




**THE DATASHEET OF
1SMB12CA TR13**



1SMB5.0CA
THRU
1SMB170CA



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



www.centrasemi.com

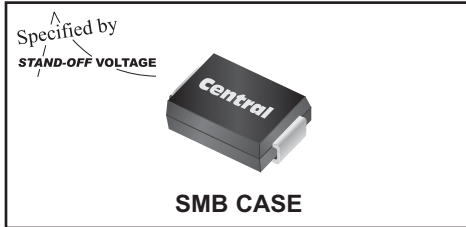
DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1SMB5.0CA 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 1SMB5.0A 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} 600

T_J, T_{stg} -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 (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 | |
| 1SMB5.0CA | 5.0 | 6.40 | 7.25 | 10 | 1600 | 9.2 | 65.2 | CKEC |
| 1SMB6.0CA | 6.0 | 6.67 | 7.67 | 10 | 1600 | 10.3 | 58.3 | CKGC |
| 1SMB6.5CA | 6.5 | 7.22 | 8.30 | 10 | 1000 | 11.2 | 53.6 | CKKC |
| 1SMB7.0CA | 7.0 | 7.78 | 8.95 | 10 | 400 | 12 | 50 | CKMC |
| 1SMB7.5CA | 7.5 | 8.33 | 9.58 | 1.0 | 200 | 12.9 | 46.5 | CKPC |
| 1SMB8.0CA | 8.0 | 8.89 | 10.23 | 1.0 | 100 | 13.6 | 44.1 | CKRC |
| 1SMB8.5CA | 8.5 | 9.44 | 10.82 | 1.0 | 20 | 14.4 | 41.7 | CKTC |
| 1SMB9.0CA | 9.0 | 10 | 11.5 | 1.0 | 10 | 15.4 | 39 | CKVC |
| 1SMB10CA | 10 | 11.1 | 12.8 | 1.0 | 5.0 | 17 | 35.3 | CKXC |
| 1SMB11CA | 11 | 12.2 | 14 | 1.0 | 5.0 | 18.2 | 33 | CKZC |
| 1SMB12CA | 12 | 13.3 | 15.3 | 1.0 | 5.0 | 19.9 | 30.2 | CLEC |
| 1SMB13CA | 13 | 14.4 | 16.5 | 1.0 | 5.0 | 21.5 | 27.9 | CLGC |
| 1SMB14CA | 14 | 15.6 | 17.9 | 1.0 | 5.0 | 23.2 | 25.8 | CLKC |
| 1SMB15CA | 15 | 16.7 | 19.2 | 1.0 | 5.0 | 24.4 | 24 | CLMC |
| 1SMB16CA | 16 | 17.8 | 20.5 | 1.0 | 5.0 | 26 | 23.1 | CLPC |
| 1SMB17CA | 17 | 18.9 | 21.7 | 1.0 | 5.0 | 27.6 | 21.7 | CLRC |
| 1SMB18CA | 18 | 20 | 23.3 | 1.0 | 5.0 | 29.2 | 20.5 | CLTC |
| 1SMB20CA | 20 | 22.2 | 25.5 | 1.0 | 5.0 | 32.4 | 18.5 | CLVC |
| 1SMB22CA | 22 | 24.4 | 28 | 1.0 | 5.0 | 35.5 | 16.9 | CLXC |
| 1SMB24CA | 24 | 26.7 | 30.7 | 1.0 | 5.0 | 38.9 | 15.4 | CLZC |
| 1SMB26CA | 26 | 28.9 | 33.2 | 1.0 | 5.0 | 42.1 | 14.2 | CMEC |
| 1SMB28CA | 28 | 31.1 | 35.8 | 1.0 | 5.0 | 45.4 | 13.2 | CMGC |
| 1SMB30CA | 30 | 33.3 | 38.3 | 1.0 | 5.0 | 48.4 | 12.4 | CMKC |

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

R7 (11-September 2018)

1SMB5.0CA
THRU
1SMB170CA



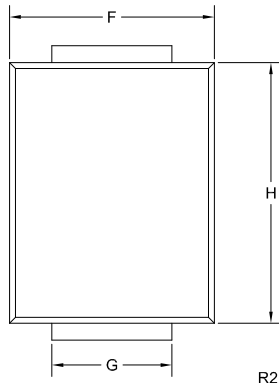
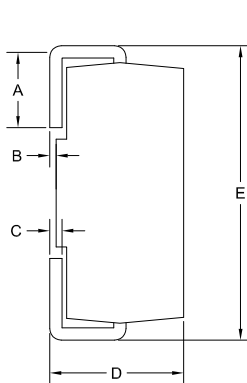
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| TYPE | REVERSE STAND-OFF VOLTAGE | BREAKDOWN VOLTAGE | | TEST CURRENT | MAXIMUM REVERSE LEAKAGE CURRENT | MAXIMUM CLAMPING VOLTAGE | PEAK PULSE CURRENT | 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 | |
| 1SMB33CA | 33 | 36.7 | 42.2 | 1.0 | 5.0 | 53.3 | 11.3 | CMMC |
| 1SMB36CA | 36 | 40 | 46 | 1.0 | 5.0 | 58.1 | 10.3 | CMPC |
| 1SMB40CA | 40 | 44.4 | 51.1 | 1.0 | 5.0 | 64.5 | 9.3 | CMRC |
| 1SMB43CA | 43 | 47.8 | 54.9 | 1.0 | 5.0 | 69.4 | 8.6 | CMTC |
| 1SMB45CA | 45 | 50 | 57.5 | 1.0 | 5.0 | 72.7 | 8.3 | CMVC |
| 1SMB48CA | 48 | 53.3 | 61.3 | 1.0 | 5.0 | 77.4 | 7.7 | CMXC |
| 1SMB51CA | 51 | 56.7 | 65.2 | 1.0 | 5.0 | 82.4 | 7.3 | CMZC |
| 1SMB54CA | 54 | 60 | 69 | 1.0 | 5.0 | 87.1 | 6.9 | CNEC |
| 1SMB58CA | 58 | 64.4 | 74.1 | 1.0 | 5.0 | 93.6 | 6.4 | CNGC |
| 1SMB60CA | 60 | 66.7 | 76.7 | 1.0 | 5.0 | 96.8 | 6.2 | CNKC |
| 1SMB64CA | 64 | 71.1 | 81.8 | 1.0 | 5.0 | 103 | 5.8 | CNMC |
| 1SMB70CA | 70 | 77.8 | 89.5 | 1.0 | 5.0 | 113 | 5.3 | CNPC |
| 1SMB75CA | 75 | 83.3 | 95.8 | 1.0 | 5.0 | 121 | 4.9 | CNRC |
| 1SMB78CA | 78 | 86.7 | 99.7 | 1.0 | 5.0 | 126 | 4.7 | CNTC |
| 1SMB85CA | 85 | 94.4 | 108.2 | 1.0 | 5.0 | 137 | 4.4 | CNVC |
| 1SMB90CA | 90 | 100 | 115.5 | 1.0 | 5.0 | 146 | 4.1 | CNXC |
| 1SMB100CA | 100 | 111 | 128 | 1.0 | 5.0 | 162 | 3.7 | CNZC |
| 1SMB110CA | 110 | 122 | 140.5 | 1.0 | 5.0 | 177 | 3.4 | CPEC |
| 1SMB120CA | 120 | 133 | 153 | 1.0 | 5.0 | 193 | 3.1 | CPGC |
| 1SMB130CA | 130 | 144 | 165.5 | 1.0 | 5.0 | 209 | 2.9 | CPKC |
| 1SMB150CA | 150 | 167 | 192.5 | 1.0 | 5.0 | 243 | 2.5 | CPMC |
| 1SMB160CA | 160 | 178 | 205 | 1.0 | 5.0 | 259 | 2.3 | CPPC |
| 1SMB170CA | 170 | 189 | 217.5 | 1.0 | 5.0 | 275 | 2.2 | CPRC |

SMB CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.030 | 0.060 | 0.76 | 1.52 |
| B | 0.000 | 0.008 | 0.00 | 0.20 |
| C | 0.006 | 0.012 | 0.15 | 0.30 |
| D | 0.086 | 0.096 | 2.18 | 2.44 |
| E | 0.200 | 0.220 | 5.08 | 5.59 |
| F | 0.130 | 0.150 | 3.30 | 3.81 |
| G | 0.077 | 0.083 | 1.96 | 2.11 |
| H | 0.160 | 0.191 | 4.06 | 4.85 |

SMB (REV: R2)

R7 (11-September 2018)

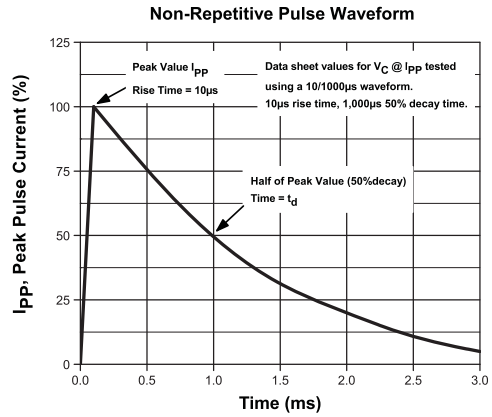
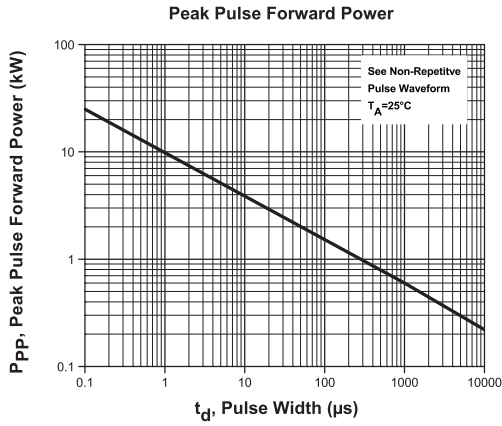
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TYPICAL ELECTRICAL CHARACTERISTICS



R7 (11-September 2018)

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