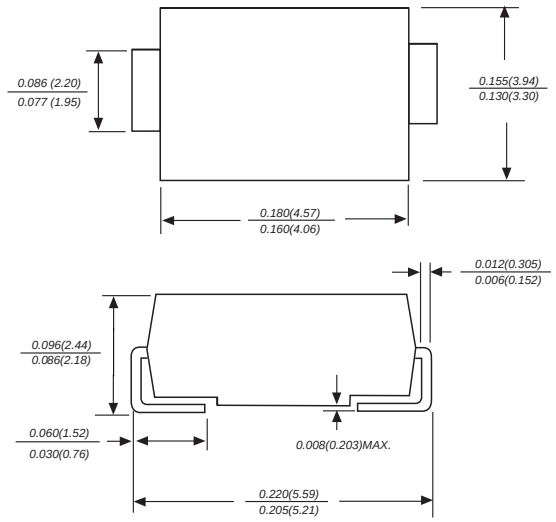
SMBJ3.3(C)A - SMBJ440(C)A

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°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 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°C	$PM_{(AV)}$	5.0	W
Instantaneous Forward Voltage @ I_{PP} = 35A (Notes 1, 2, & 3) V_{BR}<100V V_{BR}≥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.

STAR SEA

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (μA)	V_C (V)	(A)	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

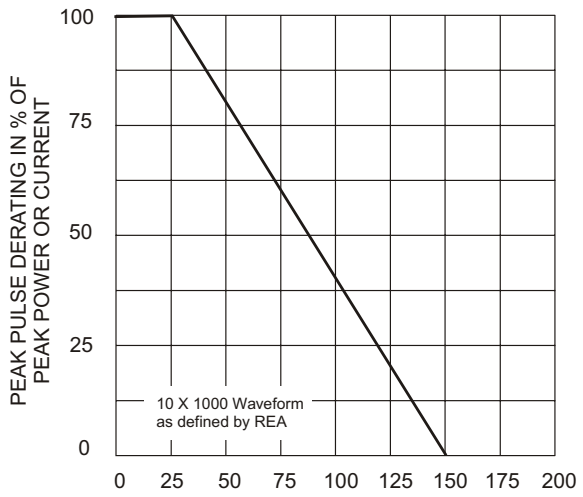
Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (μA)	V_C (V)	(A)	BI-	UNI-
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.

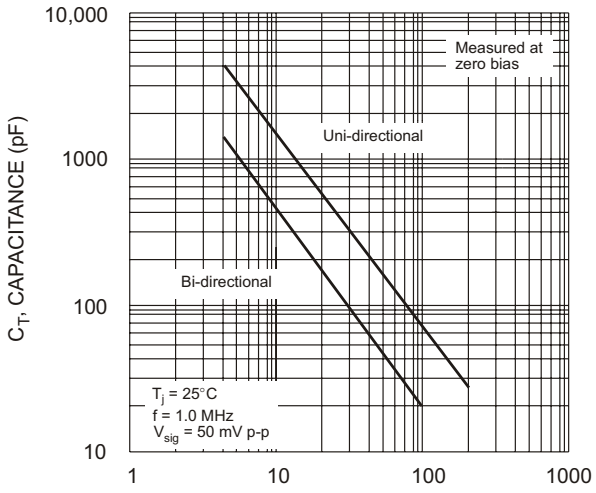
5. V_{BR} measured with I_T current pulse = 300μs

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

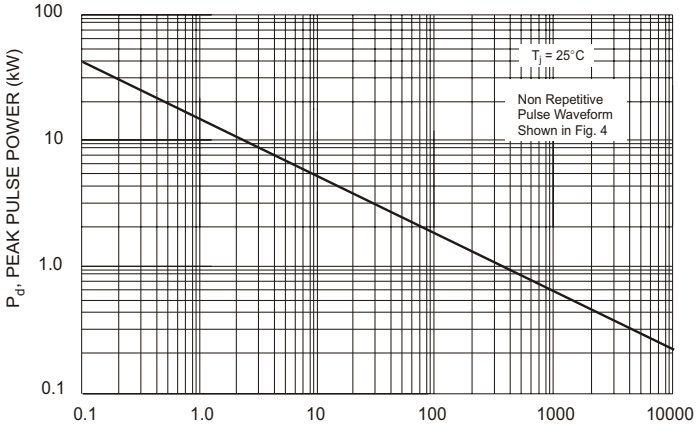
RATINGS AND CHARACTERISTIC CURVES SMBJ3.3(C)A - SMBJ440(C)A



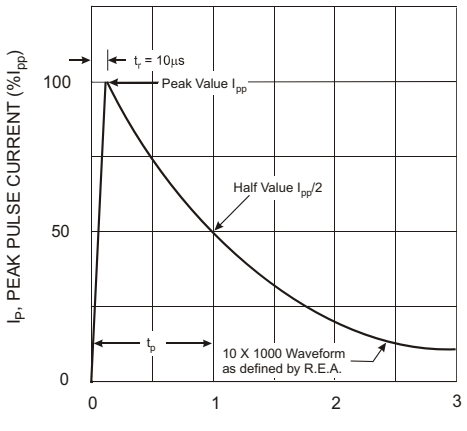
T_A, AMBIENT TEMPERATURE (°C)
Fig. 1 Pulse Derating Curve



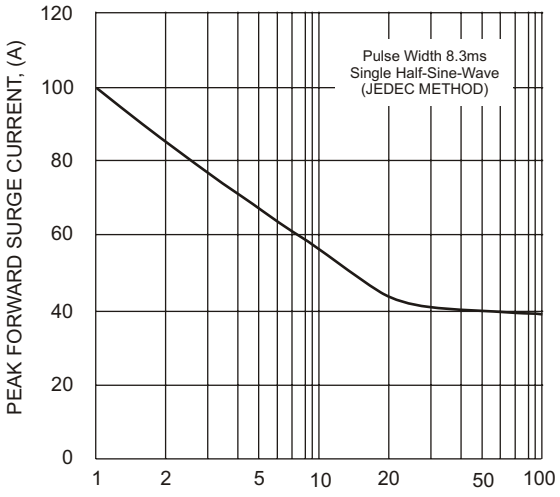
V_{RWM}, REVERSE STANDOFF VOLTAGE (V)
Fig. 2 Typical Total Capacitance



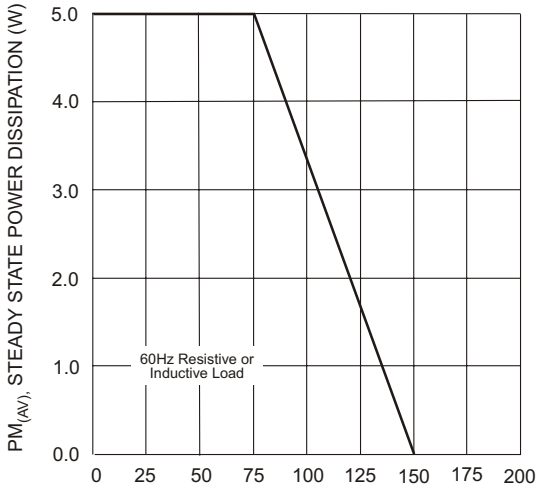
t_p PULSE WIDTH (μs)
Fig. 3 Pulse Rating Curve



t, TIME (ms)
Fig. 4 Pulse Waveform



NUMBER OF CYCLES AT 60Hz
Fig. 5, Maximum Non-Repetitive Surge Current



T_L, LEAD TEMPERATURE (°C)
Fig. 6 Steady State Power Derating Curve

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