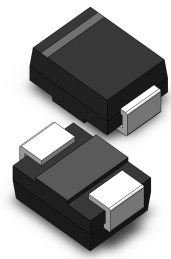
SMB10J5.0A(CA)- SMB10J40A(CA)

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODE

VOLTAGE RANGE: 5.0 - 40V
POWER: 1000 Watts

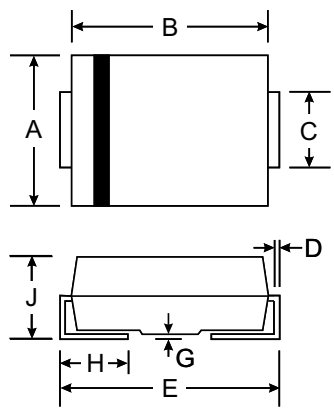


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance

Mechanical Data

- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)



SMB(DO-214AA)		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.70
C	1.91	2.21
D	0.15	0.31
E	5.00	5.59
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

RoHS COMPLIANT

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 µs waveform (1)(2) (Fig. 1) uni-directional / bi-directional	P_{PPM}	1000	W
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 (2)	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 5.0 mm) copper pads to each terminal

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

TYPE	Breakdown Voltage Min. @I_T	Breakdown Voltage Max. @ I_T	Test Current	Reverse Stand-Off Voltage	Maximum Reverse Leakage AT V_{WM}	Peak Pulse Current	Clamping Voltage @I_{PP}
	$V_{BR\ MIN}$(V)	$V_{BR\ MAX}$(V)	I_T (mA)	V_{RWM}(V)	I_D (μA)	I_{PP}(A)	V_C(V)
SMB10J5.0CA	6.40	7.82	10	5.0	1000	104.2	9.6
SMB10J5.0A	6.40	7.07	10	5.0	1000	108.7	9.2
SMB10J6.0CA	6.67	8.15	10	6.0	1000	87.7	11.4
SMB10J6.0A	6.67	7.37	10	6.0	1000	97.1	10.3
SMB10J6.5CA	7.22	8.82	10	6.5	500	81.3	12.3
SMB10J6.5A	7.22	7.98	10	6.5	500	89.3	11.2
SMB10J7.0CA	7.78	9.51	10	7.0	200	75.2	13.3
SMB10J7.0A	7.78	8.60	10	7.0	200	83.3	12.0
SMB10J7.5CA	8.33	10.2	1.0	7.5	100	69.9	14.3
SMB10J7.5A	8.33	9.21	1.0	7.5	100	77.5	12.9
SMB10J8.0CA	8.89	10.9	1.0	8.0	50	66.7	15.0
SMB10J8.0A	8.89	9.83	1.0	8.0	50	73.5	13.6
SMB10J8.5CA	9.44	11.5	1.0	8.5	20	62.9	15.9
SMB10J8.5A	9.44	10.4	1.0	8.5	20	69.4	14.4
SMB10J9.0CA	10.0	12.2	1.0	9.0	10	59.2	16.9
SMB10J9.0A	10.0	11.1	1.0	9.0	10	64.9	15.4
SMB10J10CA	11.1	13.6	1.0	10	5.0	53.2	18.8
SMB10J10A	11.1	12.3	1.0	10	5.0	58.8	17.0
SMB10J11CA	12.2	14.9	1.0	11	5.0	49.8	20.1
SMB10J11A	12.2	13.5	1.0	11	5.0	54.9	18.2
SMB10J12CA	13.3	16.3	1.0	12	5.0	45.5	22.0
SMB10J12A	13.3	14.7	1.0	12	5.0	50.3	19.9
SMB10J13CA	14.4	17.6	1.0	13	1.0	42.0	23.8
SMB10J13A	14.4	15.9	1.0	13	1.0	46.5	21.5
SMB10J14CA	15.6	19.1	1.0	14	1.0	38.8	25.8
SMB10J14A	15.6	17.2	1.0	14	1.0	43.1	23.2
SMB10J15CA	16.7	20.4	1.0	15	1.0	37.2	26.9
SMB10J15A	16.7	18.5	1.0	15	1.0	41.0	24.4
SMB10J16CA	17.8	21.8	1.0	16	1.0	34.7	28.8
SMB10J16A	17.8	19.7	1.0	16	1.0	38.5	26.0
SMB10J17CA	18.9	23.1	1.0	17	1.0	32.8	30.5
SMB10J17A	18.9	20.9	1.0	17	1.0	36.2	27.6
SMB10J18CA	20.0	24.4	1.0	18	1.0	31.1	32.2
SMB10J18A	20.0	22.1	1.0	18	1.0	34.2	29.2
SMB10J20CA	22.2	27.1	1.0	20	1.0	27.9	35.8
SMB10J20A	22.2	24.5	1.0	20	1.0	30.9	32.4
SMB10J22CA	24.4	29.8	1.0	22	1.0	25.4	39.4
SMB10J22A	24.4	26.9	1.0	22	1.0	28.2	35.5
SMB10J24CA	26.7	32.6	1.0	24	1.0	23.3	43.0
SMB10J24A	26.7	29.5	1.0	24	1.0	25.7	38.9
SMB10J26CA	28.9	35.3	1.0	26	1.0	21.5	46.6
SMB10J26A	28.9	31.9	1.0	26	1.0	23.8	42.1
SMB10J28CA	31.1	38.0	1.0	28	1.0	20.0	50.0
SMB10J28A	31.1	34.4	1.0	28	1.0	22.0	45.4
SMB10J30CA	33.3	40.7	1.0	30	1.0	18.7	53.5
SMB10J30A	33.3	36.8	1.0	30	1.0	20.7	48.4
SMB10J33CA	36.7	44.9	1.0	33	1.0	16.9	59.0
SMB10J33A	36.7	40.6	1.0	33	1.0	18.8	53.3
SMB10J36CA	40.0	48.9	1.0	36	1.0	15.6	64.3
SMB10J36A	40.0	44.2	1.0	36	1.0	17.2	58.1
SMB10J40CA	44.4	54.3	1.0	40	1.0	14.0	71.4
SMB10J40A	44.4	49.1	1.0	40	1.0	15.5	64.5

Notes:

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

(2) Surge current waveform per Fig. 3 and derate per Fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE C62.35

(4) V_F = 3.5 V at I_F = 50 A (uni-directional only)

RATINGS AND CHARACTERISTICS CURVES(T_A = 25 °C unless otherwise noted)

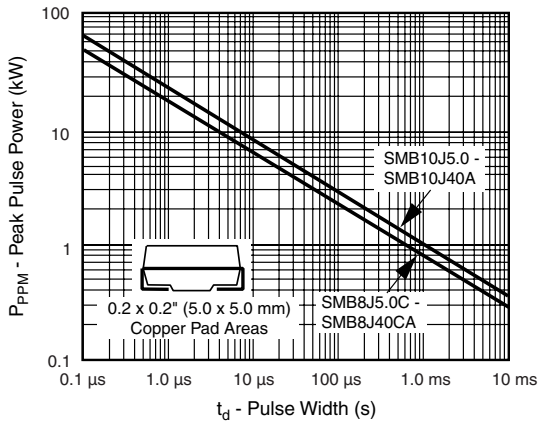


Figure 1. Peak Pulse Power Rating Curve

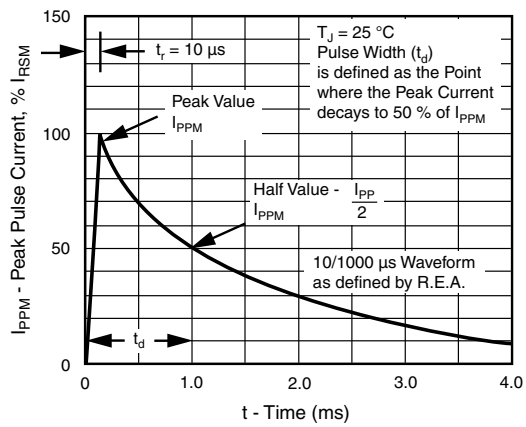


Figure 3. Pulse Waveform

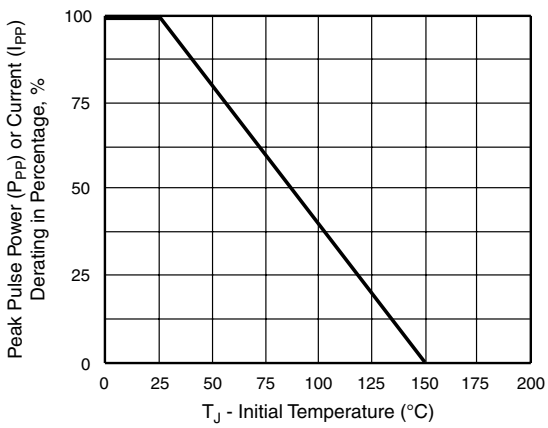


Figure 2. Pulse Power or Current vs. Initial Junction Temperature

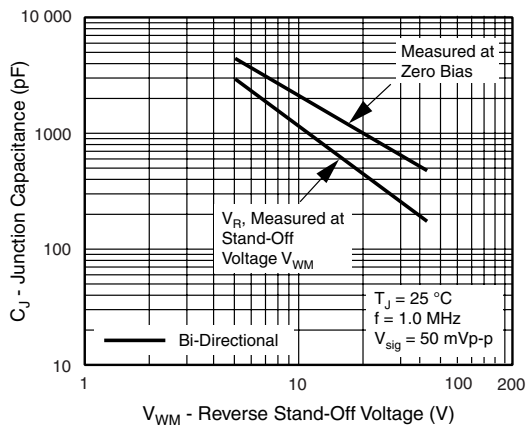


Figure 4. Typical Junction Capacitance

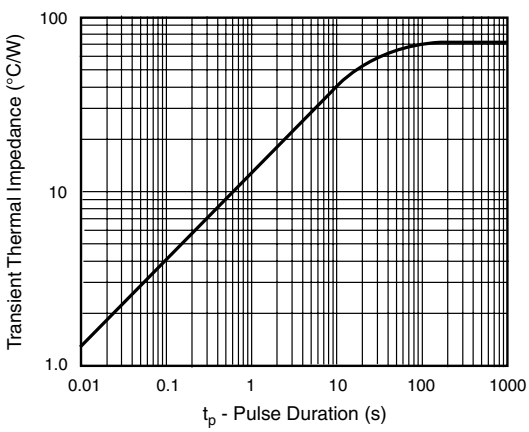


Figure 5. Typical Transient Thermal Impedance

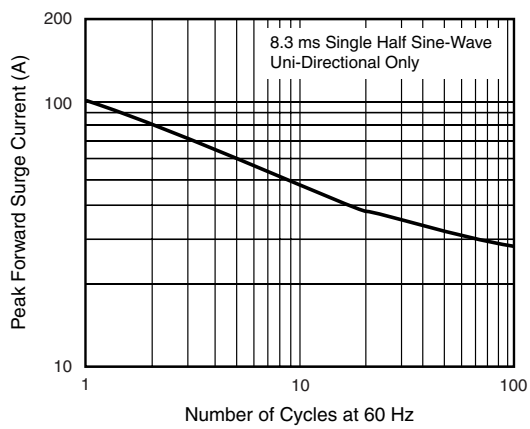


Figure 6. Maximum Non-Repetitive Forward Surge Current