

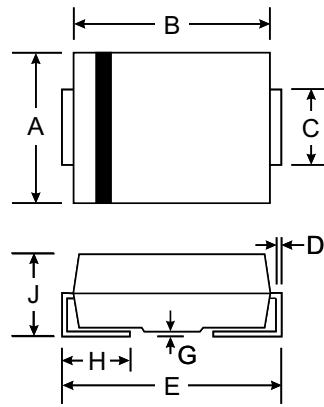
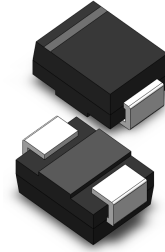
**VOLTAGE RANGE: 5.0 - 440 V**  
**POWER: 600Watts**

### 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 @ $T_A = 25^\circ\text{C}$ 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> (uA)
SMB5.0	SMB5.0C	KD	AD	5.0	6.40	7.55	10	9.6	62.5	800.0
SMB5.0A	SMB5.0CA	KE	AE	5.0	6.40	7.25	10	9.2	65.2	800.0
SMB6.0	SMB6.0C	KF	AF	6.0	6.67	8.45	10	11.4	52.6	800.0
SMB6.0A	SMB6.0CA	KG	AG	6.0	6.67	7.67	10	10.3	58.3	800.0
SMB6.5	SMB6.5C	KH	AH	6.5	7.22	9.14	10	12.3	48.8	500.0
SMB6.5A	SMB6.5CA	KK	AK	6.5	7.22	8.30	10	11.2	53.6	500.0
SMB7.0	SMB7.0C	KL	AL	7.0	7.78	9.86	10	13.3	45.1	200.0
SMB7.0A	SMB7.0CA	KM	AM	7.0	7.78	8.95	10	12.0	50.0	200.0
SMB7.5	SMB7.5C	KN	AN	7.5	8.33	10.67	1.0	14.3	42.0	100.0
SMB7.5A	SMB7.5CA	KP	AP	7.5	8.33	9.58	1.0	12.9	46.5	100.0
SMB8.0	SMB8.0C	KQ	AQ	8.0	8.89	11.3	1.0	15.0	40.0	50.0
SMB8.0A	SMB8.0CA	KR	AR	8.0	8.89	10.23	1.0	13.6	44.1	50.0
SMB8.5	SMB8.5C	KS	AS	8.5	9.44	11.92	1.0	15.9	37.7	20.0
SMB8.5A	SMB8.5CA	KT	AT	8.5	9.44	10.82	1.0	14.4	41.7	20.0
SMB9.0	SMB9.0C	KU	AU	9.0	10.0	12.6	1.0	16.9	35.5	10.0
SMB9.0A	SMB9.0CA	KV	AV	9.0	10.0	11.5	1.0	15.4	39.0	10.0
SMB10	SMB10C	KW	AW	10	11.1	14.1	1.0	18.8	31.9	5.0
SMB10A	SMB10CA	KX	AX	10	11.1	12.8	1.0	17.0	35.3	5.0
SMB11	SMB11C	KY	AY	11	12.2	15.4	1.0	20.1	29.9	5.0
SMB11A	SMB11CA	KZ	AZ	11	12.2	14.0	1.0	18.2	33.0	5.0
SMB12	SMB12C	LD	BD	12	13.3	16.9	1.0	22.0	27.3	5.0
SMB12A	SMB12CA	LE	BE	12	13.3	15.3	1.0	19.9	30.2	5.0
SMB13	SMB13C	LF	BF	13	14.4	18.2	1.0	23.8	25.2	5.0
SMB13A	SMB13CA	LG	BG	13	14.4	16.5	1.0	21.5	27.9	5.0
SMB14	SMB14C	LH	BH	14	15.6	19.8	1.0	25.8	23.3	5.0
SMB14A	SMB14CA	LK	BK	14	15.6	17.9	1.0	23.2	25.9	5.0
SMB15	SMB15C	LL	BL	15	16.7	21.1	1.0	26.9	22.3	5.0
SMB15A	SMB15CA	LM	BM	15	16.7	19.2	1.0	24.4	24.6	5.0
SMB16	SMB16C	LN	BN	16	17.8	22.6	1.0	28.8	20.8	5.0
SMB16A	SMB16CA	LP	BP	16	17.8	20.5	1.0	26.0	23.1	5.0
SMB17	SMB17C	LQ	BQ	17	18.9	23.9	1.0	30.5	19.7	5.0
SMB17A	SMB17CA	LR	BR	17	18.9	21.7	1.0	27.6	21.7	5.0
SMB18	SMB18C	LS	BS	18	20.0	25.3	1.0	32.2	18.6	5.0
SMB18A	SMB18CA	LT	BT	18	20.0	23.3	1.0	29.2	20.5	5.0
SMB20	SMB20C	LU	BU	20	22.2	28.1	1.0	35.8	16.8	5.0
SMB20A	SMB20CA	LV	BV	20	22.2	25.5	1.0	32.4	18.5	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>WM</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)
SMB22	SMB22C	LW	BW	22	24.4	30.9	1.0	39.4	15.2	5.0
SMB22A	SMB22CA	LX	BX	22	24.4	28.0	1.0	35.5	16.9	5.0
SMB24	SMB24C	LY	BY	24	26.7	33.8	1.0	43.0	14.0	5.0
SMB24A	SMB24CA	LZ	BZ	24	26.7	30.7	1.0	38.9	15.4	5.0
SMB26	SMB26C	MD	CD	26	28.9	36.6	1.0	46.6	12.9	5.0
SMB26A	SMB26CA	ME	CE	26	28.9	33.2	1.0	42.1	14.3	5.0
SMB28	SMB28C	MF	CF	28	31.1	39.4	1.0	50.0	12.0	5.0
SMB28A	SMB28CA	MG	CG	28	31.1	35.8	1.0	45.4	13.2	5.0
SMB30	SMB30C	MH	CH	30	33.3	42.2	1.0	53.5	11.2	5.0
SMB30A	SMB30CA	MK	CK	30	33.3	38.3	1.0	48.4	12.4	5.0
SMB33	SMB33C	ML	CL	33	36.7	46.5	1.0	59.0	10.2	5.0
SMB33A	SMB33CA	MM	CM	33	36.7	42.2	1.0	53.3	11.3	5.0
SMB36	SMB36C	MN	CN	36	40.0	50.7	1.0	64.3	9.3	5.0
SMB36A	SMB36CA	MP	CP	36	40.0	46.0	1.0	58.1	10.3	5.0
SMB40	SMB40C	MQ	CQ	40	44.4	56.3	1.0	71.4	8.4	5.0
SMB40A	SMB40CA	MR	CR	40	44.4	51.1	1.0	64.5	9.3	5.0
SMB43	SMB43C	MS	CS	43	47.8	60.5	1.0	76.7	7.8	5.0
SMB43A	SMB43CA	MT	CT	43	47.8	54.9	1.0	69.4	8.6	5.0
SMB45	SMB45C	MU	CU	45	50.0	63.3	1.0	80.3	7.5	5.0
SMB45A	SMB45CA	MV	CV	45	50.0	57.5	1.0	72.7	8.3	5.0
SMB48	SMB48C	MW	CW	48	53.3	67.5	1.0	85.5	7.0	5.0
SMB48A	SMB48CA	MX	CX	48	53.3	61.3	1.0	77.4	7.8	5.0
SMB51	SMB51C	MY	CY	51	56.7	71.8	1.0	91.1	6.6	5.0
SMB51A	SMB51CA	MZ	CZ	51	56.7	65.2	1.0	82.4	7.3	5.0
SMB54	SMB54C	ND	DD	54	60.0	76.0	1.0	96.3	6.2	5.0
SMB54A	SMB54CA	NE	DE	54	60.0	69.0	1.0	87.1	6.9	5.0
SMB58	SMB58C	NF	DF	58	64.4	81.6	1.0	103	5.8	5.0
SMB58A	SMB58CA	NG	DG	58	64.4	74.1	1.0	93.6	6.4	5.0
SMB60	SMB60C	NH	DH	60	66.7	84.5	1.0	107	5.6	5.0
SMB60A	SMB60CA	NK	DK	60	66.7	76.7	1.0	96.8	6.2	5.0
SMB64	SMB64C	NL	DL	64	71.1	90.1	1.0	114	5.3	5.0
SMB64A	SMB64CA	NM	DM	64	71.1	81.8	1.0	103	5.8	5.0
SMB70	SMB70C	NN	DN	70	77.8	98.6	1.0	125	4.8	5.0
SMB70A	SMB70CA	NP	DP	70	77.8	89.5	1.0	113	5.3	5.0
SMB75	SMB75C	NQ	DQ	75	83.0	105.7	1.0	134	4.5	5.0
SMB75A	SMB75CA	NR	DR	75	83.0	95.8	1.0	121	5.0	5.0
SMB78	SMB78C	NS	DS	78	86.0	109.8	1.0	139	4.3	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)
SMB78A	SMB78CA	NT	DT	78	86.0	99.7	1.0	126	4.8	5.0
SMB85	SMB85C	NU	DU	85	94.0	119.2	1.0	151	4.0	5.0
SMB85A	SMB85CA	NV	DV	85	94.0	108.2	1.0	137	4.4	5.0
SMB90	SMB90C	NW	DW	90	100	126.5	1.0	160	3.8	5.0
SMB90A	SMB90CA	NX	DX	90	100	115.5	1.0	146	4.1	5.0
SMB100	SMB100C	NY	DY	100	111	141.0	1.0	179	3.4	5.0
SMB100A	SMB100CA	NZ	DZ	100	111	128.0	1.0	162	3.7	5.0
SMB110	SMB110C	PD	ED	110	122	154.5	1.0	196	3.1	5.0
SMB110A	SMB110CA	PE	EE	100	122	140.5	1.0	177	3.4	5.0
SMB120	SMB120C	PF	EF	120	133	169.0	1.0	214	2.8	5.0
SMB120A	SMB120CA	PG	EG	120	133	153.0	1.0	193	3.1	5.0
SMB130	SMB130C	PH	EH	130	144	182.5	1.0	231	2.6	5.0
SMB130A	SMB130CA	PK	EK	130	144	165.5	1.0	209	2.9	5.0
SMB150	SMB150C	PL	EL	150	167	211.5	1.0	268	2.2	5.0
SMB150A	SMB150CA	PM	EM	150	167	192.5	1.0	243	2.5	5.0
SMB160	SMB160C	PN	EN	160	178	226.0	1.0	287	2.1	5.0
SMB160A	SMB160CA	PP	EP	160	178	205.0	1.0	259	2.3	5.0
SMB170	SMB170C	PQ	EQ	170	189	239.5	1.0	304	2.0	5.0
SMB170A	SMB170CA	PR	ER	170	189	217.5	1.0	275	2.2	5.0
SMB180	SMB180C	PS	ES	180	200	253.8	1.0	321	1.9	5.0
SMB180A	SMB180CA	PT	ET	180	200	230.4	1.0	290	2.1	5.0
SMB190	SMB190C	PU	EU	190	211	267.9	1.0	339	1.8	5.0
SMB190A	SMB190CA	PV	EV	190	211	243.2	1.0	306	2.0	5.0
SMB200	SMB200C	PW	EW	200	222	282.0	1.0	356	1.7	5.0
SMB200A	SMB200CA	PX	EX	200	222	256.0	1.0	322	1.9	5.0
SMB210	SMB210C	PY	EY	210	233	296.1	1.0	375	1.6	5.0
SMB210A	SMB210CA	PZ	EZ	210	233	268.8	1.0	339	1.8	5.0
SMB220	SMB220C	QD	FD	220	244	310.2	1.0	392	1.5	5.0
SMB220A	SMB220CA	QE	FE	220	244	281.6	1.0	355	1.7	5.0
SMB250	SMB250C	QF	FF	250	278	342.5	1.0	447	1.3	5.0
SMB250A	SMB250CA	QG	FG	250	278	309.0	1.0	403	1.5	5.0
SMB300	SMB300C	QH	FH	300	333	411.0	1.0	535	1.1	5.0
SMB300A	SMB300CA	QK	FK	300	333	371.0	1.0	484	1.2	5.0
SMB350	SMB350C	QL	FL	350	389	479.5	1.0	624	1.0	5.0
SMB350A	SMB350CA	QM	FM	350	389	432.0	1.0	565	1.1	5.0
SMB400	SMB400C	QN	FN	400	444	548.0	1.0	687	0.9	5.0
SMB400A	SMB400CA	QP	FP	400	444	494.0	1.0	645	0.9	5.0
SMB440	SMB440C	QQ	FQ	440	489	602.8	1.0	786	0.8	5.0
SMB440A	SMB440CA	QR	FR	440	489	543.0	1.0	710	0.8	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.
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- (3) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " (V<sub>WM</sub>) which should be equal to or greater then the D.C. or continuous peak operating voltage level.

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

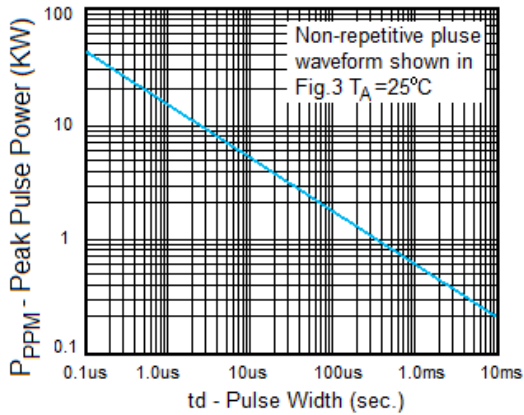


Fig. 1 Peak Pulse Power Rating

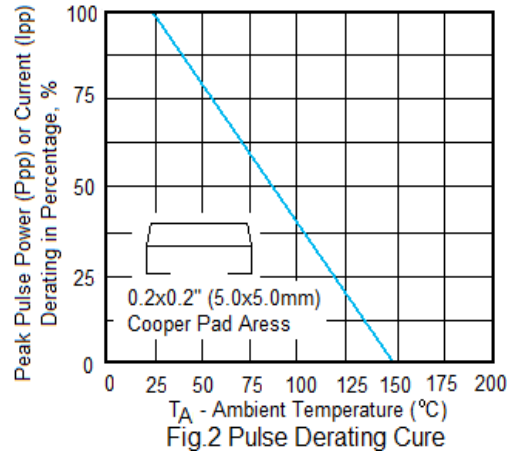


Fig. 2 Pulse Derating Curve

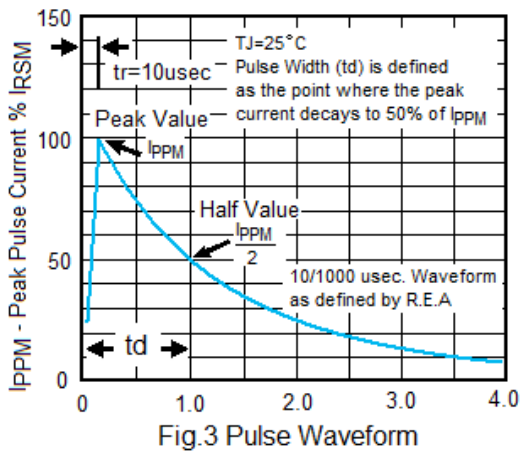


Fig. 3 Pulse Waveform

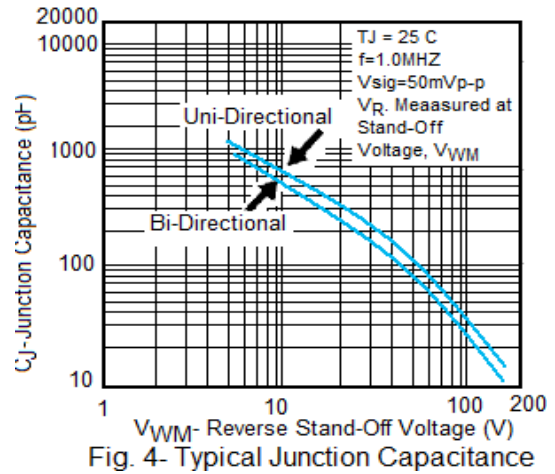


Fig. 4- Typical Junction Capacitance