



**THE DATASHEET OF  
1SMB78CA TR13**



1SMB5.0CA THRU 1SMB170CA

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



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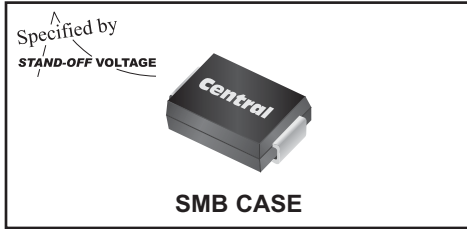
**DESCRIPTION:**

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	$\mu\text{A}$	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 $\mu\text{s}$  pulse.

R7 (11-September 2018)

**1SMB5.0CA  
THRU  
1SMB170CA**

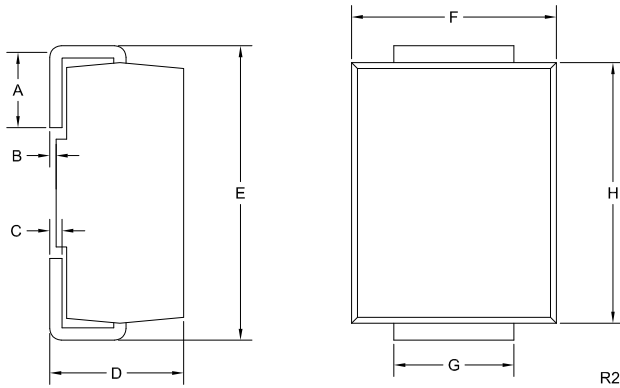
**SURFACE MOUNT SILICON  
BI-DIRECTIONAL  
GLASS PASSIVATED JUNCTION  
TRANSIENT VOLTAGE SUPPRESSORS  
600 WATT, 5.0 THRU 170 VOLT**



**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	$\mu\text{A}$	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)

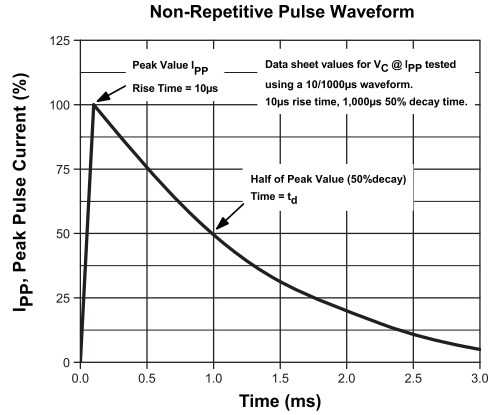
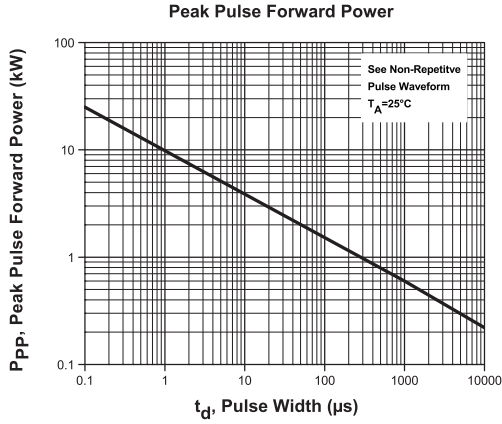
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THRU  
1SMB170CA



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### TYPICAL ELECTRICAL CHARACTERISTICS



R7 (11-September 2018)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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