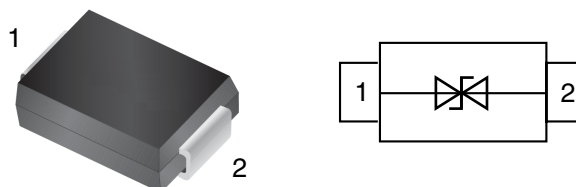


Power TVS in DO-214AA/SMB

Features

- Glass passivated chip
- 600W peak pulse power(10/1000us)
- High accuracy, 5% tolerance
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time

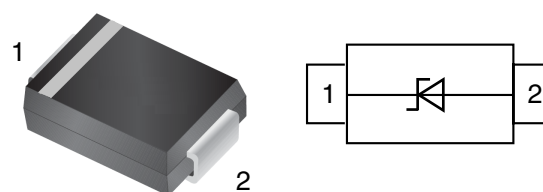
Bidirectional



Mechanical Data

- **Case:** DO-214AA/SMB (plastic package).
RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals

Unidirectional



Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform ⁽¹⁾	P _{PP}	600	W
Maximum peak reverse pulse current a 10/1000us waveform ⁽¹⁾	I _{PP}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave ⁽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.5 and detated above TA=25°C per Fig.1

2.Measured on 8.3ms single half sine-wave,or equivalent square wave,duty cycle=4 pulses per minute maximum

Electrical Characteristics

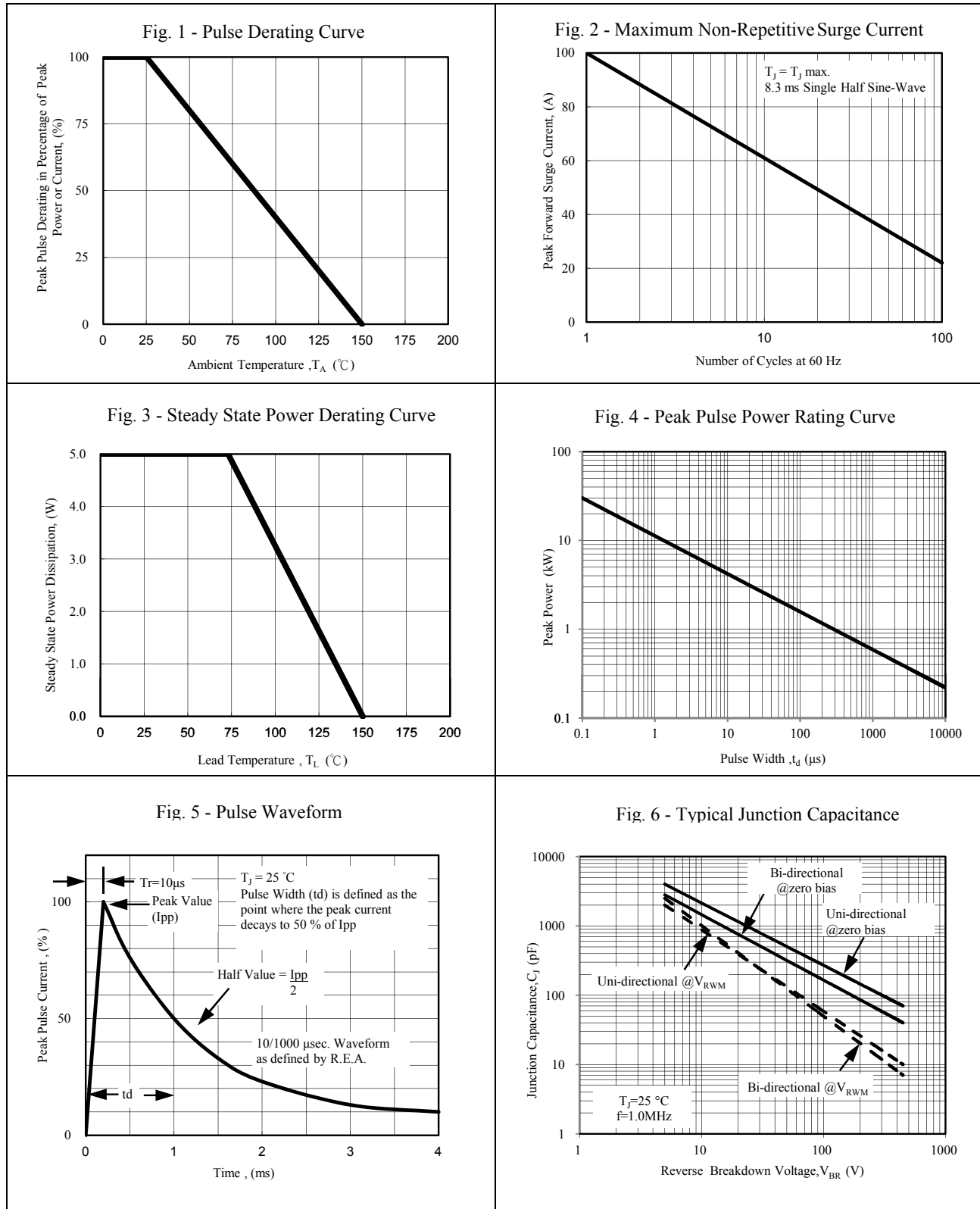
(T_A = 25 °C unless otherwise specified)

Part Number	Direction	Maximum Working Voltage V _{RWM} (V)	Maximum Reverse Current@V _{RWM} I _R max(μA)	Breakdown Voltage@I _T			Peak Surge Current I _{PP} (A)	Maximum Clamping Voltage@I _{PP} V _C (V)
				V _{BR} min(V)	V _{BR} max(V)	I _T (mA)		
SMBJ5.0A	Uni-Dir	5.0	800	6.4	7.00	10	65.22	9.2
SMBJ5.0CA	Bi-Dir	5.0	1600	6.4	7.00	10	65.22	9.2
SMBJ6.0A	Uni-Dir	6.0	800	6.7	7.37	10	58.25	10.3
SMBJ6.0CA	Bi-Dir	6.0	1600	6.7	7.37	10	58.25	10.3
SMBJ6.5A	Uni-Dir	6.5	500	7.2	7.98	10	53.57	11.2
SMBJ6.5CA	Bi-Dir	6.5	1000	7.2	7.98	10	53.57	11.2
SMBJ7.0A	Uni-Dir	7.0	200	7.8	8.60	10	50.00	12.0
SMBJ7.0CA	Bi-Dir	7.0	400	7.8	8.60	10	50.00	12.0
SMBJ7.5A	Uni-Dir	7.5	100	8.3	9.21	1	46.51	12.9
SMBJ7.5CA	Bi-Dir	7.5	200	8.3	9.21	1	46.51	12.9
SMBJ8.0A	Uni-Dir	8.0	50	8.9	9.83	1	44.12	13.6
SMBJ8.0CA	Bi-Dir	8.0	100	8.9	9.83	1	44.12	13.6
SMBJ8.5A	Uni-Dir	8.5	10	9.4	10.40	1	41.67	14.4
SMBJ8.5CA	Bi-Dir	8.5	20	9.4	10.40	1	41.67	14.4
SMBJ9.0A	Uni-Dir	9.0	5	10.0	11.10	1	38.96	15.4
SMBJ9.0CA	Bi-Dir	9.0	10	10.0	11.10	1	38.96	15.4
SMBJ10A	Uni-Dir	10.0	5	11.1	12.30	1	35.29	17.0
SMBJ10CA	Bi-Dir	10.0	10	11.1	12.30	1	35.29	17.0
SMBJ11A	Uni-Dir	11.0	1	12.2	13.50	1	32.97	18.2
SMBJ11CA	Bi-Dir	11.0	1	12.2	13.50	1	32.97	18.2
SMBJ12A	Uni-Dir	12.0	1	13.3	14.70	1	30.15	19.9
SMBJ12CA	Bi-Dir	12.0	1	13.3	14.70	1	30.15	19.9
SMBJ13A	Uni-Dir	13.0	1	14.4	15.90	1	27.91	21.5
SMBJ13CA	Bi-Dir	13.0	1	14.4	15.90	1	27.91	21.5
SMBJ14A	Uni-Dir	14.0	1	15.6	17.20	1	25.86	23.2
SMBJ14CA	Bi-Dir	14.0	1	15.6	17.20	1	25.86	23.2
SMBJ15A	Uni-Dir	15.0	1	16.7	18.50	1	24.59	24.4
SMBJ15CA	Bi-Dir	15.0	1	16.7	18.50	1	24.59	24.4
SMBJ16A	Uni-Dir	16.0	1	17.8	19.70	1	23.08	26.0
SMBJ16CA	Bi-Dir	16.0	1	17.8	19.70	1	23.08	26.0
SMBJ17A	Uni-Dir	17.0	1	18.9	20.90	1	21.74	27.6
SMBJ17CA	Bi-Dir	17.0	1	18.9	20.90	1	21.74	27.6
SMBJ18A	Uni-Dir	18.0	1	20.0	22.10	1	20.55	29.2
SMBJ18CA	Bi-Dir	18.0	1	20.0	22.10	1	20.55	29.2
SMBJ19A	Uni-Dir	19.0	1	21.1	23.30	1	19.49	30.8
SMBJ19CA	Bi-Dir	19.0	1	21.1	23.30	1	19.49	30.8
SMBJ20A	Uni-Dir	20.0	1	22.2	24.50	1	18.52	32.4
SMBJ20CA	Bi-Dir	20.0	1	22.2	24.50	1	18.52	32.4

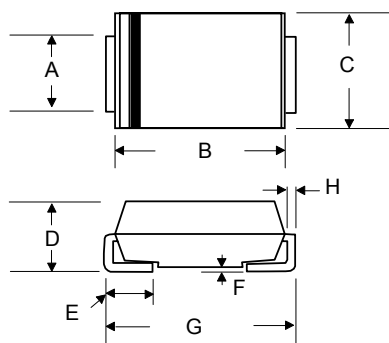
Part Number	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
				V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
SMBJ22A	Uni-Dir	22.0	1	24.4	26.90	1	16.90	35.5
SMBJ22CA	Bi-Dir	22.0	1	24.4	26.90	1	16.90	35.5
SMBJ24A	Uni-Dir	24.0	1	26.7	29.50	1	15.42	38.9
SMBJ24CA	Bi-Dir	24.0	1	26.7	29.50	1	15.42	38.9
SMBJ26A	Uni-Dir	26.0	1	28.9	31.90	1	14.25	42.1
SMBJ26CA	Bi-Dir	26.0	1	28.9	31.90	1	14.25	42.1
SMBJ28A	Uni-Dir	28.0	1	31.1	34.40	1	13.22	45.4
SMBJ28CA	Bi-Dir	28.0	1	31.1	34.40	1	13.22	45.4
SMBJ30A	Uni-Dir	30.0	1	33.3	36.80	1	12.40	48.4
SMBJ30CA	Bi-Dir	30.0	1	33.3	36.80	1	12.40	48.4
SMBJ33A	Uni-Dir	33.0	1	36.7	40.60	1	11.26	53.3
SMBJ33CA	Bi-Dir	33.0	1	36.7	40.60	1	11.26	53.3
SMBJ36A	Uni-Dir	36.0	1	40.0	44.20	1	10.33	58.1
SMBJ36CA	Bi-Dir	36.0	1	40.0	44.20	1	10.33	58.1
SMBJ40A	Uni-Dir	40.0	1	44.4	49.10	1	9.30	64.5
SMBJ40CA	Bi-Dir	40.0	1	44.4	49.10	1	9.30	64.5
SMBJ43A	Uni-Dir	43.0	1	47.8	52.80	1	8.65	69.4
SMBJ43CA	Bi-Dir	43.0	1	47.8	52.80	1	8.65	69.4
SMBJ45A	Uni-Dir	45.0	1	50.0	55.30	1	8.25	72.7
SMBJ45CA	Bi-Dir	45.0	1	50.0	55.30	1	8.25	72.7
SMBJ48A	Uni-Dir	48.0	1	53.3	58.90	1	7.75	77.4
SMBJ48CA	Bi-Dir	48.0	1	53.3	58.90	1	7.75	77.4
SMBJ51A	Uni-Dir	51.0	1	56.7	62.70	1	7.28	82.4
SMBJ51CA	Bi-Dir	51.0	1	56.7	62.70	1	7.28	82.4
SMBJ54A	Uni-Dir	54.0	1	60.0	66.30	1	6.89	87.1
SMBJ54CA	Bi-Dir	54.0	1	60.0	66.30	1	6.89	87.1
SMBJ58A	Uni-Dir	58.0	1	64.4	71.20	1	6.41	93.6
SMBJ58CA	Bi-Dir	58.0	1	64.4	71.20	1	6.41	93.6
SMBJ60A	Uni-Dir	60.0	1	66.7	73.70	1	6.20	96.8
SMBJ60CA	Bi-Dir	60.0	1	66.7	73.70	1	6.20	96.8
SMBJ64A	Uni-Dir	64.0	1	71.1	78.60	1	5.83	103.0
SMBJ64CA	Bi-Dir	64.0	1	71.1	78.60	1	5.83	103.0
SMBJ70A	Uni-Dir	70.0	1	77.8	86.00	1	5.31	113.0
SMBJ70CA	Bi-Dir	70.0	1	77.8	86.00	1	5.31	113.0
SMBJ75A	Uni-Dir	75.0	1	83.3	92.10	1	4.96	121.0
SMBJ75CA	Bi-Dir	75.0	1	83.3	92.10	1	4.96	121.0
SMBJ78A	Uni-Dir	78.0	1	86.7	95.80	1	4.76	126.0
SMBJ78CA	Bi-Dir	78.0	1	86.7	95.80	1	4.76	126.0

Part Number	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
				V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
SMBJ80A	Uni-Dir	80.0	1	88.8	97.60	1	4.63	129.6
SMBJ80CA	Bi-Dir	80.0	1	88.8	97.60	1	4.63	129.6
SMBJ85A	Uni-Dir	85.0	1	94.4	104.00	1	4.38	137.0
SMBJ85CA	Bi-Dir	85.0	1	94.4	104.00	1	4.38	137.0
SMBJ90A	Uni-Dir	90.0	1	100.0	111.00	1	4.11	146.0
SMBJ90CA	Bi-Dir	90.0	1	100.0	111.00	1	4.11	146.0
SMBJ100A	Uni-Dir	100.0	1	111.0	123.00	1	3.70	162.0
SMBJ100CA	Bi-Dir	100.0	1	111.0	123.00	1	3.70	162.0
SMBJ110A	Uni-Dir	110.0	1	122.0	135.00	1	3.39	177.0
SMBJ110CA	Bi-Dir	110.0	1	122.0	135.00	1	3.39	177.0
SMBJ120A	Uni-Dir	120.0	1	133.0	147.00	1	3.11	193.0
SMBJ120CA	Bi-Dir	120.0	1	133.0	147.00	1	3.11	193.0
SMBJ130A	Uni-Dir	130.0	1	144.0	159.00	1	2.87	209.0
SMBJ130CA	Bi-Dir	130.0	1	144.0	159.00	1	2.87	209.0
SMBJ140A	Uni-Dir	140.0	1	155.0	171.00	1	2.65	226.8
SMBJ140CA	Bi-Dir	140.0	1	155.0	171.00	1	2.65	226.8
SMBJ150A	Uni-Dir	150.0	1	167.0	185.00	1	2.47	243.0
SMBJ150CA	Bi-Dir	150.0	1	167.0	185.00	1	2.47	243.0
SMBJ160A	Uni-Dir	160.0	1	178.0	197.00	1	2.32	259.0
SMBJ160CA	Bi-Dir	160.0	1	178.0	197.00	1	2.32	259.0
SMBJ170A	Uni-Dir	170.0	1	189.0	209.00	1	2.18	275.0
SMBJ170CA	Bi-Dir	170.0	1	189.0	209.00	1	2.18	275.0
SMBJ180A	Uni-Dir	180.0	1	200.0	220.00	1	2.06	291.6
SMBJ180CA	Bi-Dir	180.0	1	200.0	220.00	1	2.06	291.6
SMBJ190A	Uni-Dir	190.0	1	211.0	232.00	1	1.95	307.8
SMBJ190CA	Bi-Dir	190.0	1	211.0	232.00	1	1.95	307.8
SMBJ200A	Uni-Dir	200.0	1	224.0	247.00	1	1.85	324.0
SMBJ200CA	Bi-Dir	200.0	1	224.0	247.00	1	1.85	324.0
SMBJ220A	Uni-Dir	220.0	1	246.0	272.00	1	1.69	356.0
SMBJ220CA	Bi-Dir	220.0	1	246.0	272.00	1	1.69	356.0
SMBJ250A	Uni-Dir	250.0	1	279.0	309.00	1	1.48	405.0
SMBJ250CA	Bi-Dir	250.0	1	279.0	309.00	1	1.48	405.0
SMBJ300A	Uni-Dir	300.0	1	335.0	371.00	1	1.23	486.0
SMBJ300CA	Bi-Dir	300.0	1	335.0	371.00	1	1.23	486.0
SMBJ350A	Uni-Dir	350.0	1	391.0	432.00	1	1.06	567.0
SMBJ350CA	Bi-Dir	350.0	1	391.0	432.00	1	1.06	567.0
SMBJ400A	Uni-Dir	400.0	1	447.0	494.00	1	0.93	648.0
SMBJ400CA	Bi-Dir	400.0	1	447.0	494.00	1	0.93	648.0
SMBJ440A	Uni-Dir	440.0	1	492.0	543.00	1	0.84	713.0
SMBJ440CA	Bi-Dir	440.0	1	492.0	543.00	1	0.84	713.0

Typical Characteristics ($T_{amb} = 25^\circ\text{C}$ unless otherwise specified)



Package Dimensions



Symbol	Dimensions in millimeters	
	Min	Max
A	1.93	2.08
B	4.25	4.75
C	3.48	3.73
D	1.99	2.61
E	0.90	1.41
F	0.10	0.20
G	5.26	5.46
H	0.15	0.31

Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
SMBJ Series	DO-214AA/SMB	Tape and reel	3000pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2012	1.0	Initial release

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