | 30                                                               | 49.9                                                        | 0.099                                                                | C36A         |
| 1.5SMC39A  | 37.1              | 39    | 41    | 1.0                                 | 33.3                                                   | 5                                                                     | 28                                                               | 53.9                                                        | 0.100                                                                | C39A         |

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

R7 (11-September 2013)

1.5SMC6.8A  
THRU  
1.5SMC220A



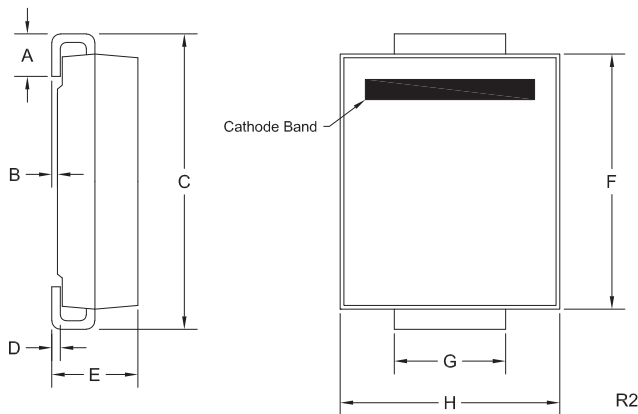
SURFACE MOUNT SILICON  
UNI-DIRECTIONAL  
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TRANSIENT VOLTAGE SUPPRESSORS  
1500 WATT, 6.8 THRU 220 VOLT



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

| TYPE       | BREAKDOWN VOLTAGE |       |       | TEST CURRENT | WORKING PEAK REVERSE VOLTAGE | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM REVERSE SURGE CURRENT (Note 1) | MAXIMUM REVERSE VOLTAGE | MAXIMUM TEMPERATURE COEFFICIENT | MARKING CODE |
|------------|-------------------|-------|-------|--------------|------------------------------|---------------------------------|----------------------------------------|-------------------------|---------------------------------|--------------|
|            | $V_{BR} @ I_T$    |       |       | $I_T$        | $V_{RWM}$                    | $I_R @ V_{RWM}$                 | $I_{RSM}$                              | $V_{RSM} @ I_{RSM}$     | $\theta V_{BR}$                 |              |
|            | MIN V             | NOM V | MAX V | mA           | V                            | $\mu\text{A}$                   | A                                      | V                       | % / $^\circ\text{C}$            |              |
| 1.5SMC43A  | 40.9              | 43    | 45.2  | 1.0          | 36.8                         | 5                               | 25.3                                   | 59.3                    | 0.101                           | C43A         |
| 1.5SMC47A  | 44.7              | 47    | 49.4  | 1.0          | 40.2                         | 5                               | 23.2                                   | 64.8                    | 0.101                           | C47A         |
| 1.5SMC51A  | 48.5              | 51    | 53.6  | 1.0          | 43.6                         | 5                               | 21.4                                   | 70.1                    | 0.102                           | C51A         |
| 1.5SMC56A  | 53.2              | 56    | 58.8  | 1.0          | 47.8                         | 5                               | 19.5                                   | 77                      | 0.103                           | C56A         |
| 1.5SMC62A  | 58.9              | 62    | 65.1  | 1.0          | 53.0                         | 5                               | 17.7                                   | 85                      | 0.104                           | C62A         |
| 1.5SMC68A  | 64.6              | 68    | 71.4  | 1.0          | 58.1                         | 5                               | 16.3                                   | 92                      | 0.104                           | C68A         |
| 1.5SMC75A  | 71.3              | 75    | 78.8  | 1.0          | 64.1                         | 5                               | 14.6                                   | 103                     | 0.105                           | C75A         |
| 1.5SMC82A  | 77.9              | 82    | 86.1  | 1.0          | 70.1                         | 5                               | 13.3                                   | 113                     | 0.105                           | C82A         |
| 1.5SMC91A  | 86.5              | 91    | 95.5  | 1.0          | 77.8                         | 5                               | 12                                     | 125                     | 0.106                           | C91A         |
| 1.5SMC100A | 95.0              | 100   | 105   | 1.0          | 85.5                         | 5                               | 11                                     | 137                     | 0.106                           | C100A        |
| 1.5SMC110A | 104.5             | 110   | 115.5 | 1.0          | 94.0                         | 5                               | 9.9                                    | 152                     | 0.107                           | C110A        |
| 1.5SMC120A | 114               | 120   | 126   | 1.0          | 102                          | 5                               | 9.1                                    | 165                     | 0.107                           | C120A        |
| 1.5SMC130A | 123.5             | 130   | 136.5 | 1.0          | 111                          | 5                               | 8.4                                    | 179                     | 0.107                           | C130A        |
| 1.5SMC150A | 142.5             | 150   | 157.5 | 1.0          | 128                          | 5                               | 7.2                                    | 207                     | 0.108                           | C150A        |
| 1.5SMC160A | 152               | 160   | 168   | 1.0          | 136                          | 5                               | 6.8                                    | 219                     | 0.108                           | C160A        |
| 1.5SMC170A | 161.5             | 170   | 178.5 | 1.0          | 145                          | 5                               | 6.4                                    | 234                     | 0.108                           | C170A        |
| 1.5SMC180A | 171               | 180   | 189   | 1.0          | 154                          | 5                               | 6.1                                    | 246                     | 0.108                           | C180A        |
| 1.5SMC200A | 190               | 200   | 210   | 1.0          | 171                          | 5                               | 5.5                                    | 274                     | 0.108                           | C200A        |
| 1.5SMC220A | 209               | 220   | 231   | 1.0          | 185                          | 5                               | 4.6                                    | 328                     | 0.108                           | C220A        |

#### 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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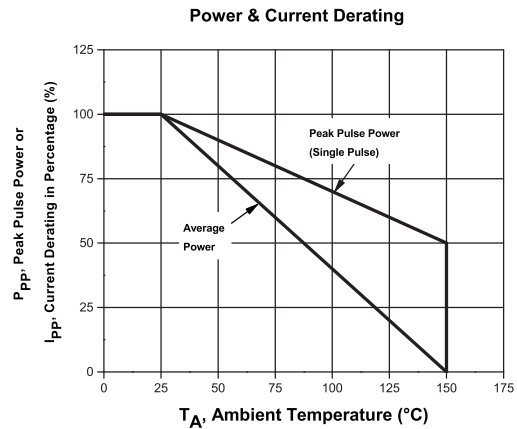
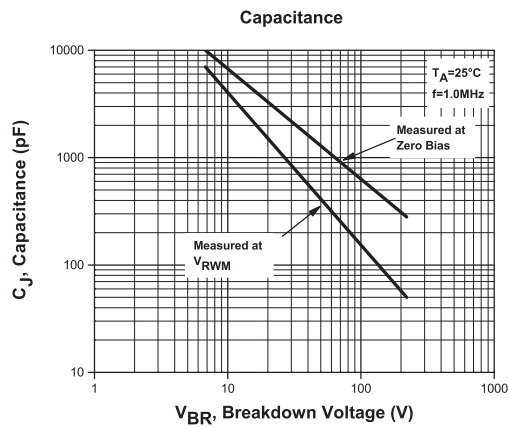
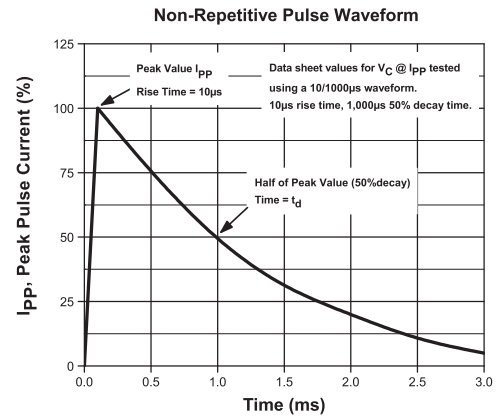
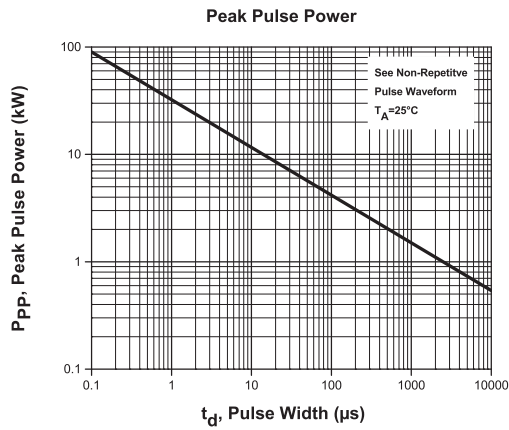
1.5SMC6.8A  
THRU  
1.5SMC220A



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1500 WATT, 6.8 THRU 220 VOLT



## TYPICAL ELECTRICAL CHARACTERISTICS



R7 (11-September 2013)

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

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- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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