

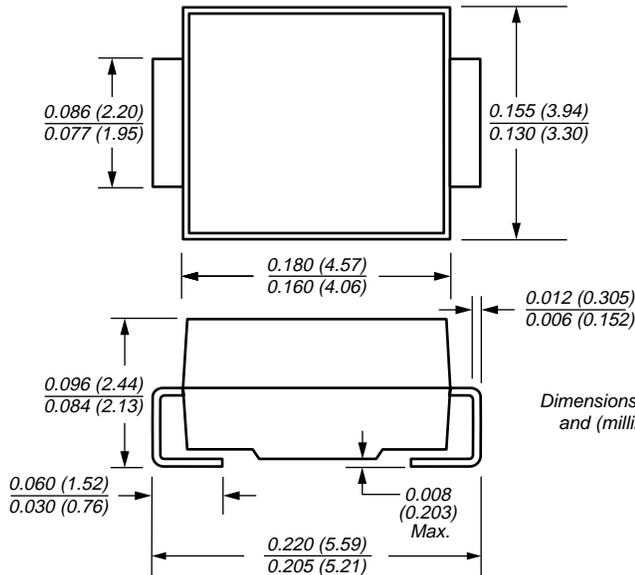


Surface Mount TRANSZORB® Transient Voltage Suppressor

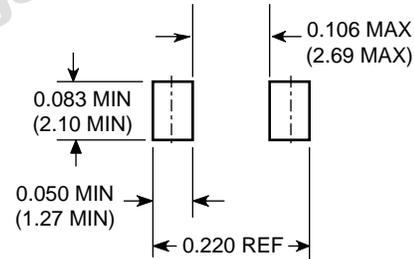
Stand-off Voltage 5.0 to 188V

Peak Pulse Power 600W

DO-214AA (SMB J-Bend)



Extended
Voltage Range



Mounting Pad Layout

Mechanical Data

Case: JEDEC DO-214AA molded plastic over passivated junction

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: For unidirectional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Weight: 0.003 ounces, 0.093 grams

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications in order to optimize board space • Low profile package
- Built-in strain relief
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 600W peak pulse power capability with a 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- Very fast response time
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Contact local sales office for gull-wing lead form (DO-215AA)

Maximum Ratings & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μ s waveform (Notes 1, 2, Fig. 1)	PPPM	Minimum 600	W
Peak pulse current with a 10/1000 μ s waveform (Note 1)	I _{PPM}	See Table Below	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Notes 2, 3) – uni-directional only	I _{FSM}	100	A
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig. 2
 (2) Mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pads to each terminal

For bidirectional types use suffix CA (e.g. SMBJ10CA).
 Electrical characteristics apply in both directions.

Surface Mount TRANSZORB® Transient Voltage Suppressor

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 3.5V$ at $I_F = 50A$ (uni-directional only)

Device Type Modified "J" Bend Lead	Device Marking Code		Breakdown Voltage V_{BR} (Volts) (Min) (Note 1)	Test Current at I_T (mA)	Stand-off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} (Note 3) I_R (μA)	Maximum Peak Pulse Surge Current I_{PPM} (Note 2) (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)
	UNI	BI						
SMBJ5.0A	KE	KE	6.40	10	5.0	800	65.2	9.2
SMBJ6.0A	KG	KG	6.67	10	6.0	800	58.3	10.3
SMBJ6.5A	KK	AK	7.22	10	6.5	500	53.6	11.2
SMBJ7.0A	KM	KM	7.78	10	7.0	200	50.0	12.0
SMBJ7.5A	KP	AP	8.33	1.0	7.5	100	46.5	12.9
SMBJ8.0A	KR	AR	8.89	1.0	8.0	50	44.1	13.6
SMBJ8.5A	KT	AT	9.44	1.0	8.5	20	41.7	14.4
SMBJ9.0A	KV	AV	10.0	1.0	9.0	10	39.0	15.4
SMBJ10A	KX	AX	11.1	1.0	10	5.0	35.3	17.0
SMBJ11A	KZ	KZ	12.2	1.0	11	5.0	33.0	18.2
SMBJ12A	LE	BE	13.3	1.0	12	5.0	30.2	19.9
SMBJ13A	LG	LG	14.4	1.0	13	1.0	27.9	21.5
SMBJ14A	LK	BK	15.6	1.0	14	1.0	25.9	23.2
SMBJ15A	LM	BM	16.7	1.0	15	1.0	24.6	24.4
SMBJ16A	LP	LM	17.8	1.0	16	1.0	23.1	26.0
SMBJ17A	LR	LR	18.9	1.0	17	1.0	21.7	27.6
SMBJ18A	LT	BT	20.0	1.0	18	1.0	20.5	29.2
SMBJ20A	LV	LV	22.2	1.0	20	1.0	18.5	32.4
SMBJ22A	LX	BX	24.4	1.0	22	1.0	16.9	35.5
SMBJ24A	LZ	BZ	26.7	1.0	24	1.0	15.4	38.9
SMBJ26A	ME	CE	28.9	1.0	26	1.0	14.3	42.1
SMBJ28A	MG	MG	31.1	1.0	28	1.0	13.2	45.4
SMBJ30A	MK	CK	33.3	1.0	30	1.0	12.4	48.4
SMBJ33A	MM	CM	36.7	1.0	33	1.0	11.3	53.3
SMBJ36A	MP	CP	40.0	1.0	36	1.0	10.3	58.1
SMBJ40A	MR	CR	44.4	1.0	40	1.0	9.3	64.5
SMBJ43A	MT	CT	47.8	1.0	43	1.0	8.6	69.4
SMBJ45A	MV	MV	50.0	1.0	45	1.0	8.3	72.7
SMBJ48A	MX	MX	53.3	1.0	48	1.0	7.8	77.4
SMBJ51A	MZ	MZ	56.7	1.0	51	1.0	7.3	82.4
SMBJ54A	NE	NE	60.0	1.0	54	1.0	6.9	87.1
SMBJ58A	NG	NG	64.4	1.0	58	1.0	6.4	93.6
SMBJ60A	NK	NK	66.7	1.0	60	1.0	6.2	96.8
SMBJ64A	NM	NM	71.1	1.0	64	1.0	5.8	103
SMBJ70A	NP	NP	77.8	1.0	70	1.0	5.3	113
SMBJ75A	NR	NR	83.3	1.0	75	1.0	5.0	121
SMBJ78A	NT	NT	86.7	1.0	78	1.0	4.8	126
SMBJ85A	NV	NV	94.4	1.0	85	1.0	4.4	137
SMBJ90A	NX	NX	100	1.0	90	1.0	4.1	146
SMBJ100A	NZ	NZ	111	1.0	100	1.0	3.7	162
SMBJ110A	PE	PE	122	1.0	110	1.0	3.4	177
SMBJ120A	PG	PG	133	1.0	120	1.0	3.1	193
SMBJ130A	PK	PK	144	1.0	130	1.0	2.9	209
SMBJ150A	PM	PM	167	1.0	150	1.0	2.5	243
SMBJ160A	PP	PP	178	1.0	160	1.0	2.3	259
SMBJ170A	PR	PR	189	1.0	170	1.0	2.2	275
SMBJ188A	PS	PS	209	1.0	188	1.0	2.0	328

- Notes:** (1) V_{BR} measured after I_T applied for 300 μs 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_D limit is doubled
(4) All terms and symbols are consistent with ANSI/IEEE C62.35

Surface Mount TRANSZORB[®] Transient Voltage Suppressor

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Peak Pulse Power Rating Curve

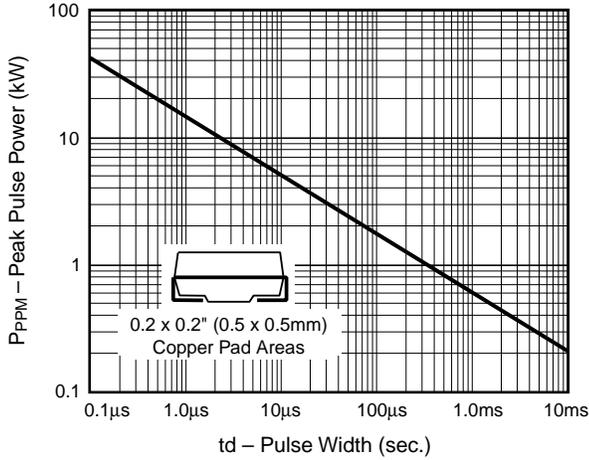


Fig. 2 – Pulse Derating Curve

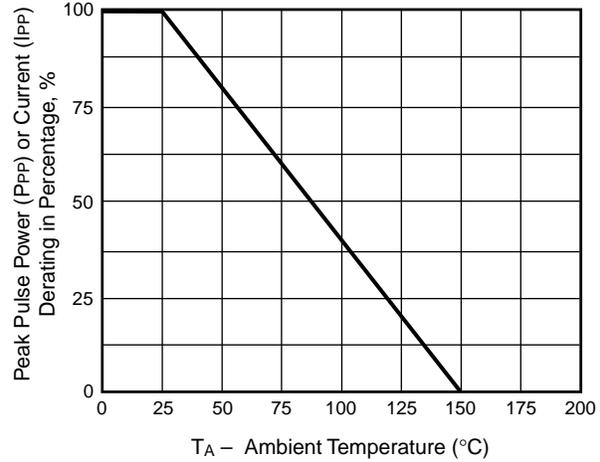


Fig. 3 – Pulse Waveform

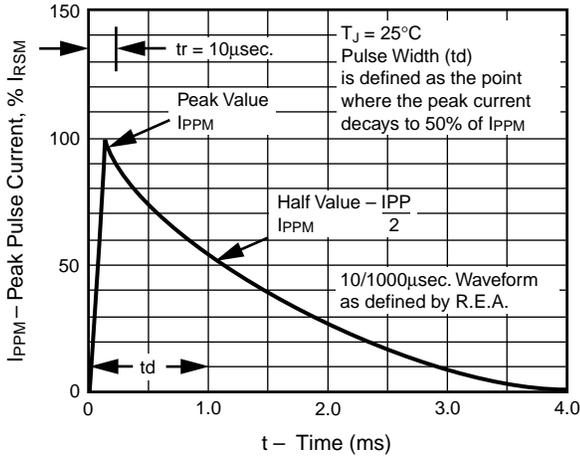


Fig. 4 – Typical Junction Capacitance Uni-Directional

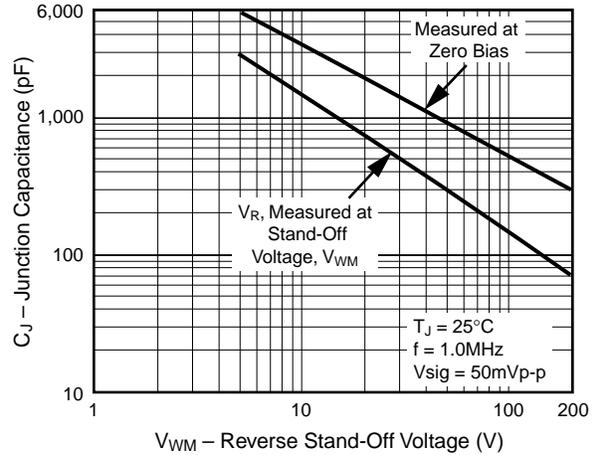


Fig. 5 – Typical Junction Capacitance Bi-Directional

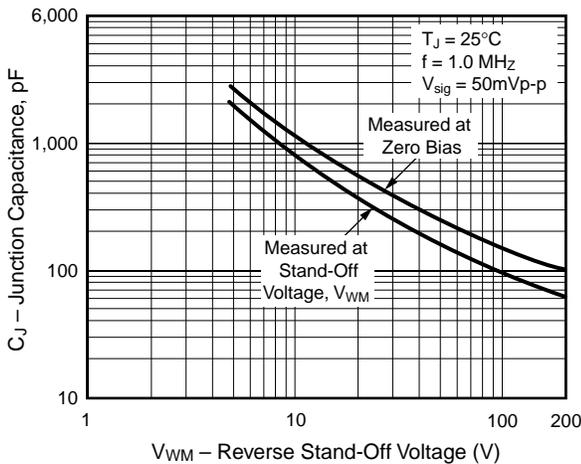


Fig. 6 – Maximum Non-Repetitive Peak Forward Surge Current

