

3SMC5.0CA  
THRU  
3SMC170CA

SURFACE MOUNT BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSOR  
3000 WATTS, 5.0 THRU 170 VOLTS



SMC CASE

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

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 3SMC5.0CA 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 3SMC5.0A Series data sheet.

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

|                                               | SYMBOL         |             | UNITS              |
|-----------------------------------------------|----------------|-------------|--------------------|
| Peak Power Dissipation                        | $P_{DM}$       | 3000        | W                  |
| Peak Forward Surge Current (JEDEC Method)     | $I_{FSM}$      | 200         | A                  |
| Operating and Storage<br>Junction Temperature | $T_J, T_{stg}$ | -65 to +150 | $^{\circ}\text{C}$ |

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

| TYPE NO.  | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN<br>VOLTAGE |         |       | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{RWM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{PPM}$ | MAXIMUM<br>PEAK PULSE<br>CURRENT | MARKING<br>CODE |
|-----------|---------------------------------|----------------------|---------|-------|----------------------------------------------|-----------------------------------------------|----------------------------------|-----------------|
|           |                                 | $V_{BR}$             | @ $I_T$ |       |                                              |                                               |                                  |                 |
|           | $V_{RWM}$                       |                      |         | VOLTS |                                              | $I_R$                                         | $V_C$                            |                 |
|           | VOLTS                           | MIN                  | MAX     | mA    | μA                                           | VOLTS                                         | A                                |                 |
| 3SMC5.0CA | 5.0                             | 6.40                 | 7.25    | 10    | 2000                                         | 9.2                                           | 326.0                            | CIDE            |
| 3SMC6.0CA | 6.0                             | 6.67                 | 7.67    | 10    | 2000                                         | 10.3                                          | 291.3                            | CIDG            |
| 3SMC6.5CA | 6.5                             | 7.22                 | 8.30    | 10    | 1000                                         | 11.2                                          | 267.9                            | CIDK            |
| 3SMC7.0CA | 7.0                             | 7.78                 | 8.95    | 10    | 400                                          | 12.0                                          | 250.0                            | CIDM            |
| 3SMC7.5CA | 7.5                             | 8.33                 | 9.58    | 1.0   | 200                                          | 12.9                                          | 232.6                            | CIDP            |
| 3SMC8.0CA | 8.0                             | 8.89                 | 10.23   | 1.0   | 100                                          | 13.6                                          | 220.6                            | CIDR            |
| 3SMC8.5CA | 8.5                             | 9.44                 | 10.82   | 1.0   | 50                                           | 14.4                                          | 208.4                            | CIDT            |
| 3SMC9.0CA | 9.0                             | 10.0                 | 11.5    | 1.0   | 20                                           | 15.4                                          | 194.8                            | CIDV            |
| 3SMC10CA  | 10                              | 11.1                 | 12.8    | 1.0   | 5.0                                          | 17.0                                          | 176.4                            | CIDX            |
| 3SMC11CA  | 11                              | 12.2                 | 14.0    | 1.0   | 5.0                                          | 18.2                                          | 184.8                            | CIDZ            |
| 3SMC12CA  | 12                              | 13.3                 | 15.3    | 1.0   | 5.0                                          | 19.9                                          | 150.6                            | CIEE            |
| 3SMC13CA  | 13                              | 14.4                 | 16.5    | 1.0   | 5.0                                          | 21.5                                          | 139.4                            | CIEG            |

| TYPE NO.  | REVERSE<br>STAND-OFF<br>VOLTAGE | BREAKDOWN VOLTAGE |       |         | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{RWM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{PPM}$ | MAXIMUM<br>PEAK PULSE<br>CURRENT | MARKING<br>CODE |
|-----------|---------------------------------|-------------------|-------|---------|----------------------------------------------|-----------------------------------------------|----------------------------------|-----------------|
|           |                                 | $V_{BR}$          |       | @ $I_T$ |                                              |                                               |                                  |                 |
|           | $V_{RWM}$                       | VOLTS             |       |         | $I_R$                                        | $V_C$                                         | $I_{PPM}$                        |                 |
|           | VOLTS                           | MIN               | MAX   |         | mA                                           | $\mu A$                                       | VOLTS                            |                 |
| 3SMC14CA  | 14                              | 15.6              | 17.9  | 1.0     | 5.0                                          | 23.2                                          | 129.4                            | CIEK            |
| 3SMC15CA  | 15                              | 16.7              | 19.2  | 1.0     | 5.0                                          | 24.4                                          | 123.0                            | CIEM            |
| 3SMC16CA  | 16                              | 17.8              | 20.5  | 1.0     | 5.0                                          | 26.0                                          | 115.4                            | CIEP            |
| 3SMC17CA  | 17                              | 18.9              | 21.7  | 1.0     | 5.0                                          | 27.6                                          | 106.6                            | CIER            |
| 3SMC18CA  | 18                              | 20.0              | 23.3  | 1.0     | 5.0                                          | 29.2                                          | 102.8                            | CIET            |
| 3SMC20CA  | 20                              | 22.2              | 25.5  | 1.0     | 5.0                                          | 32.4                                          | 92.6                             | CIEV            |
| 3SMC22CA  | 22                              | 24.4              | 28.0  | 1.0     | 5.0                                          | 35.5                                          | 84.4                             | CIEX            |
| 3SMC24CA  | 24                              | 26.7              | 30.7  | 1.0     | 5.0                                          | 38.9                                          | 77.2                             | CIEZ            |
| 3SMC26CA  | 26                              | 28.9              | 33.2  | 1.0     | 5.0                                          | 42.1                                          | 71.2                             | CIFE            |
| 3SMC28CA  | 28                              | 31.1              | 35.8  | 1.0     | 5.0                                          | 45.4                                          | 66.0                             | CIFG            |
| 3SMC30CA  | 30                              | 33.3              | 38.3  | 1.0     | 5.0                                          | 48.4                                          | 62.0                             | CIFK            |
| 3SMC33CA  | 33                              | 36.7              | 42.2  | 1.0     | 5.0                                          | 53.3                                          | 56.2                             | CIFM            |
| 3SMC36CA  | 36                              | 40.0              | 46.0  | 1.0     | 5.0                                          | 58.1                                          | 51.6                             | CIFP            |
| 3SMC40CA  | 40                              | 44.4              | 51.1  | 1.0     | 5.0                                          | 64.5                                          | 46.4                             | CIFR            |
| 3SMC43CA  | 43                              | 47.8              | 54.9  | 1.0     | 5.0                                          | 69.4                                          | 43.2                             | CIFT            |
| 3SMC45CA  | 45                              | 50.0              | 57.5  | 1.0     | 5.0                                          | 72.7                                          | 41.2                             | CIFV            |
| 3SMC48CA  | 48                              | 53.3              | 61.3  | 1.0     | 5.0                                          | 77.4                                          | 38.8                             | CIFX            |
| 3SMC51CA  | 51                              | 56.7              | 65.2  | 1.0     | 5.0                                          | 82.4                                          | 36.4                             | CIFZ            |
| 3SMC54CA  | 54                              | 60.0              | 69.0  | 1.0     | 5.0                                          | 87.1                                          | 34.4                             | CIGE            |
| 3SMC58CA  | 58                              | 64.4              | 74.1  | 1.0     | 5.0                                          | 93.6                                          | 32.0                             | CIGG            |
| 3SMC60CA  | 60                              | 66.7              | 76.7  | 1.0     | 5.0                                          | 96.8                                          | 31.0                             | CIGK            |
| 3SMC64CA  | 64                              | 71.1              | 81.8  | 1.0     | 5.0                                          | 103                                           | 29.2                             | CIGM            |
| 3SMC70CA  | 70                              | 77.8              | 89.5  | 1.0     | 5.0                                          | 113                                           | 26.6                             | CIGP            |
| 3SMC75CA  | 75                              | 83.3              | 95.8  | 1.0     | 5.0                                          | 121                                           | 24.8                             | CIGR            |
| 3SMC78CA  | 78                              | 86.7              | 99.7  | 1.0     | 5.0                                          | 126                                           | 22.8                             | CIGT            |
| 3SMC85CA  | 85                              | 94.4              | 108.2 | 1.0     | 5.0                                          | 137                                           | 20.8                             | CIGV            |
| 3SMC90CA  | 90                              | 100.0             | 115.5 | 1.0     | 5.0                                          | 146                                           | 20.6                             | CIGX            |
| 3SMC100CA | 100                             | 111.0             | 128.0 | 1.0     | 5.0                                          | 162                                           | 18.6                             | CIGZ            |
| 3SMC110CA | 110                             | 122.0             | 140.5 | 1.0     | 5.0                                          | 177                                           | 16.8                             | CIHE            |
| 3SMC120CA | 120                             | 133.0             | 153.0 | 1.0     | 5.0                                          | 193                                           | 15.6                             | CIHG            |
| 3SMC130CA | 130                             | 144.0             | 165.5 | 1.0     | 5.0                                          | 209                                           | 14.4                             | CIHK            |
| 3SMC150CA | 150                             | 167.0             | 192.5 | 1.0     | 5.0                                          | 243                                           | 12.4                             | CIHM            |
| 3SMC160CA | 160                             | 178.0             | 205.0 | 1.0     | 5.0                                          | 259                                           | 11.6                             | CIHP            |
| 3SMC170CA | 170                             | 189.0             | 217.5 | 1.0     | 5.0                                          | 275                                           | 11.0                             | CIHR            |