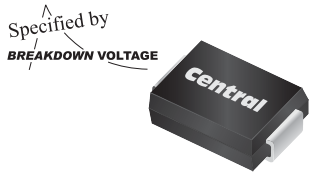
1.5SMC6.8A
THRU
1.5SMC220A

SURFACE MOUNT SILICON
UNI-DIRECTIONAL
GLASS PASSIVATED JUNCTION
TRANSIENT VOLTAGE SUPPRESSORS
1500 WATT, 6.8 THRU 220 VOLT



SMC CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.5SMC6.8A series devices are surface mount uni-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 bi-directional devices, please refer to the 1.5SMC6.8CA 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}	1500	W
Peak Forward Surge Current (JEDEC Method)	I_{FSM}	200	A
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 REVERSE SURGE CURRENT (Note 1) I_{RSM}	MAXIMUM REVERSE VOLTAGE V_{RSM} @ I_{RSM}	MAXIMUM TEMPERATURE COEFFICIENT ΘV_{BR}	MARKING CODE
	MIN V	NOM V	MAX V	mA	V	µA	A	V	% / °C	
1.5SMC6.8A	6.45	6.8	7.14	10	5.8	1000	143	10.5	0.057	C6V8A
1.5SMC7.5A	7.13	7.5	7.88	10	6.4	500	132	11.3	0.061	C7V5A
1.5SMC8.2A	7.79	8.2	8.61	10	7.02	200	124	12.1	0.065	C8V2A
1.5SMC9.1A	8.65	9.1	9.55	1.0	7.78	50	112	13.4	0.068	C9V1A
1.5SMC10A	9.5	10	10.5	1.0	8.55	10	103	14.5	0.073	C10A
1.5SMC11A	10.5	11	11.6	1.0	9.4	5	96	15.6	0.075	C11A
1.5SMC12A	11.4	12	12.6	1.0	10.2	5	90	16.7	0.078	C12A
1.5SMC13A	12.4	13	13.7	1.0	11.1	5	82	18.2	0.081	C13A
1.5SMC15A	14.3	15	15.8	1.0	12.8	5	71	21.2	0.084	C15A
1.5SMC16A	15.2	16	16.8	1.0	13.6	5	67	22.5	0.086	C16A
1.5SMC18A	17.1	18	18.9	1.0	15.3	5	59.5	25.2	0.088	C18A
1.5SMC20A	19.0	20	21.0	1.0	17.1	5	54	27.7	0.090	C20A
1.5SMC22A	20.9	22	23.1	1.0	18.8	5	49	30.6	0.092	C22A
1.5SMC24A	22.8	24	25.2	1.0	20.5	5	45	33.2	0.094	C24A
1.5SMC27A	25.7	27	28.4	1.0	23.1	5	40	37.5	0.096	C27A
1.5SMC30A	28.5	30	31.5	1.0	25.6	5	36	41.4	0.097	C30A
1.5SMC33A	31.4	33	34.7	1.0	28.2	5	33	45.7	0.098	C33A
1.5SMC36A	34.2	36	37.8	1.0	30.8	5	30	49.9	0.099	C36A
1.5SMC39A	37.1	39	41	1.0	33.3	5	28	53.9	0.100	C39A

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

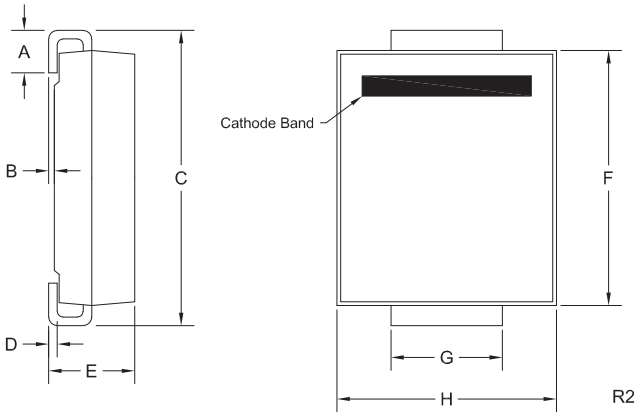
1.5SMC6.8A
THRU
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SURFACE MOUNT SILICON
UNI-DIRECTIONAL
GLASS PASSIVATED JUNCTION
TRANSIENT VOLTAGE SUPPRESSORS
1500 WATT, 6.8 THRU 220 VOLT

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 REVERSE SURGE CURRENT (Note 1) I_{RSM}	MAXIMUM REVERSE VOLTAGE V_{RSM} @ I_{RSM}	MAXIMUM TEMPERATURE COEFFICIENT ΘV_{BR}	MARKING CODE
	MIN V	NOM V	MAX V	mA	V	µA	A	V	% / °C	
1.5SMC43A	40.9	43	45.2	1.0	36.8	5	25.3	59.3	0.101	C43A
1.5SMC47A	44.7	47	49.4	1.0	40.2	5	23.2	64.8	0.101	C47A
1.5SMC51A	48.5	51	53.6	1.0	43.6	5	21.4	70.1	0.102	C51A
1.5SMC56A	53.2	56	58.8	1.0	47.8	5	19.5	77	0.103	C56A
1.5SMC62A	58.9	62	65.1	1.0	53.0	5	17.7	85	0.104	C62A
1.5SMC68A	64.6	68	71.4	1.0	58.1	5	16.3	92	0.104	C68A
1.5SMC75A	71.3	75	78.8	1.0	64.1	5	14.6	103	0.105	C75A
1.5SMC82A	77.9	82	86.1	1.0	70.1	5	13.3	113	0.105	C82A
1.5SMC91A	86.5	91	95.5	1.0	77.8	5	12	125	0.106	C91A
1.5SMC100A	95.0	100	105	1.0	85.5	5	11	137	0.106	C100A
1.5SMC110A	104.5	110	115.5	1.0	94.0	5	9.9	152	0.107	C110A
1.5SMC120A	114	120	126	1.0	102	5	9.1	165	0.107	C120A
1.5SMC130A	123.5	130	136.5	1.0	111	5	8.4	179	0.107	C130A
1.5SMC150A	142.5	150	157.5	1.0	128	5	7.2	207	0.108	C150A
1.5SMC160A	152	160	168	1.0	136	5	6.8	219	0.108	C160A
1.5SMC170A	161.5	170	178.5	1.0	145	5	6.4	234	0.108	C170A
1.5SMC180A	171	180	189	1.0	154	5	6.1	246	0.108	C180A
1.5SMC200A	190	200	210	1.0	171	5	5.5	274	0.108	C200A
1.5SMC220A	209	220	231	1.0	185	5	4.6	328	0.108	C220A

SMC CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)

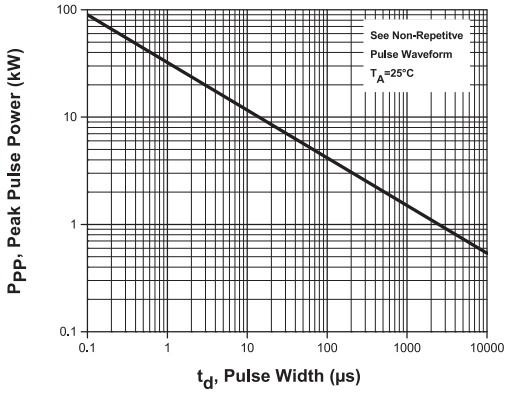
R8 (22-August 2016)

1.5SMC6.8A
THRU
1.5SMC220A

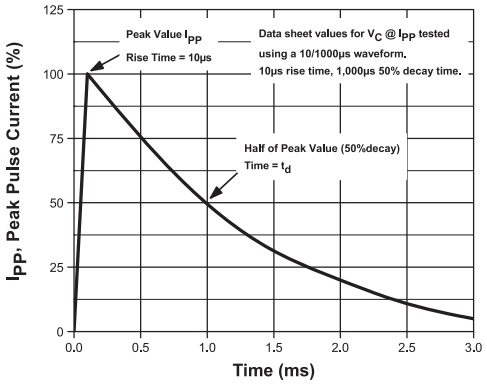
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TRANSIENT VOLTAGE SUPPRESSORS
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TYPICAL ELECTRICAL CHARACTERISTICS

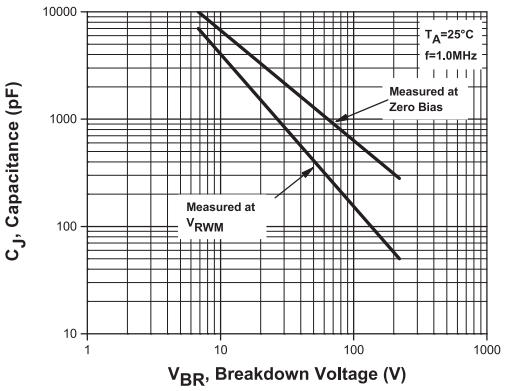
Peak Pulse Power



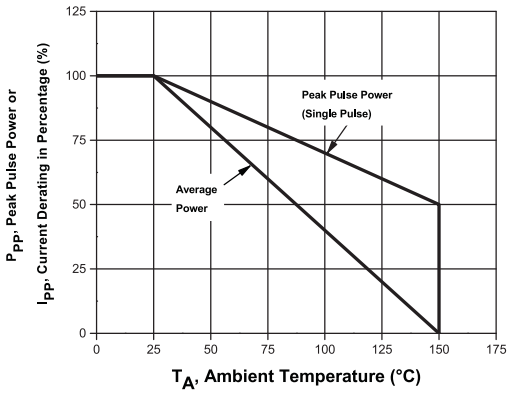
Non-Repetitive Pulse Waveform



Capacitance



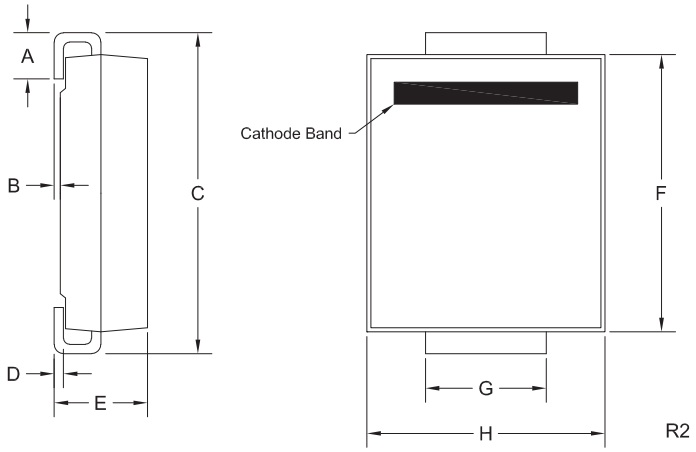
Power & Current Derating



Package Details
SMC Case



Mechanical Drawing



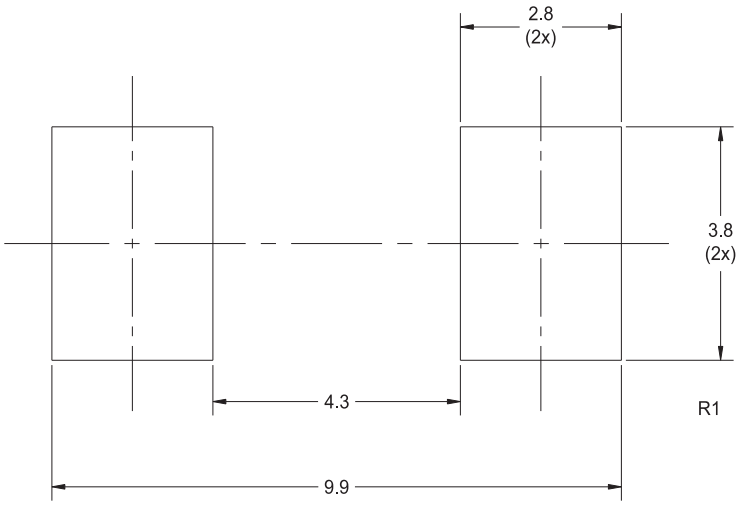
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.030	0.060	0.76	1.52
B	0.002	0.008	0.05	0.20
C	0.305	0.320	7.75	8.13
D	0.006	0.012	0.15	0.31
E	0.079	0.103	2.00	2.62
F	0.260	0.280	6.60	7.11
G	0.108	0.128	2.75	3.25
H	0.220	0.245	5.59	6.22

SMC (REV: R2)

Lead Code:
Reference individual device datasheet.

Part Marking: 3-6 Character Alpha/Numeric Code

Mounting Pad Geometry (Dimensions in mm)

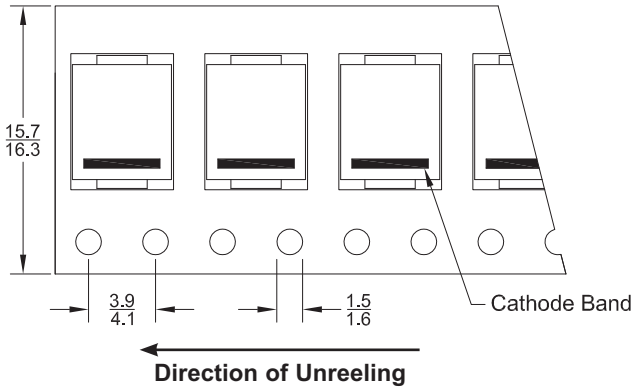


R4 (18-February 2021)

Package Details
SMC Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 16mm



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”	4	12,000	15x4x15	38x10x38	12	6
	11	33,000	15x15x9	38x38x23	30	14
	24	72,000	15x15x18	38x38x46	64	29

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

SMC Case



Device average mass . . . . . **232.5 mg**

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

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	1.63%	3.8	Si	7440-21-3	1.63%	3.8	16,344
leadframe	copper	39.11%	90.92	Cu	7440-50-8	39.11%	90.92	391,054
die attach	high temperature solder paste	1.88%	4.36	Pb	7439-92-1	1.73%	4.033	17,346
				Sn	7440-31-5	0.09%	0.218	938
				Ag	7440-22-4	0.05%	0.109	469
encapsulation*	EMC	56.77%	132	silica	7631-86-9	38.61%	89.76	386,065
				epoxy resin	29690-82-2	11.35%	26.4	113,548
				phenol resin	9003-35-4	5.68%	13.2	56,774
				Sb_2O_3	1309-64-4	0.57%	1.32	5,677
				Br	7726-95-6	0.57%	1.32	5,677
	EMC GREEN	56.77%	132	silica (fused)	60676-86-0	43.72%	101.64	437,161
				epoxy resin	29690-82-2	5.68%	13.2	56,774
				phenol resin	9003-35-4	5.51%	12.804	55,071
				carbon black	1333-86-4	0.17%	0.396	1,703
				metal hydroxide	1309-42-8	1.7%	3.96	17,032
plating**	tin/lead process	0.61%	1.42	Sn	7440-31-5	0.49%	1.136	4,886
				Pb	7439-92-1	0.12%	0.284	1,222
	matte tin	0.61%	1.42	Sn	7440-31-5	0.61%	1.42	6,108

*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.

Disclaimer
The information provided in this Material Composition data sheet is, to the best of our knowledge, correct. However, there is no guarantee to completeness or accuracy, as some information is derived from data sources outside the company.

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