

# Transient Voltage Suppressor Diode

## **1.5SMC200A**

(1.5SMC6.8 thru 1.5SMC220CA Series)

Breakdown-Voltage 6.8 to 220V

Peak Pulse Power 1500W


# DATASHEET

*OEM – Central Semiconductor Corp.*

Source: Central Databook 2004

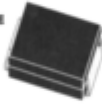

*Datasheet Rev. 1.3 – 09/19 – data without warranty / liability*

1.5SMC6.8CA  
THRU  
1.5SMC220CA



**SURFACE MOUNT  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
SILICON TRANSIENT  
VOLTAGE SUPPRESSOR  
1500 WATTS, 6.8 THRU 220 VOLTS**

Specified by  
BREAKDOWN VOLTAGE

**SMC CASE**

• This series is UL listed, UL file number E130224

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

Peak Power Dissipation  
Peak Forward Surge Current (JEDEC Method)  
Operating and Storage  
Junction Temperature

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $P_{PM}$       | 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 NO.    | BREAKDOWN VOLTAGE |     |      |               | Working<br>Peak<br>Reverse<br>Voltage<br>$V_{RWM}$<br>VOLTS | Maximum<br>Reverse<br>Leakage<br>@ $V_{RWM}$<br>$I_R$<br>$\mu\text{A}$ | Maximum<br>Reverse<br>Surge<br>Current<br>$I_{RSM}$<br>A | Maximum<br>Reverse<br>Voltage<br>@ $I_{RSM}$<br>$V_{RSM}$<br>VOLTS | Maximum<br>Temp.<br>Coefficient<br>Of $V_{BR}$<br>%/ $^{\circ}\text{C}$ | Marking<br>Code |
|-------------|-------------------|-----|------|---------------|---|--|--|--|---|-----------------|
|             | $V_{BR}$          |     |      | @ $I_T$<br>mA |   |  |  |  |   |                 |
|             | VOLTS             |     |      |               |   |  |  |  |   |                 |
|             | MIN               | NOM | MAX  |               |   |  |  |  |   |                 |
| 1.5SMC6.8CA | 6.45              | 6.8 | 7.14 | 10            | 5.8   | 2000   | 143  | 10.5   | 0.057   | C6V8C           |
| 1.5SMC7.5CA | 7.13              | 7.5 | 7.88 | 10            | 6.4   | 1000   | 132  | 11.3   | 0.061   | C7V5C           |
| 1.5SMC8.2CA | 7.79              | 8.2 | 8.61 | 10            | 7.02  | 400  | 124  | 12.1   | 0.065   | C8V2C           |
| 1.5SMC9.1CA | 8.65              | 9.1 | 9.55 | 1.0           | 7.78  | 100  | 112  | 13.4   | 0.068   | C9V1C           |
| 1.5SMC10CA  | 9.5               | 10  | 10.5 | 1.0           | 8.55  | 20   | 103  | 14.5   | 0.073   | C10C            |
| 1.5SMC11CA  | 10.5              | 11  | 11.6 | 1.0           | 9.4   | 5  | 96   | 15.6   | 0.075   | C11C            |
| 1.5SMC12CA  | 11.4              | 12  | 12.6 | 1.0           | 10.2  | 5  | 90   | 16.7   | 0.078   | C12C            |
| 1.5SMC13CA  | 12.4              | 13  | 13.7 | 1.0           | 11.1  | 5  | 82   | 18.2   | 0.081   | C13C            |
| 1.5SMC15CA  | 14.3              | 15  | 15.8 | 1.0           | 12.8  | 5  | 71   | 21.2   | 0.084   | C15C            |
| 1.5SMC16CA  | 15.2              | 16  | 16.8 | 1.0           | 13.6  | 5  | 67   | 22.5   | 0.086   | C16C            |
| 1.5SMC18CA  | 17.1              | 18  | 18.9 | 1.0           | 15.3  | 5  | 59.5   | 25.2   | 0.088   | C18C            |
| 1.5SMC20CA  | 19.0              | 20  | 21.0 | 1.0           | 17.1  | 5  | 54   | 27.7   | 0.090   | C20C            |
| 1.5SMC22CA  | 20.9              | 22  | 23.1 | 1.0           | 18.8  | 5  | 49   | 30.6   | 0.092   | C22C            |
| 1.5SMC24CA  | 22.8              | 24  | 25.2 | 1.0           | 20.5  | 5  | 45   | 33.2   | 0.094   | C24C            |
| 1.5SMC27CA  | 25.7              | 27  | 28.4 | 1.0           | 23.1  | 5  | 40   | 37.5   | 0.096   | C27C            |
| 1.5SMC30CA  | 28.5              | 30  | 31.5 | 1.0           | 25.6  | 5  | 36   | 41.4   | 0.097   | C30C            |
| 1.5SMC33CA  | 31.4              | 33  | 34.7 | 1.0           | 28.2  | 5  | 33   | 45.7   | 0.098   | C33C            |
| 1.5SMC36CA  | 34.2              | 36  | 37.8 | 1.0           | 30.8  | 5  | 30   | 49.9   | 0.099   | C36C            |
| 1.5SMC39CA  | 37.1              | 39  | 41   | 1.0           | 33.3  | 5  | 28   | 53.9   | 0.100   | C39C            |

R2 (13-November 2002)

# Central<sup>TM</sup> Semiconductor Corp.

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 1.5SMC6.8CA Series types 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 MARKING CODE ON ELECTRICAL CHARACTERISTIC TABLE**



1.5SMC6.8CA  
THRU  
1.5SMC220CA

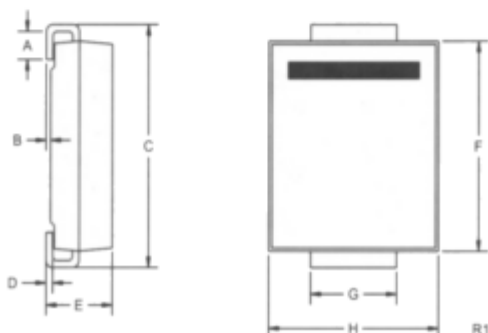
SURFACE MOUNT  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
SILICON TRANSIENT  
VOLTAGE SUPPRESSOR  
1500 WATTS, 6.8 THRU 220 VOLTS

ELECTRICAL CHARACTERISTICS CONTINUED:

| TYPE NO.    | BREAKDOWN VOLTAGE |     |       |       | Working Peak Reverse Voltage @ $I_T$ | Maximum Reverse Leakage @ $V_{RWM}$ | Maximum Reverse Surge Current | Maximum Reverse Voltage @ $I_{RSM}$ | Maximum Temp. Coefficient Of $V_{BR}$ | Marking Code |
|-------------|-------------------|-----|-------|-------|--------------------------------------|-------------------------------------|-------------------------------|-------------------------------------|---------------------------------------|--------------|
|             | $V_{BR}$          |     |       | $I_T$ |                                      |                                     |                               |                                     |                                       |              |
|             | VOLTS             |     |       |       |                                      |                                     |                               |                                     |                                       |              |
|             | MIN               | NOM | MAX   |       |                                      |                                     |                               |                                     |                                       |              |
| 1.5SMC43CA  | 40.9              | 43  | 45.2  | 1.0   | 36.8                                 | 5                                   | 25.3                          | 59.3                                | 0.101                                 | C43C         |
| 1.5SMC47CA  | 44.7              | 47  | 49.4  | 1.0   | 40.2                                 | 5                                   | 23.2                          | 64.8                                | 0.101                                 | C47C         |
| 1.5SMC51CA  | 48.5              | 51  | 53.6  | 1.0   | 43.6                                 | 5                                   | 21.4                          | 70.1                                | 0.102                                 | C51C         |
| 1.5SMC56CA  | 53.2              | 56  | 58.8  | 1.0   | 47.8                                 | 5                                   | 19.5                          | 77                                  | 0.103                                 | C56C         |
| 1.5SMC62CA  | 58.9              | 62  | 65.1  | 1.0   | 53.0                                 | 5                                   | 17.7                          | 85                                  | 0.104                                 | C62C         |
| 1.5SMC68CA  | 64.6              | 68  | 71.4  | 1.0   | 58.1                                 | 5                                   | 16.3                          | 92                                  | 0.104                                 | C68C         |
| 1.5SMC75CA  | 71.3              | 75  | 78.8  | 1.0   | 64.1                                 | 5                                   | 14.6                          | 103                                 | 0.105                                 | C75C         |
| 1.5SMC82CA  | 77.9              | 82  | 86.1  | 1.0   | 70.1                                 | 5                                   | 13.3                          | 113                                 | 0.105                                 | C82C         |
| 1.5SMC91CA  | 86.5              | 91  | 95.5  | 1.0   | 77.8                                 | 5                                   | 12                            | 125                                 | 0.106                                 | C91C         |
| 1.5SMC100CA | 95.0              | 100 | 105   | 1.0   | 85.5                                 | 5                                   | 11                            | 137                                 | 0.106                                 | C100C        |
| 1.5SMC110CA | 104.5             | 110 | 115.5 | 1.0   | 94.0                                 | 5                                   | 9.9                           | 152                                 | 0.107                                 | C110C        |
| 1.5SMC120CA | 114               | 120 | 126   | 1.0   | 102                                  | 5                                   | 9.1                           | 165                                 | 0.107                                 | C120C        |
| 1.5SMC130CA | 123.5             | 130 | 136.5 | 1.0   | 111                                  | 5                                   | 8.4                           | 179                                 | 0.107                                 | C130C        |
| 1.5SMC150CA | 142.5             | 150 | 157.5 | 1.0   | 128                                  | 5                                   | 7.2                           | 207                                 | 0.108                                 | C150C        |
| 1.5SMC160CA | 152               | 160 | 168   | 1.0   | 136                                  | 5                                   | 6.8                           | 219                                 | 0.108                                 | C160C        |
| 1.5SMC170CA | 161.5             | 170 | 178.5 | 1.0   | 145                                  | 5                                   | 6.4                           | 234                                 | 0.108                                 | C170C        |
| 1.5SMC180CA | 171               | 180 | 189   | 1.0   | 154                                  | 5                                   | 6.1                           | 246                                 | 0.108                                 | C180C        |
| 1.5SMC200CA | 190               | 200 | 210   | 1.0   | 171                                  | 5                                   | 5.5                           | 274                                 | 0.108                                 | C200C        |
| 1.5SMC220CA | 209               | 220 | 231   | 1.0   | 185                                  | 5                                   | 4.6                           | 328                                 | 0.108                                 | C220C        |

DATA SHEETS

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)

R2 (13-November 2002)