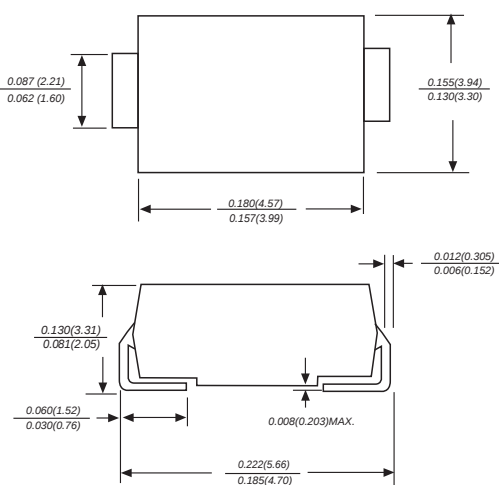


V. TVS & Overvoltage Protection Device

SMB10(8)J5.0(C)A thru SMB10(8)J40(C)A

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

DO-214AA



Dimensions in inches and (millimeters)

Features

- 1000W Peak Pulse Power Dissipation
- 5.0V - 40V 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

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μs waveform ⁽¹⁾⁽²⁾ (fig. 1)	P_{PPM}	1000	W
		800	
Peak pulse current with a 10/1000 μs waveform ⁽¹⁾	I_{PPM}	See next table	A
Peak forward surge current 8.3 ms single half sine-wave uni-directional only	I_{FSM}	100	A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to 150	$^\circ\text{C}$
Typical thermal resistance, junction to lead ⁽²⁾	$R_{\theta JL}$	20	$^\circ\text{C}/\text{W}$

Notes

- ⁽¹⁾ Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25^\circ\text{C}$ per fig. 2
- ⁽²⁾ Mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal

UNI-DIRECTIONAL

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T ⁽¹⁾ (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
SMB10J5.0A	1AE	6.40	7.07	10	5.0	1000	108.7	9.2
SMB10J6.0A	1AG	6.67	7.37	10	6.0	1000	97.1	10.3
SMB10J6.5A	1AK	7.22	7.98	10	6.5	500	89.3	11.2
SMB10J7.0A	1AM	7.78	8.60	10	7.0	200	83.3	12.0
SMB10J7.5A	1AP	8.33	9.21	1.0	7.5	100	77.5	12.9
SMB10J8.0A	1AR	8.89	9.83	1.0	8.0	50	73.5	13.6
SMB10J8.5A	1AT	9.44	10.4	1.0	8.5	20	69.4	14.4
SMB10J9.0A	1AV	10.0	11.1	1.0	9.0	10	64.9	15.4
SMB10J10A	1AX	11.1	12.3	1.0	10	5.0	58.8	17.0
SMB10J11A	1AZ	12.2	13.5	1.0	11	5.0	54.9	18.2
SMB10J12A	1BE	13.3	14.7	1.0	12	5.0	50.3	19.9
SMB10J13A	1BG	14.4	15.9	1.0	13	1.0	46.5	21.5
SMB10J14A	1BK	15.6	17.2	1.0	14	1.0	43.1	23.2
SMB10J15A	1BM	16.7	18.5	1.0	15	1.0	41.0	24.4
SMB10J16A	1BP	17.8	19.7	1.0	16	1.0	38.5	26.0
SMB10J17A	1BR	18.9	20.9	1.0	17	1.0	36.2	27.6
SMB10J18A	1BT	20.0	22.1	1.0	18	1.0	34.2	29.2
SMB10J20A	1BV	22.2	24.5	1.0	20	1.0	30.9	32.4
SMB10J22A	1BX	24.4	26.9	1.0	22	1.0	28.2	35.5
SMB10J24A	1BZ	26.7	29.5	1.0	24	1.0	25.7	38.9
SMB10J26A	1CE	28.9	31.9	1.0	26	1.0	23.8	42.1
SMB10J28A	1CG	31.1	34.4	1.0	28	1.0	22.0	45.4
SMB10J30A	1CK	33.3	36.8	1.0	30	1.0	20.7	48.4
SMB10J33A	1CM	36.7	40.6	1.0	33	1.0	18.8	53.3
SMB10J36A	1CP	40.0	44.2	1.0	36	1.0	17.2	58.1
SMB10J40A	1CR	44.4	49.1	1.0	40	1.0	15.5	64.5

Notes

⁽¹⁾ Pulse test: $t_p \leq 50\text{ ms}$

**BI-DIRECTIONAL
ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T ⁽¹⁾ (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
SMB8J5.0CA	1AE	6.40	7.25	10	5.0	2000	87.0	9.2
SMB8J6.0CA	1AG	6.67	7.37	10	6.0	2000	77.7	10.3
SMB8J6.5CA	1AK	7.22	7.98	10	6.5	1000	71.4	11.2
SMB8J7.0CA	1AM	7.78	8.60	10	7.0	400	66.7	12.0
SMB8J7.5CA	1AP	8.33	9.21	1.0	7.5	200	62.0	12.9
SMB8J8.0CA	1AR	8.89	9.83	1.0	8.0	100	58.8	13.6
SMB8J8.5CA	1AT	9.44	10.4	1.0	8.5	40	55.6	14.4
SMB8J9.0CA	1AV	10.0	11.1	1.0	9.0	20	51.9	15.4
SMB8J10CA	1AX	11.1	12.3	1.0	10	10	47.1	17.0
SMB8J11CA	1AZ	12.2	13.5	1.0	11	5.0	44.0	18.2
SMB8J12CA	1BE	13.3	14.7	1.0	12	5.0	40.2	19.9
SMB8J13CA	1BG	14.4	15.9	1.0	13	1.0	37.2	21.5
SMB8J14CA	1BK	15.6	17.2	1.0	14	1.0	34.5	23.2
SMB8J15CA	1BM	16.7	18.5	1.0	15	1.0	32.8	24.4
SMB8J16CA	1BP	17.8	19.7	1.0	16	1.0	30.8	26.0
SMB8J17CA	1BR	18.9	20.9	1.0	17	1.0	29.0	27.6
SMB8J18CA	1BT	20.0	22.1	1.0	18	1.0	27.4	29.2
SMB8J20CA	1BV	22.2	24.5	1.0	20	1.0	24.7	32.4
SMB8J22CA	1BX	24.4	26.9	1.0	22	1.0	22.5	35.5
SMB8J24CA	1BZ	26.7	29.5	1.0	24	1.0	20.6	38.9
SMB8J26CA	1CE	28.9	31.9	1.0	26	1.0	19.0	42.1
SMB8J28CA	1CG	31.1	34.4	1.0	28	1.0	17.6	45.4
SMB8J30CA	1CK	33.3	36.8	1.0	30	1.0	16.5	48.4
SMB8J33CA	1CM	36.7	40.6	1.0	33	1.0	15.0	53.3
SMB8J36CA	1CP	40.0	44.2	1.0	36	1.0	13.8	58.1
SMB8J40CA	1CR	44.4	49.1	1.0	40	1.0	12.4	64.5

Notes

⁽¹⁾ Pulse test: $t_p \leq 50\text{ ms}$

RATINGS AND CHARACTERISTIC CURVES

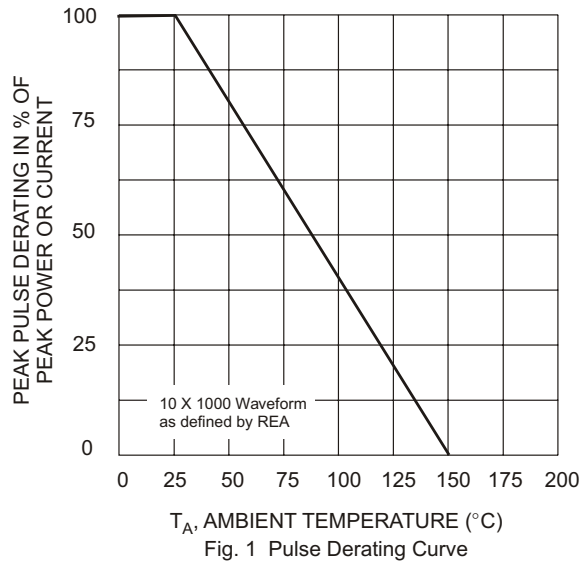


Fig. 1 Pulse Derating Curve

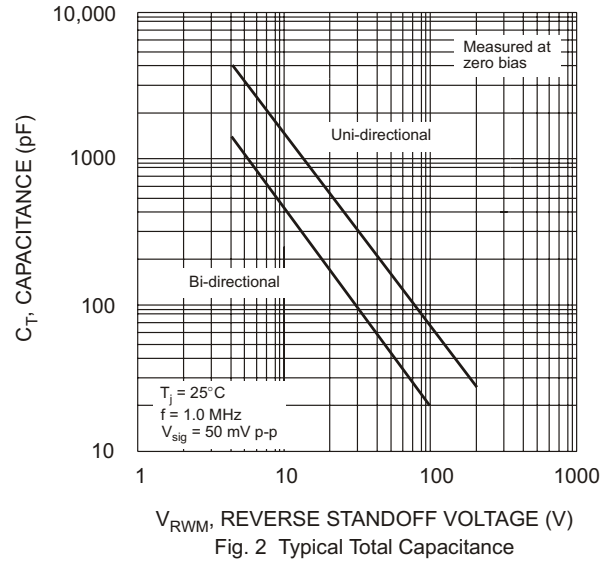


Fig. 2 Typical Total Capacitance

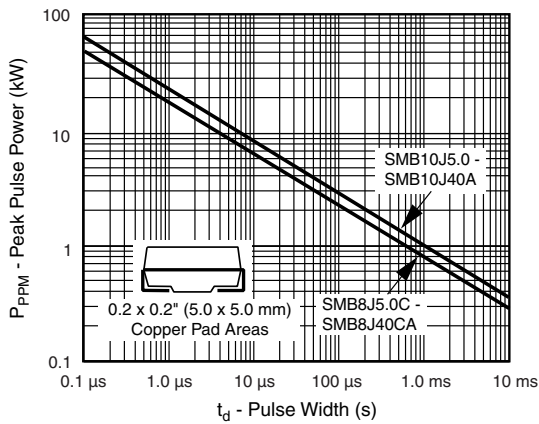


Fig. 3 Peak Pulse Power Rating Curve

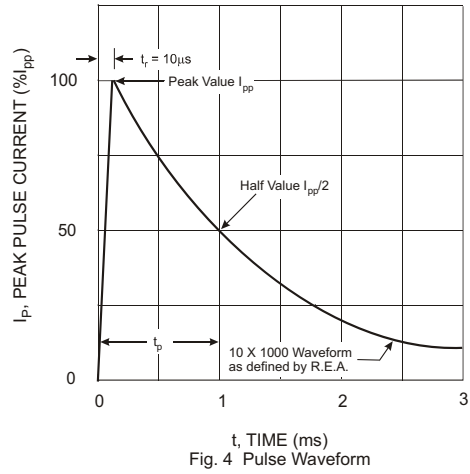


Fig. 4 Pulse Waveform

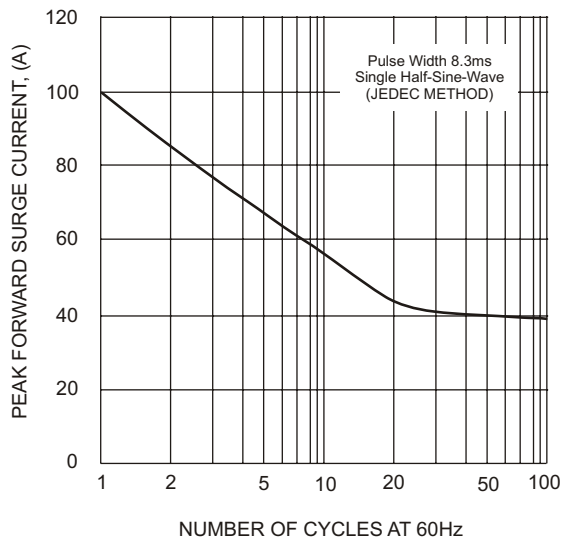


Fig. 5, Maximum Non-Repetitive Surge Current