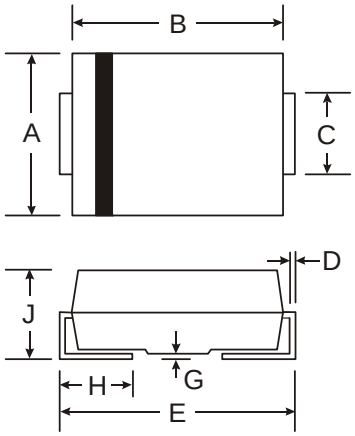
SMBJ5.0(C)A - SMBJ170(C)A

600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

- 600W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- **Lead Free Finish/RoHS Compliant (Note 4)**



SMB		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.70
C	1.91	2.21
D	0.15	0.31
E	5.00	5.59
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Marking: Date Code and Marking Code See Page 4
- Ordering Info: See Page 4
- Weight: 0.1 grams (approximate)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above T_A = 25° C) (Note 1)	P_{PK}	600	W
Peak Power Derating Above 25°C	P_{der}	4.8	W/°C
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Notes 1, 2, & 3)	I_{FSM}	100	A
Steady State Power Dissipation @ T_L = 75°C	$PM_{(AV)}$	5.0	W
Instantaneous Forward Voltage @ I_{PP} = 35A V_{BR}<100V (Notes 1, 2, & 3) $V_{BR}\geq$100V	V_F	3.5 5.0	V V
Operating Temperature Range	T_j	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Notes:
1. Valid provided that terminals are kept at ambient temperature.
2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
3. Unidirectional units only.
4. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7.*

Part Number Add C For Bi-Directional (Note 5)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 6)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 7)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Marking Code	
See Note 4	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (μA)	V_C (V)	(A)	BI-	UNI-
SMBJ5.0(C)A	5.0	6.40	7.23	10	800	9.2	65.2	AE	KE
SMBJ6.0(C)A	6.0	6.67	7.67	10	800	10.3	58.3	AG	KG
SMBJ6.5(C)A	6.5	7.22	8.30	10	500	11.2	53.6	AK	KK
SMBJ7.0(C)A	7.0	7.78	8.95	10	200	12.0	50.0	AM	KM
SMBJ7.5(C)A	7.5	8.33	9.58	1.0	100	12.9	46.5	AP	KP
SMBJ8.0(C)A	8.0	8.89	10.23	1.0	50	13.6	44.1	AR	KR
SMBJ8.5(C)A	8.5	9.44	10.82	1.0	10	14.4	41.7	AT	KT
SMBJ9.0(C)A	9.0	10.00	11.50	1.0	5.0	15.4	39.0	AV	KV
SMBJ10(C)A	10.0	11.10	12.80	1.0	5.0	17.0	35.3	AX	KX
SMBJ11(C)A	11.0	12.20	14.40	1.0	5.0	18.2	33.0	AZ	KZ
SMBJ12(C)A	12.0	13.30	15.30	1.0	5.0	19.9	30.2	BE	LE
SMBJ13(C)A	13.0	14.40	16.50	1.0	5.0	21.5	27.9	BG	LG
SMBJ14(C)A	14.0	15.60	17.90	1.0	5.0	23.2	25.8	BK	LK
SMBJ15(C)A	15.0	16.70	19.20	1.0	5.0	24.4	24.0	BM	LM
SMBJ16(C)A	16.0	17.80	20.50	1.0	5.0	26.0	23.1	BP	LP
SMBJ17(C)A	17.0	18.90	21.70	1.0	5.0	27.6	21.7	BR	LR
SMBJ18(C)A	18.0	20.00	23.30	1.0	5.0	29.2	20.5	BT	LT
SMBJ20(C)A	20.0	22.20	25.50	1.0	5.0	32.4	18.5	BV	LV
SMBJ22(C)A	22.0	24.40	28.00	1.0	5.0	35.5	16.9	BX	LX
SMBJ24(C)A	24.0	26.70	30.70	1.0	5.0	38.9	15.4	BZ	LZ
SMBJ26(C)A	26.0	28.90	33.20	1.0	5.0	42.1	14.2	CE	ME
SMBJ28(C)A	28.0	31.10	35.80	1.0	5.0	45.4	13.2	CG	MG
SMBJ30(C)A	30.0	33.30	38.30	1.0	5.0	48.4	12.4	CK	MK
SMBJ33(C)A	33.0	36.70	42.20	1.0	5.0	53.3	11.3	CM	MM
SMBJ36(C)A	36.0	40.00	46.00	1.0	5.0	58.1	10.3	CP	MP
SMBJ40(C)A	40.0	44.40	51.10	1.0	5.0	64.5	9.3	CR	MR
SMBJ43(C)A	43.0	47.80	54.90	1.0	5.0	69.4	8.6	CT	MT
SMBJ45(C)A	45.0	50.00	57.50	1.0	5.0	72.7	8.3	CV	MV
SMBJ48(C)A	48.0	53.30	61.30	1.0	5.0	77.4	7.7	CX	MX
SMBJ51(C)A	51.0	56.70	65.20	1.0	5.0	82.4	7.3	CZ	MZ
SMBJ54(C)A	54.0	60.00	69.00	1.0	5.0	87.1	6.9	DE	NE
SMBJ58(C)A	58.0	64.40	74.60	1.0	5.0	93.6	6.4	DG	NG
SMBJ60(C)A	60.0	66.70	76.70	1.0	5.0	96.8	6.2	DK	NK
SMBJ64(C)A	64.0	71.10	81.80	1.0	5.0	103.0	5.8	DM	NM
SMBJ70(C)A	70.0	77.80	89.50	1.0	5.0	113.0	5.3	DP	NP
SMBJ75(C)A	75.0	83.30	95.80	1.0	5.0	121.0	4.9	DR	NR
SMBJ78(C)A	78.0	86.70	99.70	1.0	5.0	126.0	4.7	DT	NT
SMBJ85(C)A	85.0	94.40	108.20	1.0	5.0	137.0	4.4	DV	NV
SMBJ90(C)A	90.0	100.0	115.50	1.0	5.0	146.0	4.1	DX	NX
SMBJ100(C)A	100.0	111.0	128.00	1.0	5.0	162.0	3.7	DZ	NZ
SMBJ110(C)A	110.0	122.0	140.00	1.0	5.0	177.0	3.4	EE	PE
SMBJ120(C)A	120.0	133.0	153.00	1.0	5.0	193.0	3.1	EG	PG
SMBJ130(C)A	130.0	144.0	165.50	1.0	5.0	209.0	2.9	EK	PK
SMBJ150(C)A	150.0	167.0	192.50	1.0	5.0	243.0	2.5	EM	PM
SMBJ160(C)A	160.0	178.0	205.00	1.0	5.0	259.0	2.3	EP	PP
SMBJ170(C)A	170.0	189.0	217.50	1.0	5.0	275.0	2.2	ER	PR

Notes: 5. Suffix C denotes Bi-directional device.

6. V_{BR} measured with I_T current pulse = 300μs

7. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

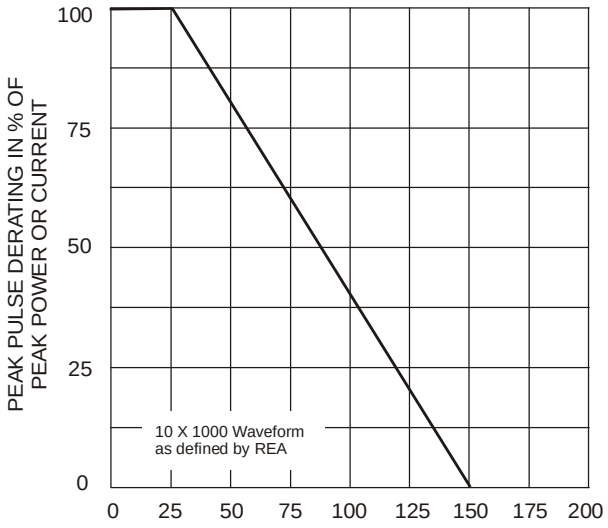


Fig. 1 Pulse Derating Curve

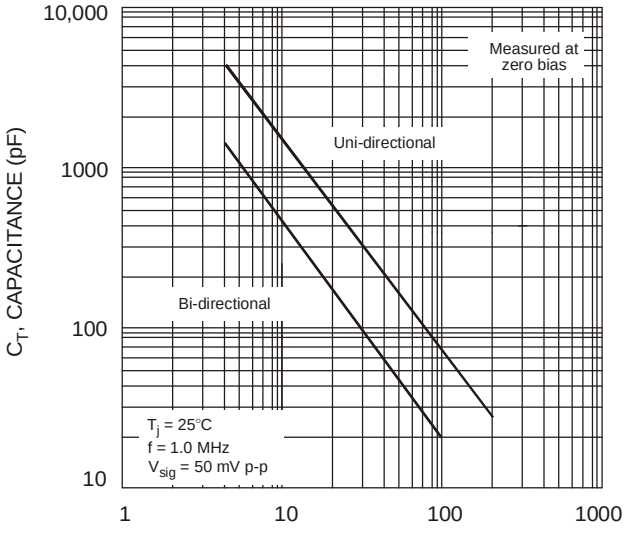


Fig. 2 Typical Total Capacitance

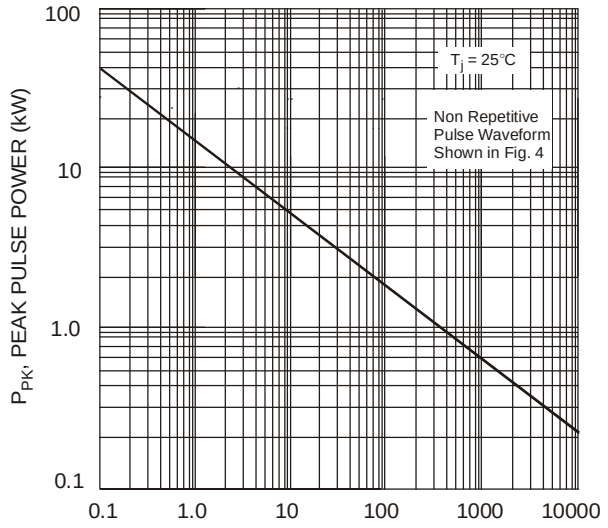


Fig. 3 Pulse Rating Curve

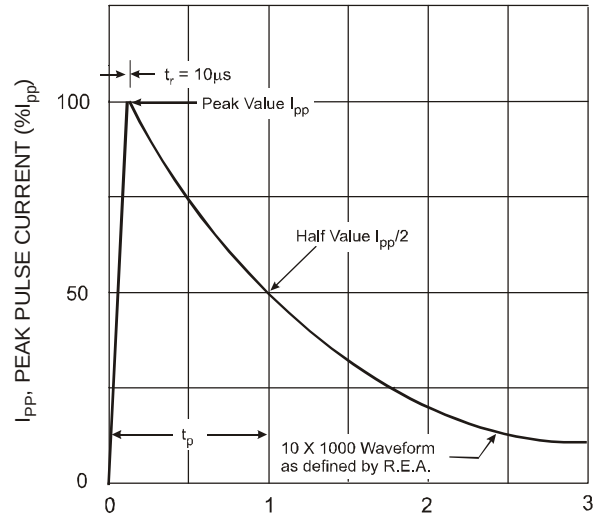


Fig. 4 Pulse Waveform

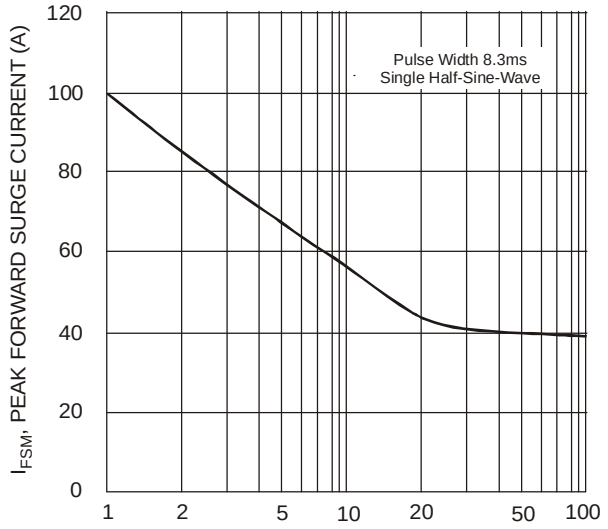


Fig. 5 Maximum Non-Repetitive Surge Current

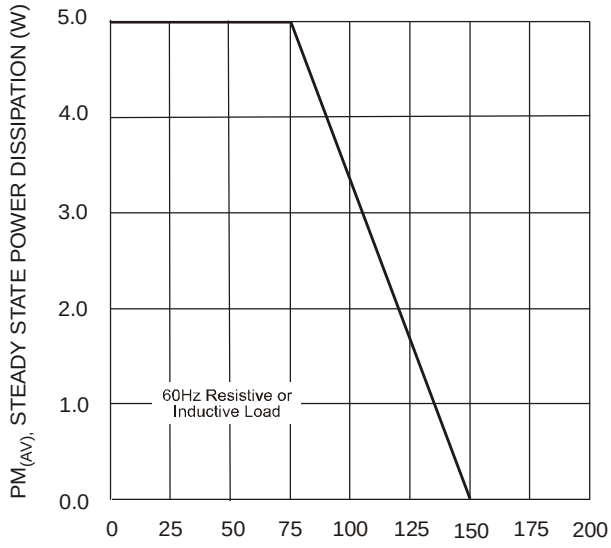


Fig. 6 Steady State Power Derating Curve

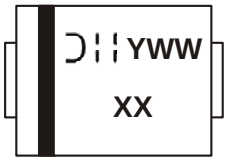
Ordering Information (Note 8)

Device*	Packaging	Shipping
SMBJXXX(C)A-13-F	SMB	3000/Tape & Reel

Notes: 8. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02007.pdf.

*x = Device Voltage, e.g., SMBJ170A-13-F.

Marking Information



XX = Product type marking code (See Page 2)
= Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year ex: 2 for 2002
WW = Week code 01 to 52