




**THE DATASHEET OF
3SMC20CA TR13 PBFREE**



3SMC5.0CA
THRU
3SMC170CA



**SURFACE MOUNT SILICON
BI-DIRECTIONAL
GLASS PASSIVATED JUNCTION
TRANSIENT VOLTAGE SUPPRESSORS
3000 WATT, 5.0 THRU 170 VOLT**



www.centrasemi.com

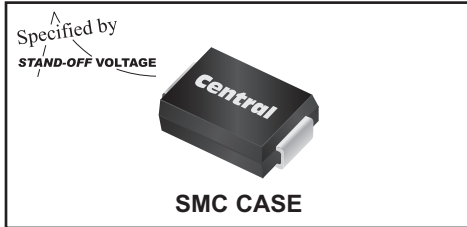
DESCRIPTION:

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

MARKING CODE: SEE MARKING CODE ON ELECTRICAL CHARACTERISTIC 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}

T_J, T_{stg}

3000

-65 to +150

UNITS

W

$^\circ\text{C}$

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

| TYPE | REVERSE STAND-OFF VOLTAGE | BREAKDOWN VOLTAGE | | TEST CURRENT | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM CLAMPING VOLTAGE | PEAK PULSE CURRENT | MARKING CODE |
|-----------|---------------------------|-------------------|-------|--------------|---------------------------------|--------------------------|--------------------|--------------|
| | V_{RWM} | $V_{BR} @ I_T$ | | I_T | $I_R @ V_{RWM}$ | $V_C @ I_{PP}$ | (Note 1) I_{PP} | |
| | V | MIN V | MAX V | mA | μA | V | 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 | CIDXS |
| 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 |
| 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 |

Note 1: Non-repetitive 10x1,000 μs pulse.

R12 (17-March 2016)

3SMC5.0CA
THRU
3SMC170CA

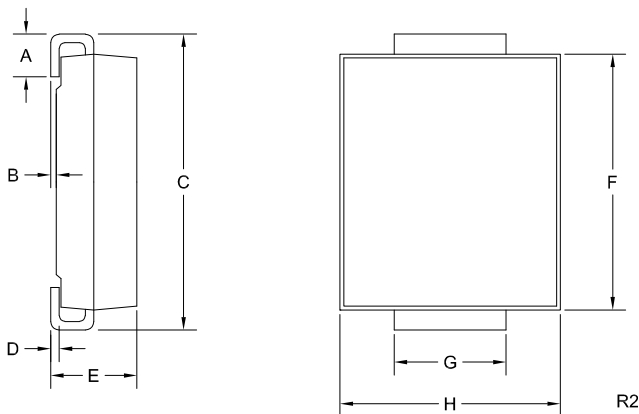
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| TYPE | REVERSE STAND-OFF VOLTAGE | BREAKDOWN VOLTAGE | | TEST CURRENT | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM CLAMPING VOLTAGE | PEAK PULSE CURRENT (Note 1) | MARKING CODE |
|-----------|---------------------------|-------------------|-------|--------------|---------------------------------|--------------------------|-----------------------------|--------------|
| | V_{RWM} | $V_{BR} @ I_T$ | | I_T | $I_R @ V_{RWM}$ | $V_C @ I_{PP}$ | I_{PP} | |
| | V | MIN V | MAX V | mA | μA | V | A | |
| 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 |

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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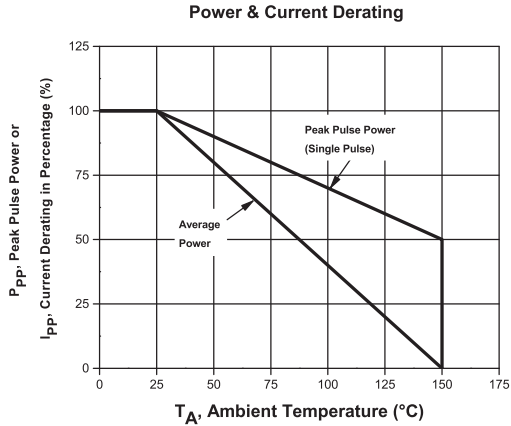
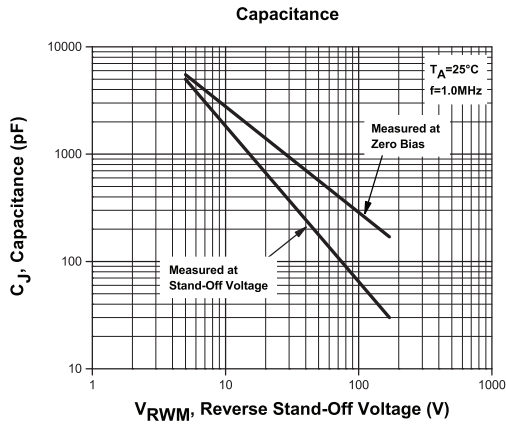
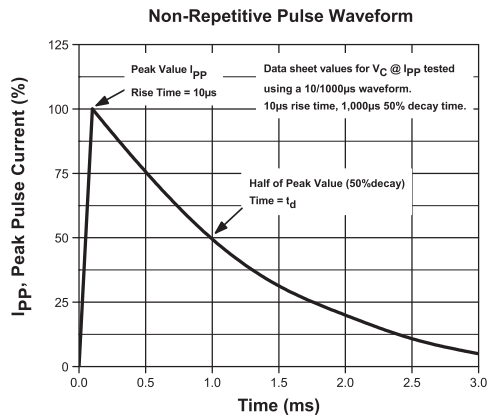
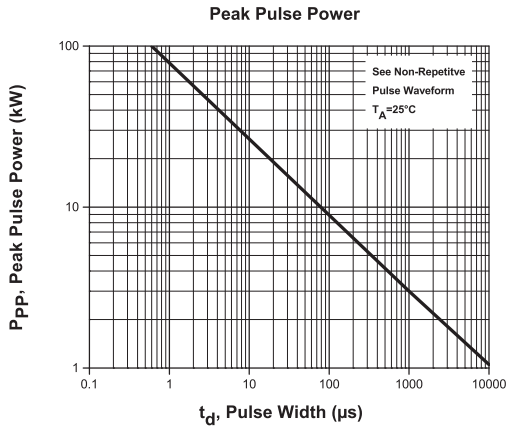
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TYPICAL ELECTRICAL CHARACTERISTICS



R12 (17-March 2016)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd 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

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management