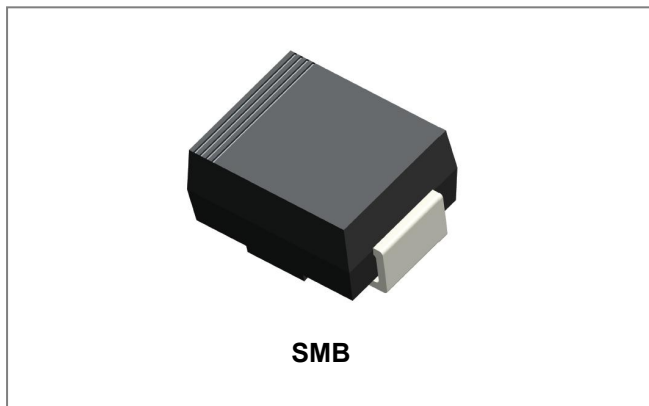


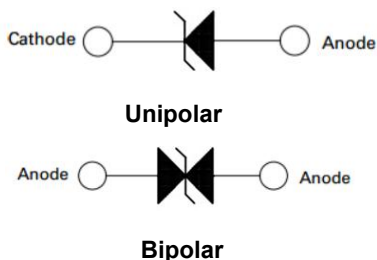
## 1.0SMBJ SERIES SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 1000W Peak Pulse Power Dissipation
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- RoHS Compliant
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- **Case:** SMB Low Profile Molded Plastic
- **Terminals:** Solder Plated , Solderable per MIL-STD 750, Method 2026
- **Polarity:** Cathode Band or Cathode Notch
- **Weight:**0.093 grams(approx.)

### Maximum Ratings and Thermal Characteristics@T<sub>A</sub>=25°C unless otherwise specified

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000us waveform (Note1, Fig.1).	P <sub>PPM</sub>	Minimum 1000	Watts
Steady State Power Dissipation at T <sub>L</sub> =75°C, Lead lengths.375",(9.5mm) (Fig.5).	P <sub>M(AV)</sub>	6.5	Watts
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 2, Fig.6).	I <sub>FSM</sub>	300	Amps
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	20	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	100	°C/W
Operating junction and Storage Temperature Range.	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes: 1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.  
 2. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	BI-POLAR	MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(μA)
		UNI	BI							
1.0SMBJ5.0A	1.0SMBJ5.0CA	A5	C5	5.0	6.40	7.00	10	9.2	108.7	800
1.0SMBJ6.0A	1.0SMBJ6.0CA	A6	C6	6.0	6.67	7.37	10	10.3	97.1	800
1.0SMBJ6.5A	1.0SMBJ6.5CA	A6V	C6V	6.5	7.22	7.98	10	11.2	89.3	500
1.0SMBJ7.0A	1.0SMBJ7.0CA	A7	C7	7.0	7.78	8.60	10	12.0	83.3	200
1.0SMBJ7.5A	1.0SMBJ7.5CA	A7V	C7V	7.5	8.33	9.21	1	12.9	77.5	100
1.0SMBJ8.0A	1.0SMBJ8.0CA	A8	C8	8.0	8.89	9.83	1	13.6	73.5	50
1.0SMBJ8.5A	1.0SMBJ8.5CA	A8V	C8V	8.5	9.44	10.40	1	14.4	69.4	20
1.0SMBJ9.0A	1.0SMBJ9.0CA	A9	C9	9.0	10.00	11.10	1	15.4	64.9	10
1.0SMBJ10A	1.0SMBJ10CA	A10	C10	10	11.10	12.30	1	17.0	58.8	5
1.0SMBJ11A	1.0SMBJ11CA	A11	C11	11	12.20	13.50	1	18.2	54.9	1
1.0SMBJ12A	1.0SMBJ12CA	A12	C12	12	13.30	14.70	1	19.9	50.3	1
1.0SMBJ13A	1.0SMBJ13CA	A13	C13	13	14.40	15.90	1	21.5	46.5	1
1.0SMBJ14A	1.0SMBJ14CA	A14	C14	14	15.60	17.20	1	23.2	43.1	1
1.0SMBJ15A	1.0SMBJ15CA	A15	C15	15	16.70	18.50	1	24.4	41.0	1
1.0SMBJ16A	1.0SMBJ16CA	A16	C16	16	17.80	19.70	1	26.0	38.5	1
1.0SMBJ17A	1.0SMBJ17CA	A17	C17	17	18.90	20.90	1	27.6	36.2	1
1.0SMBJ18A	1.0SMBJ18CA	A18	C18	18	20.00	22.10	1	29.2	34.2	1
1.0SMBJ20A	1.0SMBJ20CA	A20	C20	20	22.20	24.50	1	32.4	30.9	1
1.0SMBJ22A	1.0SMBJ22CA	A22	C22	22	24.40	26.90	1	35.5	28.2	1
1.0SMBJ24A	1.0SMBJ24CA	A24	C24	24	26.70	29.50	1	38.9	25.7	1
1.0SMBJ26A	1.0SMBJ26CA	A26	C26	26	28.90	31.90	1	42.1	23.8	1
1.0SMBJ28A	1.0SMBJ28CA	A28	C28	28	31.10	34.40	1	45.4	22.0	1
1.0SMBJ30A	1.0SMBJ30CA	A30	C30	30	33.30	36.80	1	48.4	20.7	1
1.0SMBJ33A	1.0SMBJ33CA	A33	C33	33	36.70	40.60	1	53.3	18.8	1
1.0SMBJ36A	1.0SMBJ36CA	A36	C36	36	40.00	44.20	1	58.1	17.2	1
1.0SMBJ40A	1.0SMBJ40CA	A40	C40	40	44.40	49.10	1	64.5	15.5	1
1.0SMBJ43A	1.0SMBJ43CA	A43	C43	43	47.80	52.80	1	69.4	14.4	1
1.0SMBJ45A	1.0SMBJ45CA	A45	C45	45	50.00	55.30	1	72.7	13.8	1
1.0SMBJ48A	1.0SMBJ48CA	A48	C48	48	53.30	58.90	1	77.4	12.9	1
1.0SMBJ51A	1.0SMBJ51CA	A51	C51	51	56.70	62.70	1	82.4	12.1	1
1.0SMBJ54A	1.0SMBJ54CA	A54	C54	54	60.00	66.30	1	87.1	11.5	1
1.0SMBJ58A	1.0SMBJ58CA	A58	C58	58	64.40	71.20	1	93.6	10.7	1
1.0SMBJ60A	1.0SMBJ60CA	A60	C60	60	66.70	73.70	1	96.8	10.3	1
1.0SMBJ64A	1.0SMBJ64CA	A64	C64	64	71.10	78.60	1	103	9.7	1

Notes: For bidirectional type having VRWM of 10 volts and less, the IR limit is double.

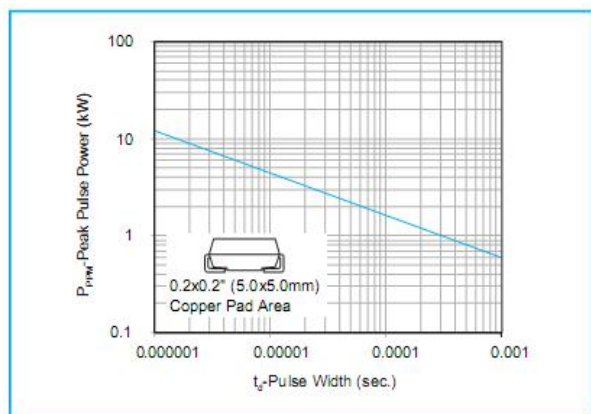
**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	BI-POLAR	MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(uA)
		UNI	BI							
1.0SMBJ70A	1.0SMBJ70CA	A70	C70	70	77.80	86.00	1	113	8.8	1
1.0SMBJ75A	1.0SMBJ75CA	A75	C75	75	83.30	92.10	1	121	8.3	1
1.0SMBJ78A	1.0SMBJ78CA	A78	C78	78	86.70	95.80	1	126	7.9	1
1.0SMBJ85A	1.0SMBJ85CA	A85	C85	85	94.4	104.0	1	137	7.3	1
1.0SMBJ90A	1.0SMBJ90CA	A90	C90	90	100.0	111.0	1	146	6.8	1
1.0SMBJ100A	1.0SMBJ100CA	A100	C100	100	111.0	123.0	1	162	6.2	1
1.0SMBJ110A	1.0SMBJ110CA	A110	C110	110	122.0	135.0	1	177	5.6	1
1.0SMBJ120A	1.0SMBJ120CA	A120	C120	120	133.0	147.0	1	193	5.2	1
1.0SMBJ130A	1.0SMBJ130CA	A130	C130	130	144.0	159.0	1	209	4.8	1
1.0SMBJ150A	1.0SMBJ150CA	A150	C150	150	167.0	185.0	1	243	4.1	1
1.0SMBJ160A	1.0SMBJ160CA	A160	C160	160	178.0	197.0	1	259	3.9	1
1.0SMBJ170A	1.0SMBJ170CA	A170	C170	170	189.0	209.0	1	275	3.6	1
1.0SMBJ180A	1.0SMBJ180CA	A180	C180	180	201.0	222.0	1	292	3.4	1

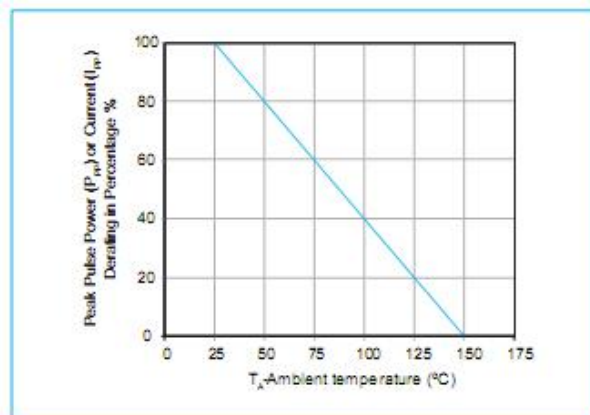
Notes: For bidirectional type having VRWM of 10 volts and less, the IR limit is double.

**Ratings and Characteristics Curves**

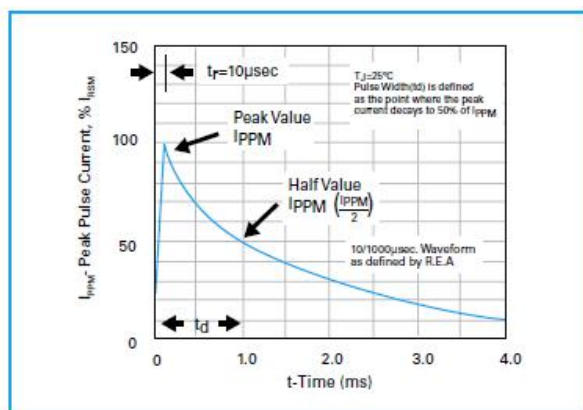
**Fig.1-Peak Pulse Power Rating Curve**



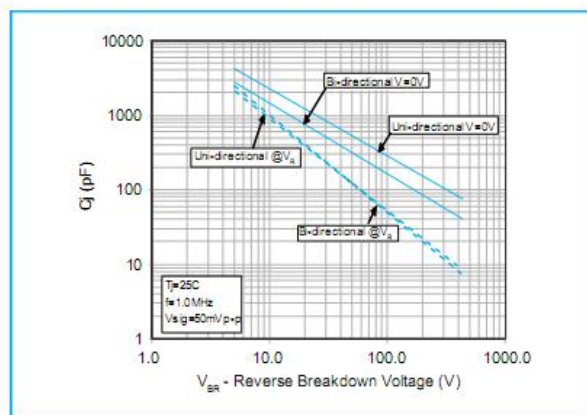
**Fig.2- Pulse Derating Curve**



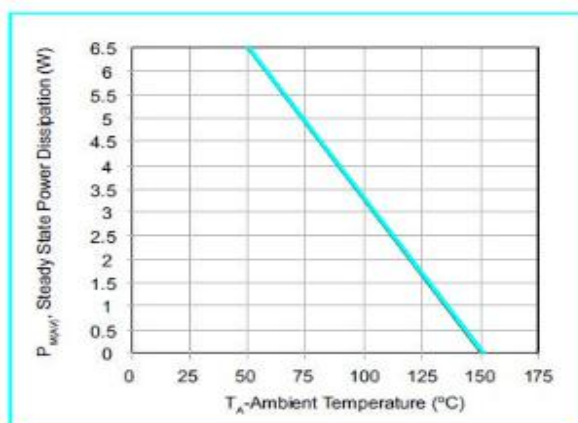
**Fig.3-Pulse Waveform**



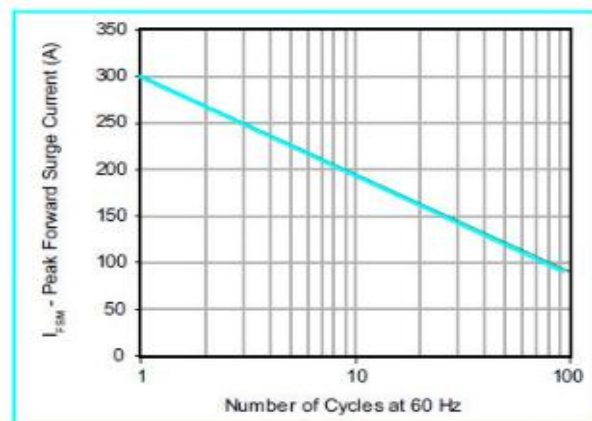
**Fig.4- Typical Junction Capacitance Uni-Directional**



**Fig.5-Steady State Power Dissipation Derating Curve**



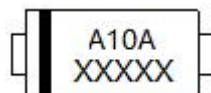
**Fig.6-Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



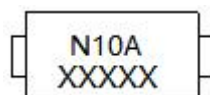
**Ordering Information**

Device	Package	Shipping
1.0SMBJ SERIES	SMB (Pb-Free)	3000pcs / reel
1.0SMBJ SERIES TR	SMB (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


1.0SMBJ6.8A

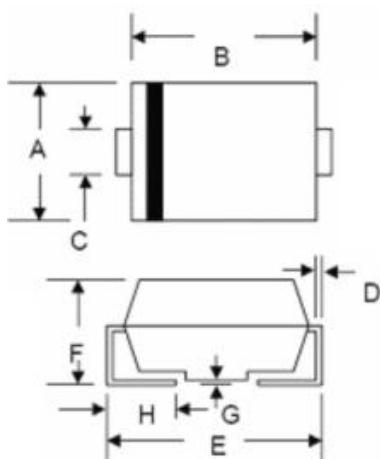


1.0SMBJ6.8CA

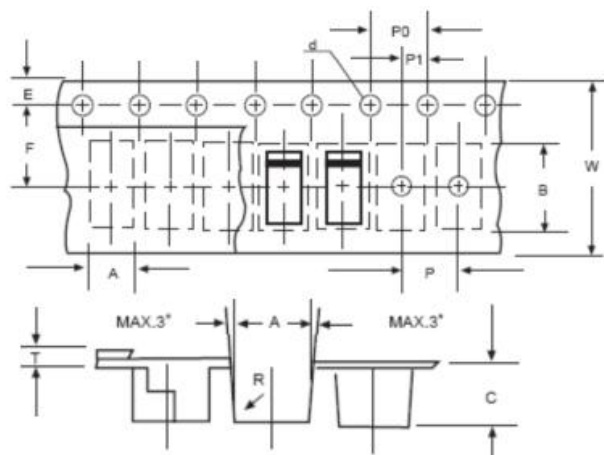
Where XXXXX is YYWWL

A10A/N10A = Marking code  
 YY = Year  
 WW = Week  
 L = Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Mechanical Dimensions SMB**


Dim.	SMB/DO-214AA			
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.80	2.20	0.071	0.087
D	0.152	0.305	0.006	0.012
E	4.80	5.59	0.189	0.220
F	2.10	2.60	0.083	0.102
G	0.051	0.203	0.002	0.008
H	0.76	1.52	0.030	0.060
	In Millimeters		In inches	

**Carrier Tape Specification SMB**


SYMBOL	Millimeters	
	Min.	Max.
A	3.99	4.19
B	5.72	5.92
C	3.23	3.43
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	7.90	8.10
P0	3.90	4.10
P1	1.90	2.10
T	-	0.60
W	11.80	12.20

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