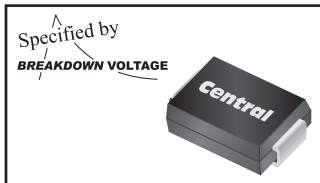
P6SMB6.8CA
THRU
P6SMB250CA

SURFACE MOUNT SILICON
BI-DIRECTIONAL
GLASS PASSIVATED JUNCTION
TRANSIENT VOLTAGE SUPPRESSORS
600 WATT, 6.8 THRU 250 VOLT



SMB CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR P6SMB6.8CA 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 P6SMB6.8A Series data sheet.

MARKING CODE: SEE ELECTRICAL CHARACTERISTICS TABLE

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)	**SYMBOL**		**UNITS**
Peak Power Dissipation (Note 1)	P_{PK}	600	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

TYPE	BREAKDOWN VOLTAGE V_{BR} @ I_T			TEST CURRENT I_T	WORKING PEAK REVERSE VOLTAGE V_{RWM}	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_{RWM}	MAXIMUM CLAMPING VOLTAGE V_C @ I_{PP}	PEAK PULSE CURRENT (Note 1) I_{PP}	MAXIMUM TEMPERATURE COEFFICIENT ΘV_{BR}	MARKING CODE
	MIN V	NOM V	MAX V	mA	V	µA	V	A	% / °C	
P6SMB6.8CA	6.45	6.8	7.14	10	5.8	2000	10.5	57	0.057	C6V8C
P6SMB7.5CA	7.13	7.5	7.88	10	6.4	1000	11.3	53	0.061	C7V5C
P6SMB8.2CA	7.79	8.2	8.61	10	7.02	400	12.1	50	0.065	C8V2C
P6SMB9.1CA	8.65	9.1	9.55	1.0	7.78	100	13.4	45	0.068	C9V1C
P6SMB10CA	9.5	10	10.5	1.0	8.55	20	14.5	41	0.073	C10C
P6SMB11CA	10.5	11	11.6	1.0	9.4	5.0	15.6	38	0.075	C11C
P6SMB12CA	11.4	12	12.6	1.0	10.2	5.0	16.7	36	0.078	C12C
P6SMB13CA	12.4	13	13.7	1.0	11.1	5.0	18.2	33	0.081	C13C
P6SMB15CA	14.3	15	15.8	1.0	12.8	5.0	21.2	28	0.084	C15C
P6SMB16CA	15.2	16	16.8	1.0	13.6	5.0	22.5	27	0.086	C16C
P6SMB18CA	17.1	18	18.9	1.0	15.3	5.0	25.2	24	0.088	C18C
P6SMB20CA	19	20	21.0	1.0	17.1	5.0	27.7	22	0.090	C20C
P6SMB22CA	20.9	22	23.1	1.0	18.8	5.0	30.6	20	0.092	C22C
P6SMB24CA	22.8	24	25.2	1.0	20.5	5.0	33.2	18	0.094	C24C
P6SMB27CA	25.7	27	28.4	1.0	23.1	5.0	37.5	16	0.096	C27C
P6SMB30CA	28.5	30	31.5	1.0	25.6	5.0	41.4	14.4	0.097	C30C
P6SMB33CA	31.4	33	34.7	1.0	28.2	5.0	45.7	13.2	0.098	C33C
P6SMB36CA	34.2	36	37.8	1.0	30.8	5.0	49.9	12	0.099	C36C
P6SMB39CA	37.1	39	41	1.0	33.3	5.0	53.9	11.2	0.100	C39C

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

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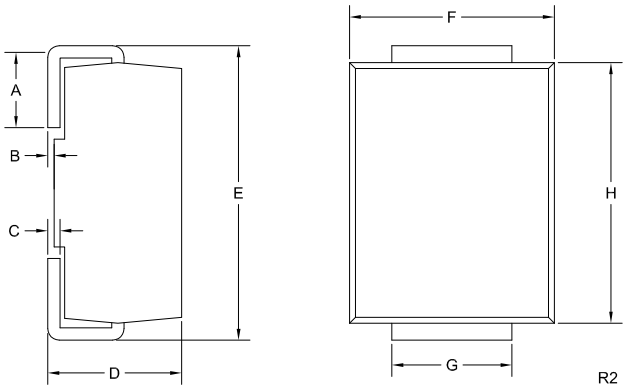
ELECTRICAL CHARACTERISTICS - Continued: (T_A=25°C unless otherwise noted)

TYPE	BREAKDOWN VOLTAGE V_{BR} @ I_T			TEST CURRENT I_T	WORKING PEAK REVERSE VOLTAGE V_{RWM}	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_{RWM}	MAXIMUM CLAMPING VOLTAGE V_C @ I_{PP}	PEAK PULSE CURRENT (Note 1) I_{PP}	MAXIMUM TEMPERATURE COEFFICIENT ΘV_{BR}	MARKING CODE
	MIN V	NOM V	MAX V	mA	V	µA	V	A	% / °C	
P6SMB43CA	40.9	43	45.2	1.0	36.8	5.0	59.3	10.1	0.101	C43C
P6SMB47CA	44.7	47	49.4	1.0	40.2	5.0	64.8	9.3	0.101	C47C
P6SMB51CA	48.5	51	53.6	1.0	43.6	5.0	70.1	8.6	0.102	C51C
P6SMB56CA	53.2	56	58.8	1.0	47.8	5.0	77	7.8	0.103	C56C
P6SMB62CA	58.9	62	65.1	1.0	53	5.0	85	7.1	0.104	C62C
P6SMB68CA	64.6	68	71.4	1.0	58.1	5.0	92	6.5	0.104	C68C
P6SMB75CA	71.3	75	78.8	1.0	64.1	5.0	103	5.8	0.105	C75C
P6SMB82CA	77.9	82	86.1	1.0	70.1	5.0	113	5.3	0.105	C82C
P6SMB91CA	86.5	91	95.5	1.0	77.8	5.0	125	4.8	0.106	C91C
P6SMB100CA	95	100	105	1.0	85.5	5.0	137	4.4	0.106	C100C
P6SMB110CA	104.5	110	115.5	1.0	94	5.0	152	4.0	0.107	C110C
P6SMB120CA	114	120	126	1.0	102	5.0	165	3.6	0.107	C120C
P6SMB130CA	123.5	130	136.5	1.0	111	5.0	179	3.3	0.107	C130C
P6SMB150CA	142.5	150	157.5	1.0	128	5.0	207	2.9	0.108	C150C
P6SMB160CA	152	160	168	1.0	136	5.0	219	2.7	0.108	C160C
P6SMB170CA	161.5	170	178.5	1.0	145	5.0	234	2.6	0.108	C170C
P6SMB180CA	171	180	189	1.0	154	5.0	246	2.4	0.108	C180C
P6SMB200CA	190	200	210	1.0	171	5.0	274	2.2	0.108	C200C
P6SMB220CA	209	220	231	1.0	185	5.0	328	1.8	0.108	C220C
P6SMB250CA	237.5	250	262.5	1.0	214	5.0	344	1.7	0.110	C250C

SMB CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)

R9 (11-September 2018)

P6SMB6.8CA
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BI-DIRECTIONAL
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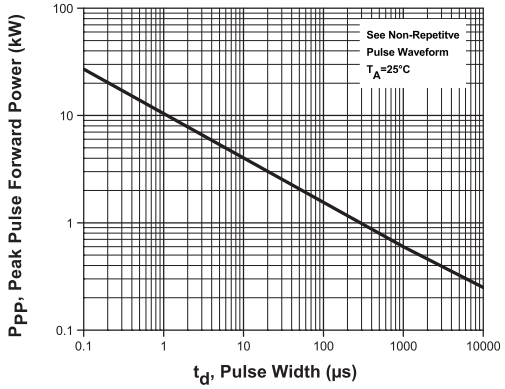
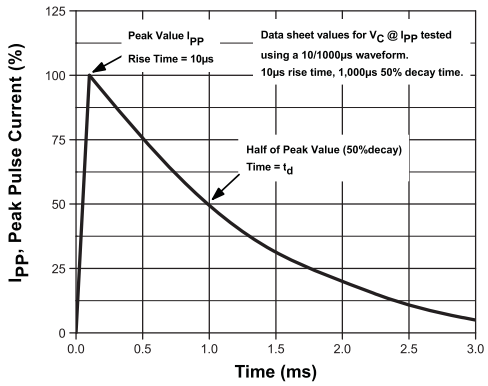
TRANSIENT VOLTAGE SUPPRESSORS
600 WATT, 6.8 THRU 250 VOLT

TYPICAL ELECTRICAL CHARACTERISTICS

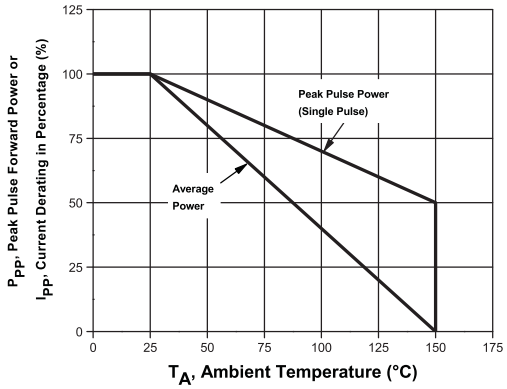
Peak Pulse Forward Power



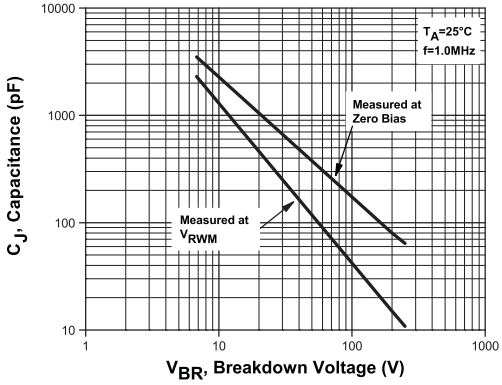
Non-Repetitive Pulse Waveform



Power & Current Derating



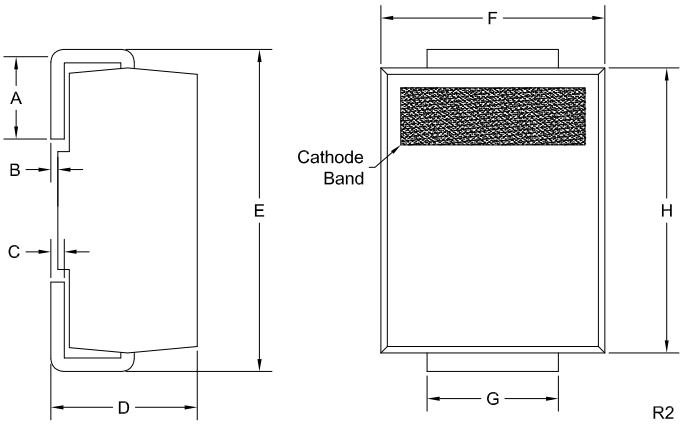
Typical Capacitance



R9 (11-September 2018)

Package Details
SMB Case

Mechanical Drawing



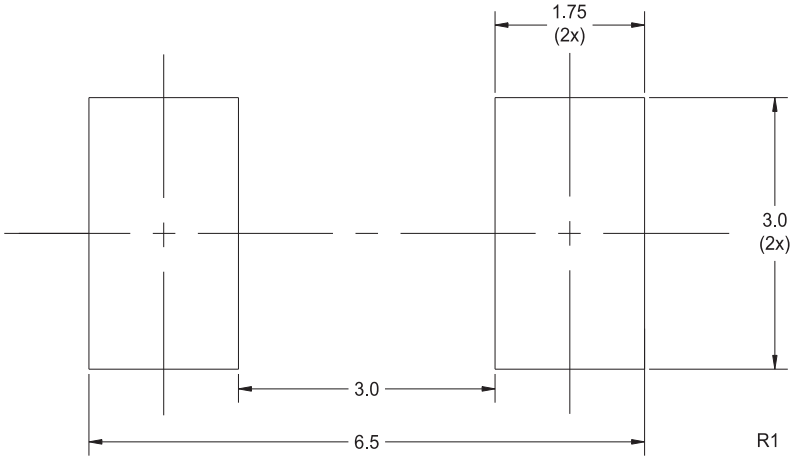
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.000	0.008	0.00	0.20
C	0.006	0.012	0.15	0.30
D	0.086	0.096	2.18	2.44
E	0.200	0.220	5.08	5.59
F	0.130	0.150	3.30	3.81
G	0.077	0.083	1.96	2.11
H	0.160	0.191	4.06	4.85

SMB (REV: R2)

Lead Code:
Reference individual device datasheet.

Part Marking: 3-6 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)

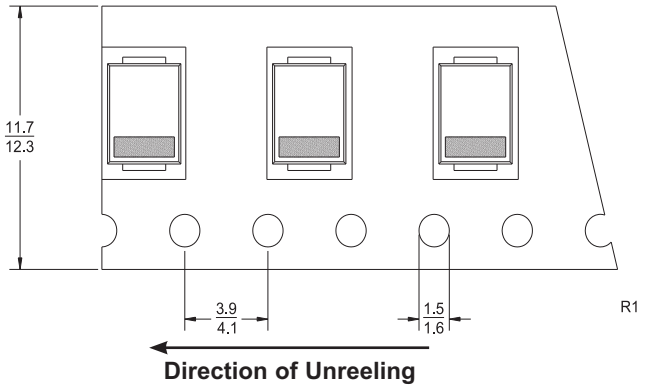


R3 (4-September 2018)

Package Details
SMB Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 12mm



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

Packaging Base

13” Reel = 3,000 pcs.

Reel Labeling Information

Each reel is labeled with the following information:
Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code and Ship Date.

Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13”	5	15,000	15x4x15	38x10x38	8	4
	14	42,000	15x15x9	38x38x23	21	10
	26	78,000	15x15x18	38x38x46	39	18

Ordering Information

- For devices taped and reeled on 13” reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

Material Composition Specification

SMB Case

Device average mass . . . . . **92 mg**

Fluctuation margin . . . . . **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	0.83%	0.76	Si	7440-21-3	0.83%	0.76	8,262
leadframe	copper	37%	34.04	Cu	7440-50-8	37%	34.04	370,032
die attach	high temperature solder paste	2.45%	2.25	Pb	7439-92-1	2.26%	2.081	22,622
				Sn	7440-31-5	0.12%	0.113	1,228
				Ag	7440-22-4	0.06%	0.056	609
encapsulation*	EMC	58.96%	54.23	silica	7631-86-9	40.09%	36.88	400,904
				epoxy resin	29690-82-2	11.79%	10.85	117,945
				phenol resin	9003-35-4	5.89%	5.42	58,918
				Sb_2O_3	1309-64-4	0.59%	0.542	5,892
				Br	7726-95-6	0.59%	0.542	5,892
	EMC GREEN	58.96%	54.23	silica (fused)	60676-86-0	45.4%	41.76	453,953
				epoxy resin	29690-82-2	5.9%	5.423	58,951
				phenol resin	9003-35-4	5.72%	5.26	57,179
				carbon black	1333-86-4	0.18%	0.163	1,772
				metal hydroxide	1309-42-8	1.77%	1.628	17,697
plating**	tin/lead process	0.77%	0.71	Sn	7440-31-5	0.62%	0.566	6,153
				Pb	7439-92-1	0.15%	0.142	1,544
	matte tin	0.77%	0.71	Sn	7440-31-5	0.77%	0.708	7,696

*EMC GREEN molding compound is Halogen-Free.

**For Lead Free plating, add suffix “PB FREE” to part number.
For Tin/Lead plating, add suffix “TIN/LEAD” to part number.
No suffix designation allows for the supply of either lead-free or tin/lead plated product depending on availability.

Material Composition Specification

SMB Case

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Fluctuation margin . . . . . **+/-10%**

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	matte tin	0.77%	0.71	Sn	7440-31-5	0.77%	0.708	7,696

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