V. Transient Voltage Suppressor

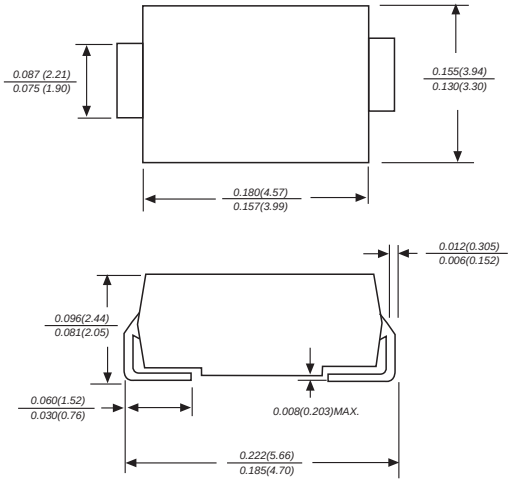
600W Surface Mount TVS (Stand-off Voltage: 5.0~440 Volts)
SMBJ Series (Package: SMB (DO-214AA))

FEATURES

- Optimzed for LAN protection applications.
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2(IEC801-2).
- Ideal for EFT protection of data lines in accordance with IEC 1000-4-4(IEC801-2).
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Glass passivated junction.
- 600W peak pulse power capability.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time: typically less than 1.0ps from 0v to $V_{(BR)}$ min.
- High temperature soldering guaranteed: 265℃/10s at terminals.

MECHANICAL DATA

- Case : JEDEC DO-214AA molded plastic body over passivated junction.
- Terminals : Solder plated, solderable per MIL-STD-750, method 2026
- Polarity : Color band denotes cathode except for bi-directional types.
- Mounting Position : Any
- Weight : 0.090 grams



Case: SMB
Dimensions in inches and (millimetres)

Devices for Bi-Directional Applications

For bi-directional devices, use suffix “CA” for types SMBJ5.0CA thru SMBJ440CA (e.g. SMBJ10CA). Electrical characteristics apply in both directions.

Maximum Ratings, Thermal & Electrical Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified)

Ratings	Symbol	Value	Units
Peak power dissipation with a 10/1000μs waveform (1) (2) (see Fig. 1)	P_{PPM}	Minimum 600	Watts
Peak pulse current with a 10/1000μs waveform (1)	I_{PPM}	See Table 1	Amps
Steady state power dissipation (3)	$P_{M(AV)}$	5.0	Watts
Peak forward surge current (1) (2) (3)	I_{FSM}	100	Amps
Maximum instantaneous forward voltage at 50 A (3) (4) for unidirectional only	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	Tj, Tstg	-55 to +150	℃

Note:
1. Non-repetitive current pulse, per Fig.3 and derated above Ta = 25℃ per Fig.2.
2. Mounted on 5.0 x 5.0 mm copper pads to each terminal.
3. Measured on 8.3ms single half sine-wave for uni-directional devices only.
4. V_F = 3.5V on SMBJ5.0A thru SMBJ90A devices and V_F = 5.0V on SMBJ100A thru SMBJ440A devices.

V. TVS & Overvoltage Protection Device

600W Surface Mount TVS (Stand-off Voltage: 5.0~440 Volts)
SMBJ Series (Package: SMB (DO-214AA))

Device Type	Device Marking Code			Breakdown Voltage $V_{(BR)}$ @I_T			Maximum Reverse Leakage I_R(μA) @V_{WM}	Stand-off Voltage V_{WM} (Volts)	Maximum Peak Pulse Current I_{PPM}(A)	Maximum Clamping Voltage Vc (Volts) @I_{PPM}
	Option 1	Option 2								
	Full Part Number	Uni	Bi	Min (V)	Max (V)	I_T (mA)				
SMBJ5.0(C)A	Full PN	KE	AE	6.40	7.00	10	800	5.0	65.3	9.20
SMBJ6.0(C)A	Full PN	KG	AG	6.67	7.37	10	800	6.0	58.3	10.3
SMBJ6.5(C)A	Full PN	KK	AK	7.22	7.98	10	500	6.5	53.6	11.2
SMBJ7.0(C)A	Full PN	KM	AM	7.78	8.60	10	200	7.0	50.0	12.0
SMBJ7.5(C)A	Full PN	KP	AP	8.33	9.21	1	100	7.5	46.6	12.9
SMBJ8.0(C)A	Full PN	KR	AR	8.89	9.83	1	50	8.0	44.2	13.6
SMBJ8.5(C)A	Full PN	KT	AT	9.44	10.4	1	20	8.5	41.7	14.4
SMBJ9.0(C)A	Full PN	KV	AV	10.0	11.1	1	10	9.0	39.0	15.4
SMBJ10(C)A	Full PN	KX	AX	11.1	12.3	1	5.0	10	35.3	17.0
SMBJ11(C)A	Full PN	KZ	AZ	12.2	13.5	1	5.0	11	33.0	18.2
SMBJ12(C)A	Full PN	LE	BE	13.3	14.7	1	5.0	12	30.2	19.9
SMBJ13(C)A	Full PN	LG	BG	14.4	15.9	1	5.0	13	28.0	21.5
SMBJ14(C)A	Full PN	LK	BK	15.6	17.2	1	5.0	14	25.9	23.2
SMBJ15(C)A	Full PN	LM	BM	16.7	18.5	1	5.0	15	24.6	24.4
SMBJ16(C)A	Full PN	LP	BP	17.8	19.7	1	5.0	16	23.1	26.0
SMBJ17(C)A	Full PN	LR	BR	18.9	20.9	1	5.0	17	21.8	27.6
SMBJ18(C)A	Full PN	LT	BT	20.0	22.1	1	5.0	18	20.6	29.2
SMBJ20(C)A	Full PN	LV	BV	22.2	24.5	1	5.0	20	18.6	32.4
SMBJ22(C)A	Full PN	LX	BX	24.4	26.9	1	5.0	22	16.9	35.5
SMBJ24(C)A	Full PN	LZ	BZ	26.7	29.5	1	5.0	24	15.5	38.9
SMBJ26(C)A	Full PN	ME	CE	28.9	31.9	1	5.0	26	14.3	42.1
SMBJ28(C)A	Full PN	MG	CG	31.1	34.4	1	5.0	28	13.3	45.4
SMBJ30(C)A	Full PN	MK	CK	33.3	36.8	1	5.0	30	12.4	48.4
SMBJ33(C)A	Full PN	MM	CM	36.7	40.6	1	5.0	33	11.3	53.3
SMBJ36(C)A	Full PN	MP	CP	40.0	44.2	1	5.0	36	10.4	58.1
SMBJ40(C)A	Full PN	MR	CR	44.4	49.1	1	5.0	40	9.3	64.5
SMBJ43(C)A	Full PN	MT	CT	47.8	52.8	1	5.0	43	8.7	69.4
SMBJ45(C)A	Full PN	MV	CV	50.0	55.3	1	5.0	45	8.3	72.7
SMBJ48(C)A	Full PN	MX	CX	53.3	58.9	1	5.0	48	7.8	77.4
SMBJ51(C)A	Full PN	MZ	CZ	56.7	62.7	1	5.0	51	7.3	82.4
SMBJ54(C)A	Full PN	NE	DE	60.0	66.3	1	5.0	54	6.9	87.1
SMBJ58(C)A	Full PN	NG	DG	64.4	71.2	1	5.0	58	6.5	93.6
SMBJ60(C)A	Full PN	NK	DK	66.7	73.7	1	5.0	60	6.2	96.8
SMBJ64(C)A	Full PN	NM	DM	71.1	78.6	1	5.0	64	5.9	103
SMBJ70(C)A	Full PN	NP	DP	77.8	86.0	1	5.0	70	5.3	113
SMBJ75(C)A	Full PN	NR	DR	83.3	92.1	1	5.0	75	5.0	121
SMBJ78(C)A	Full PN	NT	DT	86.7	95.8	1	5.0	78	4.8	126
SMBJ85(C)A	Full PN	NV	DV	94.4	104	1	5.0	85	4.4	137
SMBJ90(C)A	Full PN	NX	DX	100	111	1	5.0	90	4.1	146
SMBJ100(C)A	Full PN	NZ	DZ	111	123	1	5.0	100	3.7	162
SMBJ110(C)A	Full PN	PE	EE	122	135	1	5.0	110	3.4	177
SMBJ120(C)A	Full PN	PG	EG	133	147	1	5.0	120	3.1	193
SMBJ130(C)A	Full PN	PK	EK	144	159	1	5.0	130	2.9	209
SMBJ150(C)A	Full PN	PM	EM	167	185	1	5.0	150	2.5	243
SMBJ160(C)A	Full PN	PP	EP	178	197	1	5.0	160	2.3	259
SMBJ170(C)A	Full PN	PR	ER	189	209	1	5.0	170	2.2	275
SMBJ180(C)A	Full PN	PT	ET	201	222	1	5.0	180	2.1	292
SMBJ200(C)A	Full PN	PV	EV	224	247	1	5.0	200	1.9	324
SMBJ220(C)A	Full PN	PX	EX	246	272	1	5.0	220	1.7	356
SMBJ250(C)A	Full PN	PZ	EZ	279	309	1	5.0	250	1.5	405
SMBJ300(C)A	Full PN	QE	FE	335	371	1	5.0	300	1.3	486
SMBJ350(C)A	Full PN	QG	FG	391	432	1	5.0	350	1.1	567
SMBJ400(C)A	Full PN	QK	FK	447	494	1	5.0	400	0.9	648
SMBJ440(C)A	Full PN	QM	FM	492	543	1	5.0	440	0.9	713

Note:
1. $V_{(BR)}$ measured after I_T applied for 300us square wave pulse or equivalent
2. Surge current waveform per Fig. 3 and derate per Fig. 2
3. For bi-directional types having V_{WM} of 10 Volts and less, the I_R limit is doubled
4. All terms and symbols are consistent with ANSI/IEEE C62.35

Ratings and Characteristic Curves of SMBJ Series

FIG. 1-PEAK PULSE POWER RATING CURVE

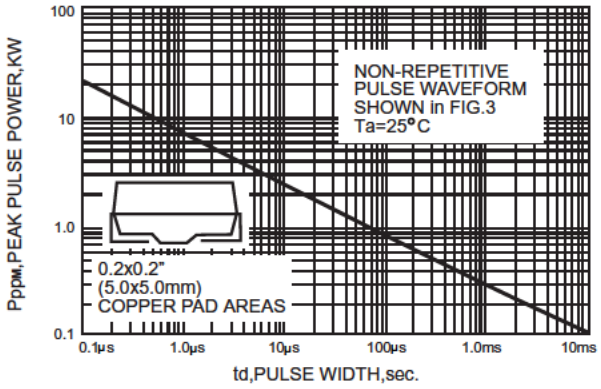


FIG. 2-PULSE DERATING CURVE

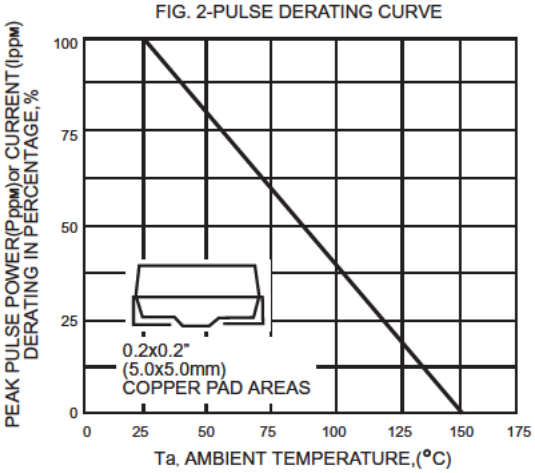


FIG.3-PULSE WAVEFORM

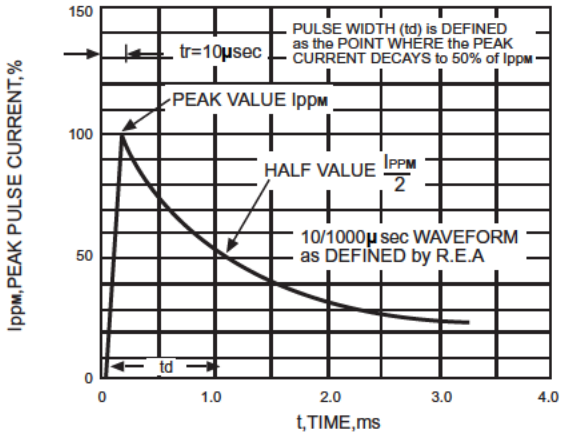


FIG. 4-TYPICAL JUNCTIONAL CAPACITANCE
UNIDIRECTIONAL

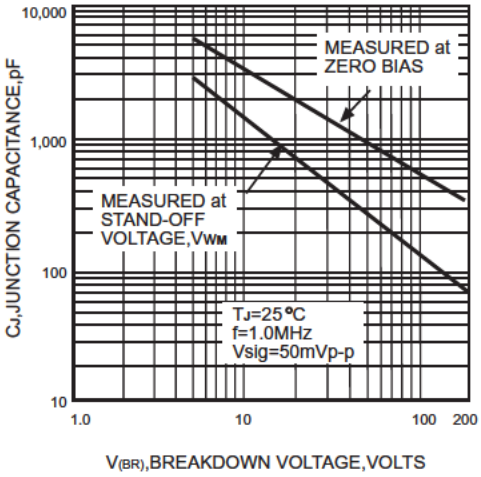


FIG.5-STEADY STATE POWER DERATING CURVE

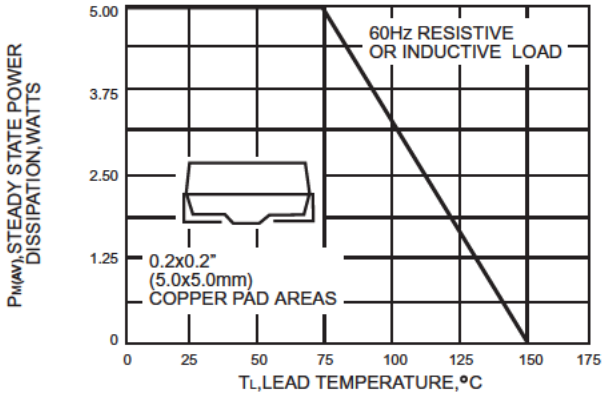
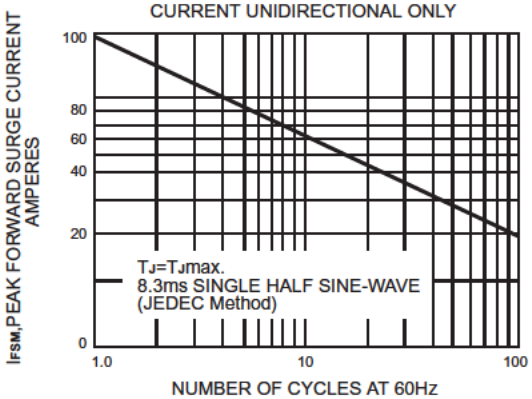


FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE
CURRENT UNIDIRECTIONAL ONLY



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