

SMB



Bi-directional



Uni-direction

Symbol

Features

Peak power dissipation 600W@10 x 1000 us Pulse

Low incremental surge resistance

Excellent clamping capability

Glass passivated junction

Fast response time

Typical IR less than 1uA above 10V

Halogen free and RoHS compliant

Mechanical Data

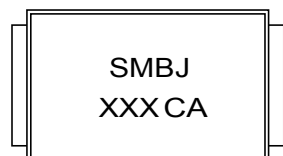
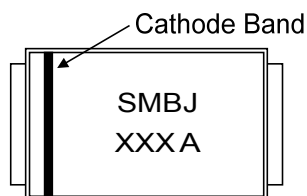
CASE: SMBJ(DO-214AA) Molded Plastic

Polarity: By cathode band denotes uni-directional device,

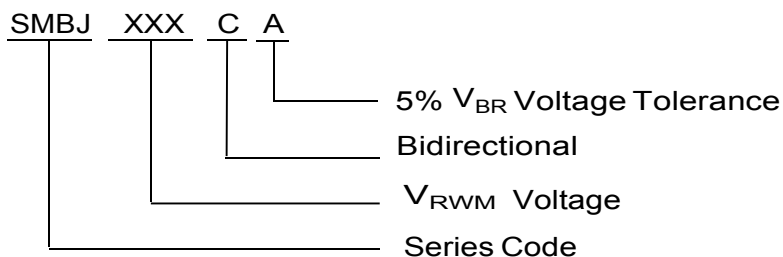
none cathode band denotes bi-directional device

Mounting Position:Any

Making Code & information



Package	Packing Description	Packing Quantity
SMB	Tape/Reel, 13" reel	3000



Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P_{PPM}	Min 600	W
Power Dissipation on Infinite Heat Sink at $T_L=50^\circ\text{C}$	P_D	5	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I_{PPM}	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3)	I_{FSM}	100	A
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
2. Mounted on 5.0x5.0mm² (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

Type Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	V _{RMW} (V)	V _{BR} MIN(V)	V _{BR} MAX(V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.00	10	9.2	65.3	500
SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.37	10	10.3	58.3	500
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	11.2	53.6	300
SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.60	10	12.0	50.0	200
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	12.9	46.6	100
SMBJ8.0A	SMBJ8.0CA	8.0	8.89	9.83	1	13.6	44.2	50
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.40	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	9.0	10.00	11.10	1	15.4	39.0	10
SMBJ10A	SMBJ10CA	10.0	11.10	12.30	1	17.0	35.3	5
SMBJ11A	SMBJ11CA	11.0	12.20	13.50	1	18.2	33.0	2
SMBJ12A	SMBJ12CA	12.0	13.30	14.70	1	19.9	30.2	1
SMBJ13A	SMBJ13CA	13.0	14.40	15.90	1	21.5	27.9	1
SMBJ14A	SMBJ14CA	14.0	15.60	17.20	1	23.2	25.9	1
SMBJ15A	SMBJ15CA	15.0	16.70	18.50	1	24.4	24.6	1
SMBJ16A	SMBJ16CA	16.0	17.80	19.70	1	26.0	23.1	1
SMBJ17A	SMBJ17CA	17.0	18.90	20.90	1	27.6	21.8	1
SMBJ18A	SMBJ18CA	18.0	20.00	22.10	1	29.2	20.6	1
SMBJ20A	SMBJ20CA	20.0	22.20	24.50	1	32.4	18.6	1
SMBJ22A	SMBJ22CA	22.0	24.40	26.90	1	35.5	16.9	1
SMBJ24A	SMBJ24CA	24.0	26.70	29.50	1	38.9	15.5	1
SMBJ26A	SMBJ26CA	26.0	28.90	31.90	1	42.1	14.3	1
SMBJ28A	SMBJ28CA	28.0	31.10	34.40	1	45.4	13.3	1
SMBJ30A	SMBJ30CA	30.0	33.30	36.80	1	48.4	12.4	1
SMBJ33A	SMBJ33CA	33.0	36.70	40.60	1	53.3	11.3	1
SMBJ36A	SMBJ36CA	36.0	40.00	44.20	1	58.1	10.4	1
SMBJ40A	SMBJ40CA	40.0	44.40	49.10	1	64.5	9.3	1
SMBJ43A	SMBJ43CA	43.0	47.80	52.80	1	69.4	8.7	1
SMBJ45A	SMBJ45CA	45.0	50.00	55.30	1	72.7	8.3	1
SMBJ48A	SMBJ48CA	48.0	53.30	58.90	1	77.4	7.8	1
SMBJ51A	SMBJ51CA	51.0	56.70	62.70	1	82.4	7.3	1
SMBJ54A	SMBJ54CA	54.0	60.00	66.30	1	87.1	6.9	1
SMBJ58A	SMBJ58CA	58.0	64.4	71.20	1	93.6	6.5	1
SMBJ60A	SMBJ60CA	60.0	66.7	73.70	1	96.8	6.2	1
SMBJ64A	SMBJ64CA	64.0	71.1	78.60	1	103.0	5.9	1
SMBJ70A	SMBJ70CA	70.0	77.8	86.00	1	113.0	5.3	1
SMBJ75A	SMBJ75CA	75.0	83.3	92.10	1	121.0	5.0	1
SMBJ78A	SMBJ78CA	78.0	86.7	95.80	1	126.0	4.8	1
SMBJ85A	SMBJ85CA	85.0	94.4	104.00	1	137.0	4.4	1
SMBJ90A	SMBJ90CA	90.0	100.0	111.00	1	146.0	4.1	1
SMBJ100A	SMBJ100CA	100.0	111.0	123.00	1	162.0	3.7	1
SMBJ110A	SMBJ110CA	110.0	122.00	135.00	1	177.0	3.4	1
SMBJ120A	SMBJ120CA	120.0	133.00	147.00	1	193.0	3.1	1
SMBJ130A	SMBJ130CA	130.0	144.00	159.00	1	209.0	2.9	1
SMBJ150A	SMBJ150CA	150.0	167.00	185.00	1	243.0	2.5	1
SMBJ160A	SMBJ160CA	160.0	178.00	197.00	1	259.0	2.3	1
SMBJ170A	SMBJ170CA	170.0	189.00	209.00	1	275.0	2.2	1
SMBJ180A	SMBJ180CA	180.0	201.00	222.00	1	292.0	2.1	1
SMBJ188A	SMBJ188CA	188.0	209.00	231.00	1	304.0	2.0	1
SMBJ200A	SMBJ200CA	200.0	224.00	247.00	1	324.0	1.9	1
SMBJ210A	SMBJ210CA	210.0	237.00	263.00	1	340.0	1.8	1
SMBJ220A	SMBJ220CA	220.0	246.00	272.00	1	356.0	1.7	1
SMBJ250A	SMBJ250CA	250.0	279.00	309.00	1	405.0	1.5	1
SMBJ300A	SMBJ300CA	300.0	335.00	371.00	1	486.0	1.3	1
SMBJ350A	SMBJ350CA	350.0	391.00	432.00	1	567.0	1.1	1
SMBJ400A	SMBJ400CA	400.0	447.00	494.00	1	648.0	0.9	1
SMBJ440A	SMBJ440CA	440.0	492.00	543.00	1	713.0	0.9	1

Notes: For Bi-directional type having V_{RMW} of 10 Volts and less, the I_R limit is double.
For parts without A, the V_{BR} is ± 10% and V_C is 5% higher than with A parts.



Ratings and Characteristic Curves

(Ratings at 25°C ambient temperature unless otherwise specified).

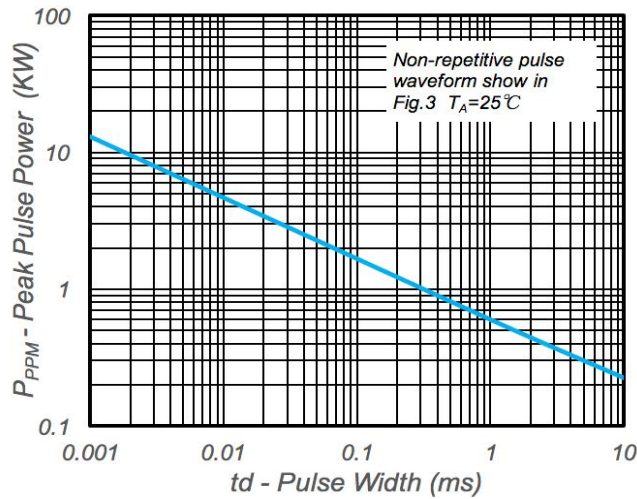


Fig. 1 - Peak Pulse Power Rating

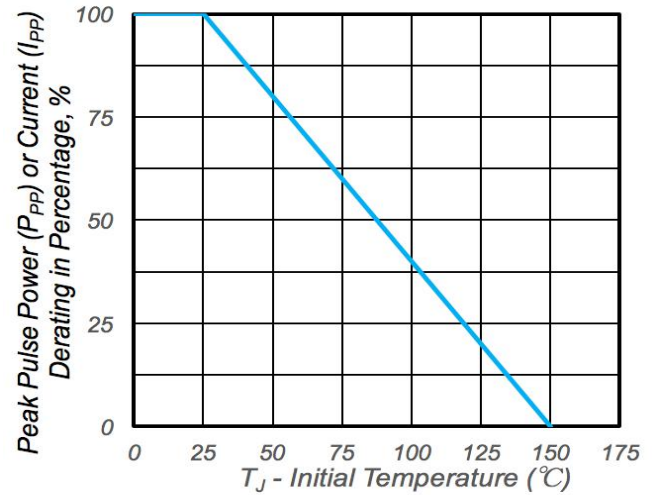


Fig. 2 - Pulse Derating Curve

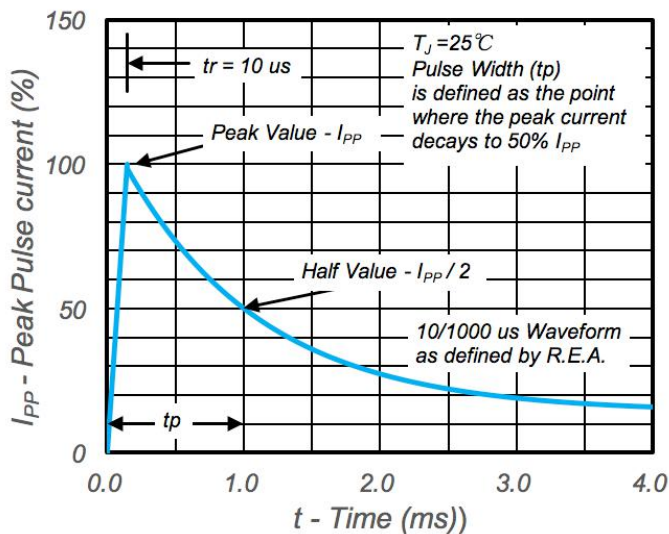


Fig. 3 - Pulse Waveform

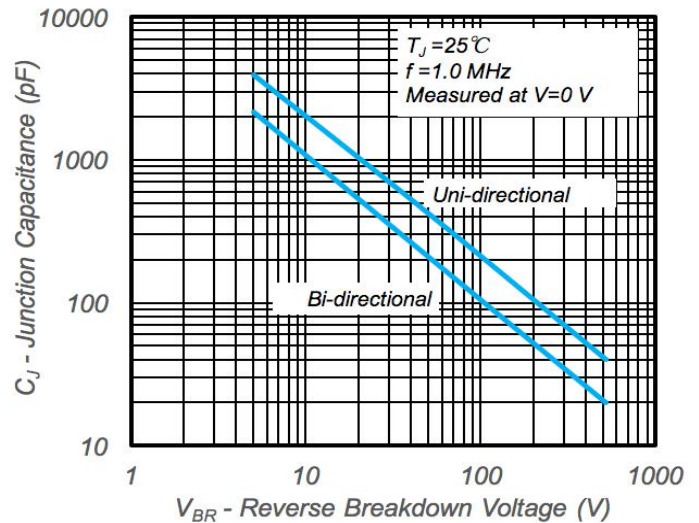


Fig. 4 - Typical Junction Capacitance

Package Outline Dimensions: SMB(DO-214AA)

Dim	Millimeters		Inches	
	Min	Max	Min	Max
L	4.4	4.6	0.173	0.181
D	3.5	3.7	0.138	0.146
D1	1.9	2.1	0.075	0.083
T	5.1	5.48	0.201	0.216
T1	1.0	1.6	0.039	0.063
d	-	0.2	-	0.008
H	2.2	2.45	0.087	0.096
H1	2.15	2.35	0.085	0.093

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