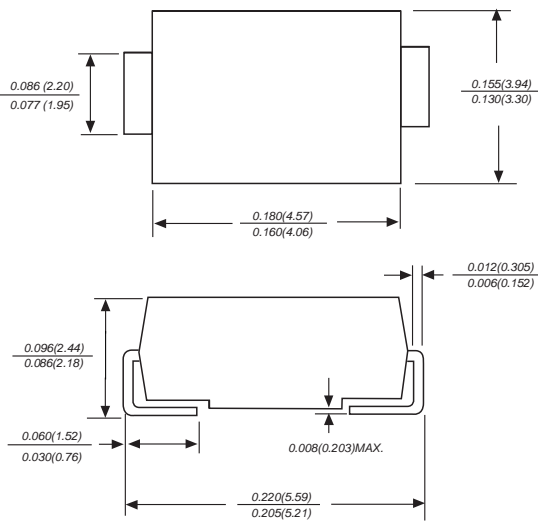


# SMBJ3.3(C)A - SMBJ440(C)A

## 600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

### DO-214AA



Dimensions in inches and (millimeters)

### 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
- Plastic Material - UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: SMB, Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish).
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Marking: Date Code and Marking Code See Page 3
- Weight: 0.1 grams (approx.)
- Ordering Info: See Page 3

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

- 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.

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 5)		Test Current $I_T$ (mA)	Max. Reverse Leakage @ $V_{RWM}$ (Note 6) $I_R$ ( $\mu$ A)	Max. Clamping Voltage @ $I_{PP}$ $V_C$ (V)	Max. Peak Pulse Current $I_{PP}$ (A)	Marking Code	
		Min (V)	Max (V)					BI-	UNI-
SMBJ3.3(C)A	3.3	4.10	4.60	1	200	7.3	50.0	*	*
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

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 5)		Test Current $I_T$ (mA)	Max. Reverse Leakage @ $V_{RWM}$ (Note 6) $I_R$ ( $\mu$ A)	Max. Clamping Voltage @ $I_{pp}$ $V_C$ (V)	Max. Peak Pulse Current $I_{pp}$ (A)	Marking Code	
		Min (V)	Max (V)					BI-	UNI-
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
SMBJ180(C)A	180.0	200.0	230.00	1.0	5.0	290.0	2.1	ET	PT
SMBJ190(C)A	190.0	211.0	243.00	1.0	5.0	306.0	2.0	EV	PV
SMBJ200(C)A	200.0	222.0	256.00	1.0	5.0	322.0	1.9	EX	PX
SMBJ210(C)A	210.0	233.0	268.00	1.0	5.0	339.0	1.8	EZ	PZ
SMBJ220(C)A	220.0	244.0	281.60	1.0	5.0	355.0	1.7	FE	QE
SMBJ250(C)A	250.0	278.0	309.00	1.0	5.0	403.0	1.5	FG	QG
SMBJ300(C)A	300.0	333.0	371.00	1.0	5.0	484.0	1.2	FK	QK
SMBJ350(C)A	350.0	389.0	432.00	1.0	5.0	565.0	1.1	FM	QM
SMBJ400(C)A	400.0	444.0	494.00	1.0	5.0	645.0	0.9	FP	QP
SMBJ440(C)A	440.0	489.0	543.00	1.0	5.0	710.0	0.8	FR	QR

- Notes:
4. Suffix C denotes Bi-directional device.
  5.  $V_{BR}$  measured with  $I_T$  current pulse = 300 $\mu$ s
  6. For Bi-Directional devices having  $V_{RWM}$  of 10V and under, the  $I_R$  is doubled.

# RATINGS AND CHARACTERISTIC CURVES SMBJ3.3(C)A - SMBJ440(C)A

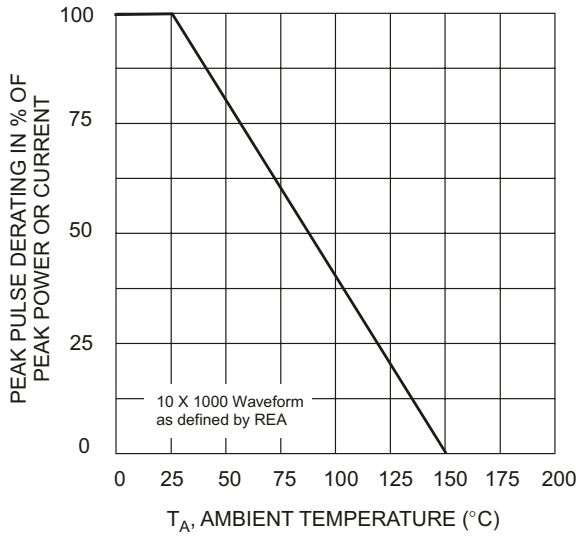


Fig. 1 Pulse Derating Curve

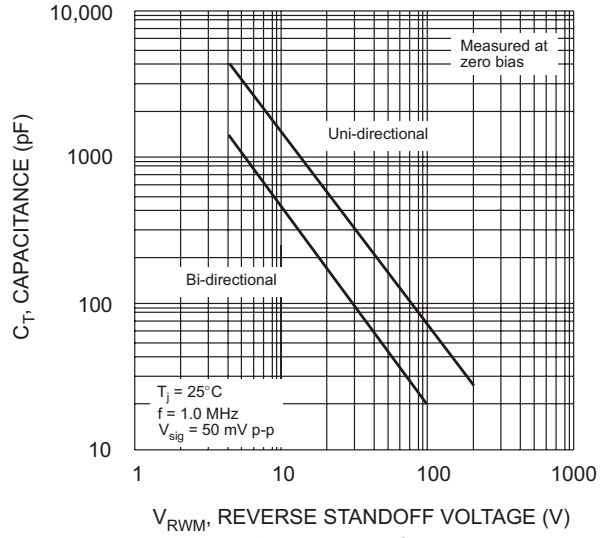


Fig. 2 Typical Total Capacitance

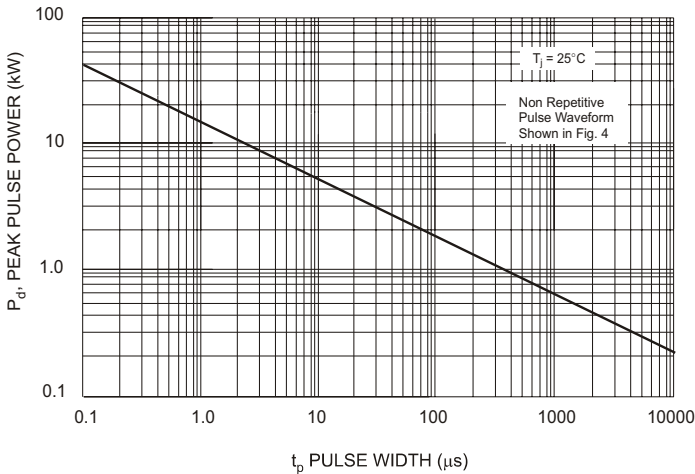


Fig. 3 Pulse Rating Curve

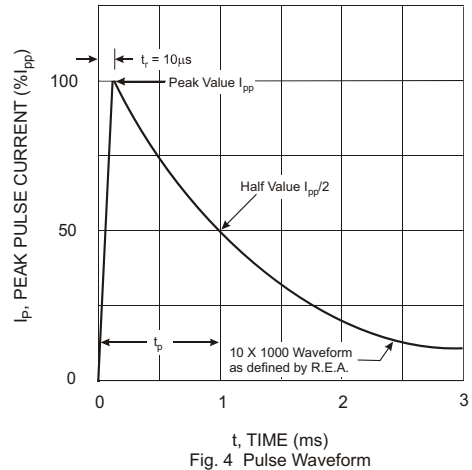


Fig. 4 Pulse Waveform

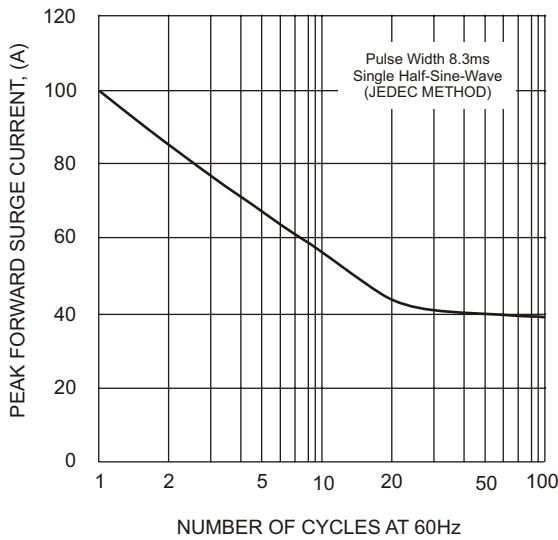


Fig. 5, Maximum Non-Repetitive Surge Current

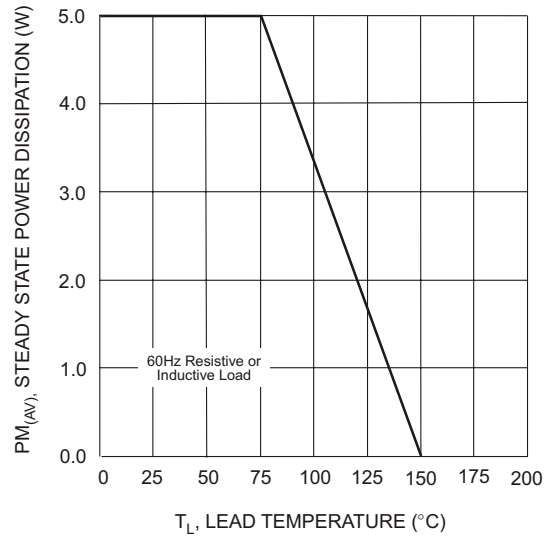


Fig. 6 Steady State Power Derating Curve

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