

**VOLTAGE RANGE: 5.0 - 440 V**

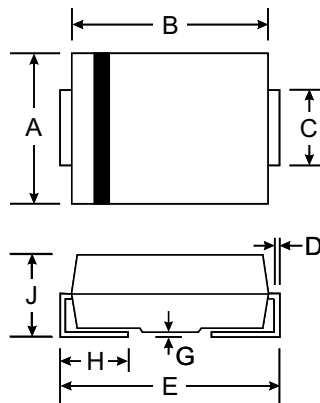
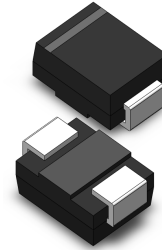
**POWER: 600Watts**

### Features

- 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/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

### Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = 25^{\circ}\text{C}$ ) (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
Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ (Notes 1, 2, & 3)	$V_F$	$V_{BR} < 100\text{V}$ 3.5 $V_{BR} \geq 100\text{V}$ 5.0	V V
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^{\circ}\text{C}$

- 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.

TYPE		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(Uni)	(Bi)	(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR MIN</sub> (V)	V <sub>BR MAX</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (μA)
1SMB5.0	1SMB5.0C	1KD	1AD	5.0	6.40	7.55	10	9.6	62.5	800.0
1SMB5.0A	1SMB5.0CA	1KE	1AE	5.0	6.40	7.25	10	9.2	65.2	800.0
1SMB6.0	1SMB6.0C	1KF	1AF	6.0	6.67	8.45	10	11.4	52.6	800.0
1SMB6.0A	1SMB6.0CA	1KG	1AG	6.0	6.67	7.67	10	10.3	58.3	800.0
1SMB6.5	1SMB6.5C	1KH	1AH	6.5	7.22	9.14	10	12.3	48.8	500.0
1SMB6.5A	1SMB6.5CA	1KK	1AK	6.5	7.22	8.30	10	11.2	53.6	500.0
1SMB7.0	1SMB7.0C	1KL	1AL	7.0	7.78	9.86	10	13.3	45.1	200.0
1SMB7.0A	1SMB7.0CA	1KM	1AM	7.0	7.78	8.95	10	12.0	50.0	200.0
1SMB7.5	1SMB7.5C	1KN	1AN	7.5	8.33	10.67	1.0	14.3	42.0	100.0
1SMB7.5A	1SMB7.5CA	1KP	1AP	7.5	8.33	9.58	1.0	12.9	46.5	100.0
1SMB8.0	1SMB8.0C	1KQ	1AQ	8.0	8.89	11.3	1.0	15.0	40.0	50.0
1SMB8.0A	1SMB8.0CA	1KR	1AR	8.0	8.89	10.23	1.0	13.6	44.1	50.0
1SMB8.5	1SMB8.5C	1KS	1AS	8.5	9.44	11.92	1.0	15.9	37.7	20.0
1SMB8.5A	1SMB8.5CA	1KT	1AT	8.5	9.44	10.82	1.0	14.4	41.7	20.0
1SMB9.0	1SMB9.0C	1KU	1AU	9.0	10.0	12.6	1.0	16.9	35.5	10.0
1SMB9.0A	1SMB9.0CA	1KV	1AV	9.0	10.0	11.5	1.0	15.4	39.0	10.0
1SMB10	1SMB10C	1KW	1AW	10	11.1	14.1	1.0	18.8	31.9	5.0
1SMB10A	1SMB10CA	1KX	1AX	10	11.1	12.8	1.0	17.0	35.3	5.0
1SMB11	1SMB11C	1KY	1AY	11	12.2	15.4	1.0	20.1	29.9	5.0
1SMB11A	1SMB11CA	1KZ	1AZ	11	12.2	14.0	1.0	18.2	33.0	5.0
1SMB12	1SMB12C	1LD	1BD	12	13.3	16.9	1.0	22.0	27.3	5.0
1SMB12A	1SMB12CA	1LE	1BE	12	13.3	15.3	1.0	19.9	30.2	5.0
1SMB13	1SMB13C	1LF	1BF	13	14.4	18.2	1.0	23.8	25.2	5.0
1SMB13A	1SMB13CA	1LG	1BG	13	14.4	16.5	1.0	21.5	27.9	5.0
1SMB14	1SMB14C	1LH	1BH	14	15.6	19.8	1.0	25.8	23.3	5.0
1SMB14A	1SMB14CA	1LK	1BK	14	15.6	17.9	1.0	23.2	25.9	5.0
1SMB15	1SMB15C	1LL	1BL	15	16.7	21.1	1.0	26.9	22.3	5.0
1SMB15A	1SMB15CA	1LM	1BM	15	16.7	19.2	1.0	24.4	24.6	5.0
1SMB16	1SMB16C	1LN	1BN	16	17.8	22.6	1.0	28.8	20.8	5.0
1SMB16A	1SMB16CA	1LP	1BP	16	17.8	20.5	1.0	26.0	23.1	5.0
1SMB17	1SMB17C	1LQ	1BQ	17	18.9	23.9	1.0	30.5	19.7	5.0
1SMB17A	1SMB17CA	1LR	1BR	17	18.9	21.7	1.0	27.6	21.7	5.0
1SMB18	1SMB18C	1LS	1BS	18	20.0	25.3	1.0	32.2	18.6	5.0
1SMB18A	1SMB18CA	1LT	1BT	18	20.0	23.3	1.0	29.2	20.5	5.0
1SMB20	1SMB20C	1LU	1BU	20	22.2	28.1	1.0	35.8	16.8	5.0
1SMB20A	1SMB20CA	1LV	1BV	20	22.2	25.5	1.0	32.4	18.5	5.0
1SMB22	1SMB22C	1LW	1BW	22	24.4	30.9	1.0	39.4	15.2	5.0
1SMB22A	1SMB22CA	1LX	1BX	22	24.4	28.0	1.0	35.5	16.9	5.0

**Note:**

- ( 1 ) V<sub>BR</sub> measured after I<sub>T</sub> applied for 300 μs., I<sub>T</sub> = square wave pulse or equivalent.
- ( 2 ) Surge Current Waveform per Figure 5 and Derate per Figure 1
- ( 3 ) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " (V<sub>RWM</sub>) which should be equal to or greater then the D.C. or continuous peak operating voltage level.



TYPE		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(Uni)	(Bi)	(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR MIN</sub> (V)	V <sub>BR MAX</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
1SMB24	1SMB24C	1LY	1BY	24	26.7	33.8	1.0	43.0	14.0	5.0
1SMB24A	1SMB24CA	1LZ	1BZ	24	26.7	30.7	1.0	38.9	15.4	5.0
1SMB26	1SMB26C	1MD	1CD	26	28.9	36.6	1.0	46.6	12.9	5.0
1SMB26A	1SMB26CA	1ME	1CE	26	28.9	33.2	1.0	42.1	14.3	5.0
1SMB28	1SMB28C	1MF	1CF	28	31.1	39.4	1.0	50.0	12.0	5.0
1SMB28A	1SMB28CA	1MG	1CG	28	31.1	35.8	1.0	45.4	13.2	5.0
1SMB30	1SMB30C	1MH	1CH	30	33.3	42.2	1.0	53.5	11.2	5.0
1SMB30A	1SMB30CA	1MK	1CK	30	33.3	38.3	1.0	48.4	12.4	5.0
1SMB33	1SMB33C	1ML	1CL	33	36.7	46.5	1.0	59.0	10.2	5.0
1SMB33A	1SMB33CA	1MM	1CM	33	36.7	42.2	1.0	53.3	11.3	5.0
1SMB36	1SMB36C	1MN	1CN	36	40.0	50.7	1.0	64.3	9.3	5.0
1SMB36A	1SMB36CA	1MP	1CP	36	40.0	46.0	1.0	58.1	10.3	5.0
1SMB40	1SMB40C	1MQ	1CQ	40	44.4	56.3	1.0	71.4	8.4	5.0
1SMB40A	1SMB40CA	1MR	1CR	40	44.4	51.1	1.0	64.5	9.3	5.0
1SMB43	1SMB43C	1MS	1CS	43	47.8	60.5	1.0	76.7	7.8	5.0
1SMB43A	1SMB43CA	1MT	1CT	43	47.8	54.9	1.0	69.4	8.6	5.0
1SMB45	1SMB45C	1MU	1CU	45	50.0	63.3	1.0	80.3	7.5	5.0
1SMB45A	1SMB45CA	1MV	1CV	45	50.0	57.5	1.0	72.7	8.3	5.0
1SMB48	1SMB48C	1MW	1CW	48	53.3	67.5	1.0	85.5	7.0	5.0
1SMB48A	1SMB48CA	1MX	1CX	48	53.3	61.3	1.0	77.4	7.8	5.0
1SMB51	1SMB51C	1MY	1CY	51	56.7	71.8	1.0	91.1	6.6	5.0
1SMB51A	1SMB51CA	1MZ	1CZ	51	56.7	65.2	1.0	82.4	7.3	5.0
1SMB54	1SMB54C	1ND	1DD	54	60.0	76.0	1.0	96.3	6.2	5.0
1SMB54A	1SMB54CA	1NE	1DE	54	60.0	69.0	1.0	87.1	6.9	5.0
1SMB58	1SMB58C	1NF	1DF	58	64.4	81.6	1.0	103	5.8	5.0
1SMB58A	1SMB58CA	1NG	1DG	58	64.4	74.1	1.0	93.6	6.4	5.0
1SMB60	1SMB60C	1NH	1DH	60	66.7	84.5	1.0	107	5.6	5.0
1SMB60A	1SMB60CA	1NK	1DK	60	66.7	76.7	1.0	96.8	6.2	5.0
1SMB64	1SMB64C	1NL	1DL	64	71.1	90.1	1.0	114	5.3	5.0
1SMB64A	1SMB64CA	1NM	1DM	64	71.1	81.8	1.0	103	5.8	5.0
1SMB70	1SMB70C	1NN	1DN	70	77.8	98.6	1.0	125	4.8	5.0
1SMB70A	1SMB70CA	1NP	1DP	70	77.8	89.5	1.0	113	5.3	5.0
1SMB75	1SMB75C	1NQ	1DQ	75	83.0	105.7	1.0	134	4.5	5.0
1SMB75A	1SMB75CA	1NR	1DR	75	83.0	95.8	1.0	121	5.0	5.0
1SMB78	1SMB78C	1NS	1DS	78	86.0	109.8	1.0	139	4.3	5.0
1SMB78A	1SMB78CA	1NT	1DT	78	86.0	99.7	1.0	126	4.8	5.0
1SMB85	1SMB85C	1NU	1DU	85	94.0	119.2	1.0	151	4.0	5.0
1SMB85A	1SMB85CA	1NV	1DV	85	94.0	108.2	1.0	137	4.4	5.0
1SMB90	1SMB90C	1NW	1DW	90	100	126.5	1.0	160	3.8	5.0

TYPE		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(Uni)	(Bi)	(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR MIN</sub> (V)	V <sub>BR MAX</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
1SMB90A	1SMB90CA	1NX	1DX	90	100	115.5	1.0	146	4.1	5.0
1SMB100	1SMB100C	1NY	1DY	100	111	141.0	1.0	179	3.4	5.0
1SMB100A	1SMB100CA	1NZ	1DZ	100	111	128.0	1.0	162	3.7	5.0
1SMB110	1SMB110C	1PD	1ED	110	122	154.5	1.0	196	3.1	5.0
1SMB110A	1SMB110CA	1PE	1EE	100	122	140.5	1.0	177	3.4	5.0
1SMB120	1SMB120C	1PF	1EF	120	133	169.0	1.0	214	2.8	5.0
1SMB120A	1SMB120CA	1PG	1EG	120	133	153.0	1.0	193	3.1	5.0
1SMB130	1SMB130C	1PH	1EH	130	144	182.5	1.0	231	2.6	5.0
1SMB130A	1SMB130CA	1PK	1EK	130	144	165.5	1.0	209	2.9	5.0
1SMB150	1SMB150C	1PL	1EL	150	167	211.5	1.0	268	2.2	5.0
1SMB150A	1SMB150CA	1PM	1EM	150	167	192.5	1.0	243	2.5	5.0
1SMB160	1SMB160C	1PN	1EN	160	178	226.0	1.0	287	2.1	5.0
1SMB160A	1SMB160CA	1PP	1EP	160	178	205.0	1.0	259	2.3	5.0
1SMB170	1SMB170C	1PQ	1EQ	170	189	239.5	1.0	304	2.0	5.0
1SMB170A	1SMB170CA	1PR	1ER	170	189	217.5	1.0	275	2.2	5.0
1SMB180	1SMB180C	1PS	1ES	180	200	253.8	1.0	321	1.9	5.0
1SMB180A	1SMB180CA	1PT	1ET	180	200	230.4	1.0	290	2.1	5.0
1SMB190	1SMB190C	1PU	1EU	190	211	267.9	1.0	339	1.8	5.0
1SMB190A	1SMB190CA	1PV	1EV	190	211	243.2	1.0	306	2.0	5.0
1SMB200	1SMB200C	1PW	1EW	200	222	282.0	1.0	356	1.7	5.0
1SMB200A	1SMB200CA	1PX	1EX	200	222	256.0	1.0	322	1.9	5.0
1SMB210	1SMB210C	1PY	1EY	210	233	296.1	1.0	375	1.6	5.0
1SMB210A	1SMB210CA	1PZ	1EZ	210	233	268.8	1.0	339	1.8	5.0
1SMB220	1SMB220C	1QD	1FD	220	244	310.2	1.0	392	1.5	5.0
1SMB220A	1SMB220CA	1QE	1FE	220	244	281.6	1.0	355	1.7	5.0
1SMB250	1SMB250C	1QF	1FF	250	278	342.5	1.0	447	1.3	5.0
1SMB250A	1SMB250CA	1QG	1FG	250	278	309.0	1.0	403	1.5	5.0
1SMB300	1SMB300C	1QH	1FH	300	333	411.0	1.0	535	1.1	5.0
1SMB300A	1SMB300CA	1QK	1FK	300	333	371.0	1.0	484	1.2	5.0
1SMB350	1SMB350C	1QL	1FL	350	389	479.5	1.0	624	1.0	5.0
1SMB350A	1SMB350CA	1QM	1FM	350	389	432.0	1.0	565	1.1	5.0
1SMB400	1SMB400C	1QN	1FN	400	444	548.0	1.0	687	0.9	5.0
1SMB400A	1SMB400CA	1QP	1FP	400	444	494.0	1.0	645	0.9	5.0
1SMB440	1SMB440C	1QQ	1FQ	440	489	602.8	1.0	786	0.8	5.0
1SMB440A	1SMB440CA	1QR	1FR	440	489	543.0	1.0	710	0.8	5.0

## Ratings and Characteristic Curves $T_A = 25^\circ\text{C}$ unless otherwise noted

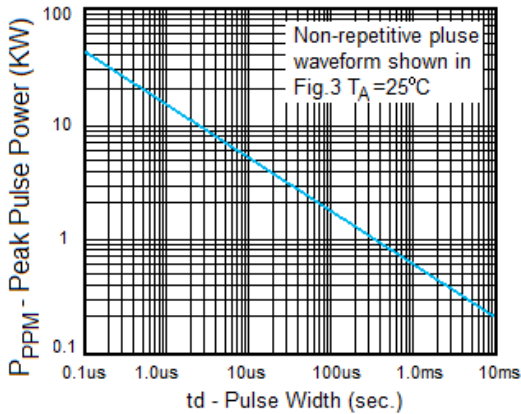


Fig. 1 Peak Pulse Power Rating

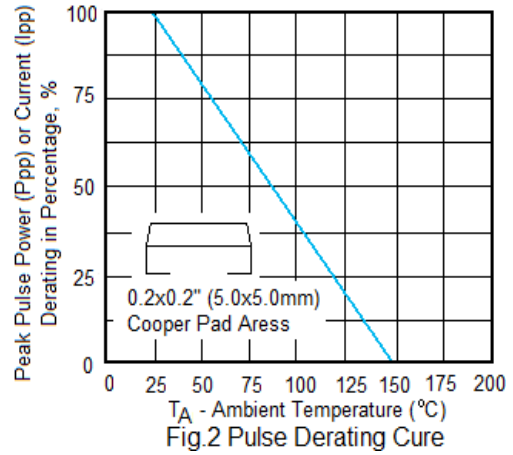


Fig. 2 Pulse Derating Curve

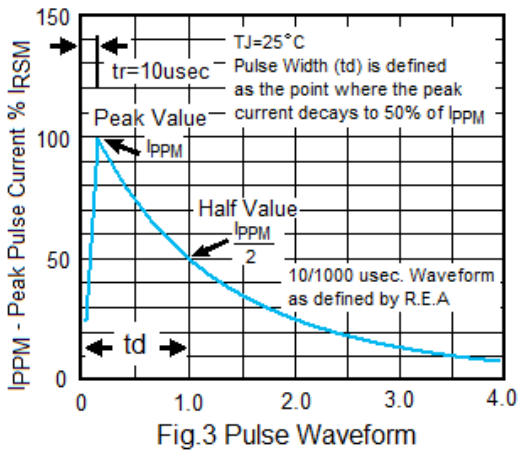


Fig. 3 Pulse Waveform

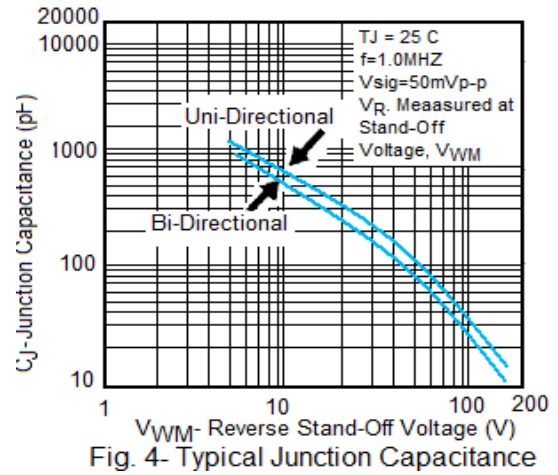


Fig. 4- Typical Junction Capacitance