

# SMB Series

600Watts Surface Mount Transient Voltage Suppressor

STAND-OFF VOLTAGE - **6.8** to **200** Volts  
POWER DISSIPATION - **600** WATTS



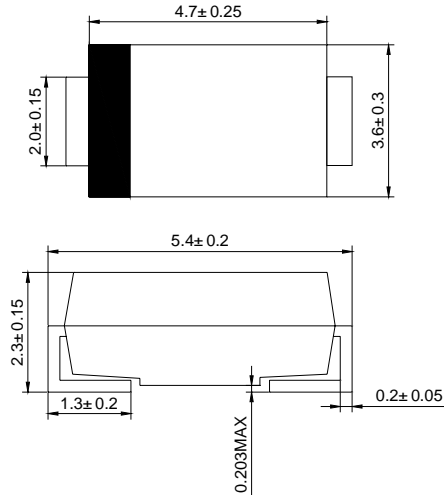
## Features

- ✧ Rating to 200V VBR
- ✧ For surface mounted applications
- ✧ Reliable low cost construction utilizing molded plastic technique
- ✧ Plastic material has UL flammability classification 94V-O
- ✧ Typical IR less than 1uA above 10V
- ✧ Fast response time: typically less than 1.0ps for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min

## Mechanical Data

- ✧ Case : Molded plastic
- ✧ Polarity : by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- ✧ Weight : 0.003 ounces, 0.093 gram

### DO-214AA(SMB)



Dimensions in millimeters

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT $T_A = 25^\circ\text{C}$ , $T_P = 1\text{ms}$ (Note 1,2)	PPK	Minimum 600	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD)	$I_{FSM}$	100	AMPS.
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$	$P_{M(AV)}$	5.0	WATTS
Maximum Instantaneous forward voltage at 50A for unidirectional devices only (Note 3)	$V_F$	SEE NOTE 4	Volts
Operating Temperature Range	$T_J$	-55 to +150	°C
Storage Temperature Range	$T_{STG}$	-55 to +175	°C

NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per fig.1.

2. Thermal Resistance junction to Lead

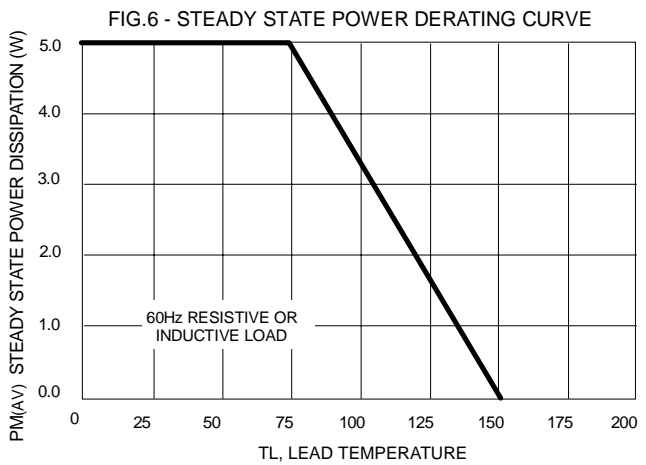
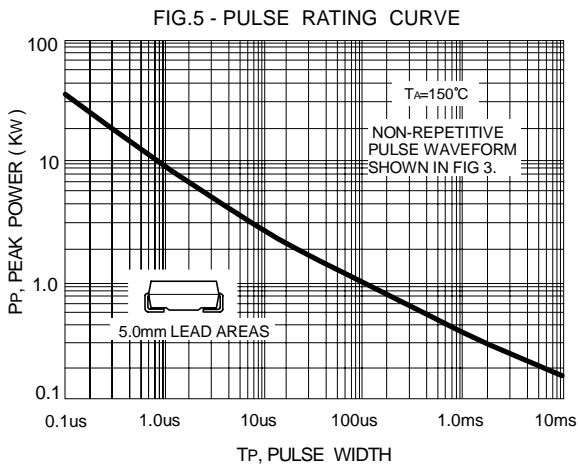
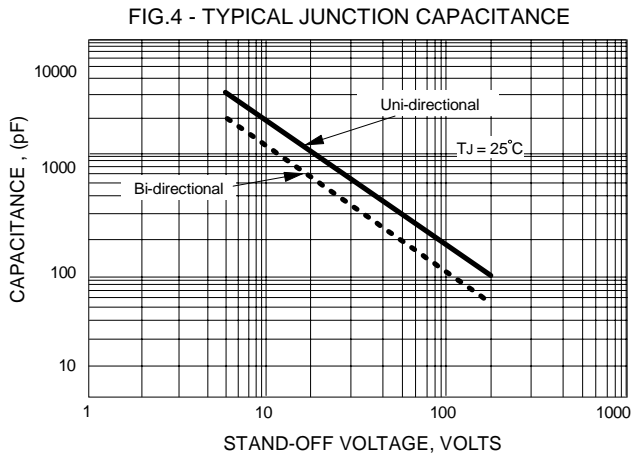
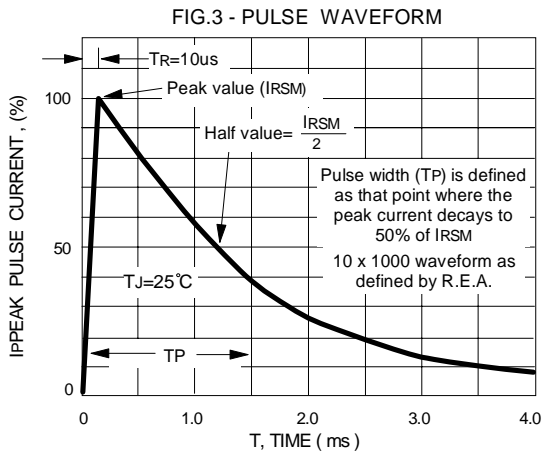
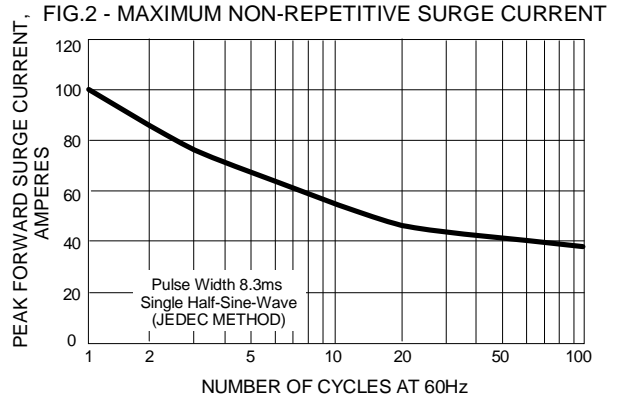
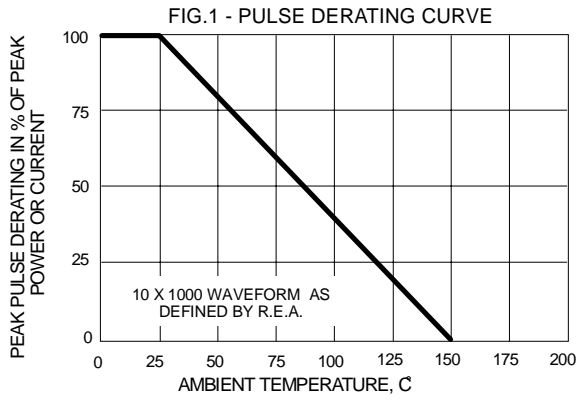
3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).

4.  $V_F = 3.5\text{V}$  on SMB6.8 thru SMB90A devices and  $V_F = 5.0\text{V}$  on SMB100 thru SMB200A devices.

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## RATING AND CHARACTERISTIC CURVES



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Device Uni-directional	Device Bi-directional	Device Marking code		Breakdown voltage VBR Volts			Working Peak Reverse Voltage	Maximum Reverse Leakage at V <sub>RWM</sub>	Maximum Reverse Surge Current	Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage)
		(UNI)	(BI)	Min.	Max.	@IT( mA)	V <sub>RWM</sub> (Volts)	IR (uA)	I <sub>RSM</sub> (Amps)	V <sub>RSM</sub> (Volts)
SMB6.8	SMB6.8C	KDK	KDM	6.12	7.48	10.0	5.50	1000	55.6	10.8
SMB6.8A	SMB6.8CA	KEK	KEM	6.45	7.14	10.0	5.80	1000	57.1	10.5
SMB7.5	SMB7.5C	KFK	KFM	6.75	8.25	10.0	6.05	500	51.3	11.7
SMB7.5A	SMB7.5CA	KGK	KGM	7.13	7.88	10.0	6.40	500	53.1	11.3
SMB8.2	SMB8.2C	KHK	KHM	7.38	9.02	10.0	6.63	200	48.0	12.5
SMB8.2A	SMB8.2CA	KKK	KKM	7.79	8.61	10.0	7.02	200	49.6	12.1
SMB9.1	SMB9.1C	KLK	KLM	8.19	10.0	10.0	7.37	50.0	44.0	13.8
SMB9.1A	SMB9.1CA	KMK	KMM	8.65	9.55	10.0	7.78	50.0	44.8	13.4
SMB10	SMB10C	KNK	KNM	9.00	11.0	1.0	8.10	20.0	40.0	15.0
SMB10A	SMB10CA	KPK	KPM	9.50	10.5	1.0	8.55	20.0	41.4	14.5
SMB11	SMB11C	KQK	KQM	9.90	12.1	1.0	8.92	5.0	37.0	16.2
SMB11A	SMB11CA	KRK	KRM	10.5	11.6	1.0	9.40	5.0	38.5	15.6
SMB12	SMB12C	KSK	KSM	10.8	13.2	1.0	9.72	5.0	34.7	17.3
SMB12A	SMB12CA	KTK	KTM	11.4	12.6	1.0	10.2	5.0	35.9	16.7
SMB13	SMB13C	KUK	KUM	11.7	14.3	1.0	10.5	5.0	31.6	19.0
SMB13A	SMB13CA	KVK	KVM	12.4	13.7	1.0	11.1	5.0	33.0	18.2
SMB15	SMB15C	KWK	KWM	13.5	16.3	1.0	12.1	5.0	27.3	22.0
SMB15A	SMB15CA	KXK	KXM	14.3	15.8	1.0	12.8	5.0	28.3	21.2
SMB16	SMB16C	KYK	KYM	14.4	17.6	1.0	12.9	5.0	25.5	23.5
SMB16A	SMB16CA	KZK	KZM	15.2	16.8	1.0	13.6	5.0	26.7	22.5
SMB18	SMB18C	LDK	LDM	16.2	19.8	1.0	14.5	5.0	22.6	26.5
SMB18A	SMB18CA	LEK	LEM	17.1	18.9	1.0	15.3	5.0	23.5	25.5
SMB20	SMB20C	LFK	LFM	18.0	22.0	1.0	16.2	5.0	20.6	29.1
SMB20A	SMB20CA	LGK	LGM	19.0	21.0	1.0	17.1	5.0	21.7	27.7
SMB22	SMB22C	LHK	LHM	19.8	24.2	1.0	17.8	5.0	18.8	31.9
SMB22A	SMB22CA	LKK	LKM	20.9	23.1	1.0	18.8	5.0	19.6	30.6
SMB24	SMB24C	LLK	LLM	21.6	26.4	1.0	19.4	5.0	17.3	34.7
SMB24A	SMB24CA	LMK	LMM	22.8	25.2	1.0	20.5	5.0	18.1	33.2
SMB27	SMB27C	LNK	LNM	24.3	29.7	1.0	21.8	5.0	15.3	39.1
SMB27A	SMB27CA	LPK	LPM	25.7	28.4	1.0	23.1	5.0	16.0	37.5
SMB30	SMB30C	LQK	LQM	27.0	33.0	1.0	24.3	5.0	13.8	43.5
SMB30A	SMB30CA	LRK	LRM	28.5	31.5	1.0	25.6	5.0	14.4	41.4
SMB33	SMB33C	LSK	LSM	29.7	36.3	1.0	26.8	5.0	12.6	47.7
SMB33A	SMB33CA	LTK	LTM	31.4	34.7	1.0	28.2	5.0	13.2	45.7
SMB36	SMB36C	LUK	LUM	32.4	39.6	1.0	29.1	5.0	11.6	52.0
SMB36A	SMB36CA	LVK	LVM	34.2	37.8	1.0	30.8	5.0	12.0	49.9
SMB39	SMB39C	LWK	LWM	35.1	42.9	1.0	31.6	5.0	10.6	56.4
SMB39A	SMB39CA	LXK	LXM	37.1	41.0	1.0	33.3	5.0	11.2	53.9
SMB43	SMB43C	LYK	LYM	38.7	47.3	1.0	34.8	5.0	9.6	61.9
SMB43A	SMB43CA	LZK	LZM	40.9	45.2	1.0	36.8	5.0	10.1	59.3

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		(UNI)	(BI)	Min.	Max.	@IT (mA)	VRWM(Volts)	IR (uA)	IRSM(Amps)	VRSM(Volts)
SMB47	SMB47C	MDK	MDM	42.3	51.7	1.0	38.1	5.0	8.85	67.8
SMB47A	SMB47CA	MEK	MEM	44.7	49.4	1.0	40.2	5.0	9.26	64.8
SMB51	SMB45C	MFK	MFM	45.9	56.1	1.0	41.3	5.0	8.16	73.5
SMB51A	SMB45CA	MGK	MGM	48.5	53.6	1.0	43.6	5.0	8.56	70.1
SMB56	SMB56C	MHK	MHM	50.4	61.6	1.0	45.4	5.0	7.45	80.5
SMB56A	SMB56CA	MKK	MKM	53.2	58.8	1.0	47.8	5.0	7.79	77.0
SMB62	SMB62C	MLK	MLM	55.8	68.2	1.0	50.2	5.0	6.74	89.0
SMB62A	SMB62CA	MMK	MMM	58.9	65.1	1.0	53.0	5.0	7.06	85.0
SMB68	SMB68C	MNK	MNM	61.2	74.8	1.0	55.1	5.0	6.12	98.0
SMB68A	SMB68CA	MPK	MPM	64.6	71.4	1.0	58.1	5.0	6.52	92.0
SMB75	SMB75C	MQK	MQM	67.5	82.5	1.0	60.7	5.0	5.56	108
SMB75A	SMB75CA	MRK	MRM	71.3	78.8	1.0	64.1	5.0	5.83	103
SMB82	SMB82C	MSK	MSM	73.8	90.2	1.0	66.4	5.0	5.08	118
SMB82A	SMB82CA	MTK	MTM	77.8	86.0	1.0	70.1	5.0	5.31	113
SMB91	SMB91C	MUK	MUM	81.9	100	1.0	73.7	5.0	4.58	131
SMB91A	SMB91CA	MVK	MVM	86.5	95.5	1.0	77.8	5.0	4.80	125
SMB100	SMB100C	MWK	MWM	90.0	110	1.0	81.0	5.0	4.17	144
SMB100A	SMB100CA	MXK	MXM	95.0	105	1.0	85.5	5.0	4.38	137
SMB110	SMB110C	MYK	MYM	99.0	121	1.0	89.2	5.0	3.80	158
SMB110A	SMB110CA	MZK	MZM	105	116	1.0	94.0	5.0	3.95	152
SMB120	SMB120C	NDK	NDM	108	132	1.0	97.2	5.0	3.47	173
SMB120A	SMB120CA	NEK	NEM	114	126	1.0	102	5.0	3.64	165
SMB130	SMB130C	NFK	NFM	117	143	1.0	105	5.0	3.21	187
SMB130A	SMB130CA	NGK	NGM	124	137	1.0	111	5.0	3.35	179
SMB150	SMB150C	NHK	NHM	135	165	1.0	121	5.0	2.79	215
SMB150A	SMB150CA	NKK	NKM	143	158	1.0	128	5.0	2.90	207
SMB160	SMB160C	NLK	NLM	144	176	1.0	130	5.0	2.61	230
SMB160A	SMB160CA	NMK	NMM	152	168	1.0	136	5.0	2.74	219
SMB170	SMB170C	NNK	NNM	153	187	1.0	138	5.0	2.46	244
SMB170A	SMB170CA	NPK	NPM	162	179	1.0	145	5.0	2.56	234
SMB180	SMB180C	NQK	NQM	162	198	1.0	146	5.0	2.33	258
SMB180A	SMB180CA	NRK	NRM	171	189	1.0	154	5.0	2.44	246
SMB200	SMB200C	NSK	NSM	180	220	1.0	162	5.0	2.09	287
SMB200A	SMB200CA	NTK	NTM	190	210	1.0	171	5.0	2.19	274

**NOTE :**

- 1) Suffix 'A ' denotes 5% tolerance device, no suffix denotes 10 % tolerance device.
- 2) Add suffix 'C ' or ' CA ' after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .