



Surface Mount Uni/Bi-Directional TVS Diodes

Peak Pulse Power - 600 W
Reverse Stand Off Voltage - 5 to 440 V

Description

The SMBJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- For surface mounted applications
- Low profile package
- 600W Peak pulse power capability at 10/1000µs waveform
- Excellent clamping capability
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min

- High temperature soldering: 260°C/10s
- IEC 61000-4-2 (ESD) :±30kV(Contact) / ±30kV(Air)

Mechanical Data

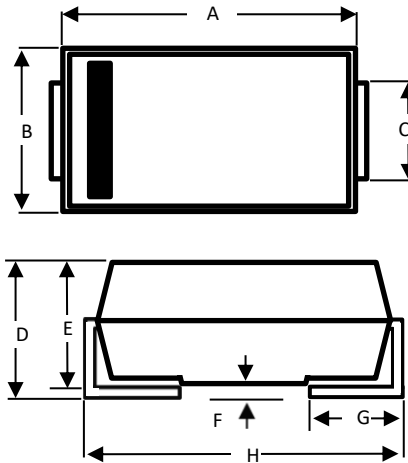
- Case:SMB(DO-214AA)package
- Case material: "green" molding compound
- UL flammability classification rating 94V-0
- Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Weight: 0.10grams

Note: Products with logo  or  are made by HY Electronic (Cayman) Limited

Applications

TVS devices are ideal for the protection of I/O Interfaces, Vcc bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

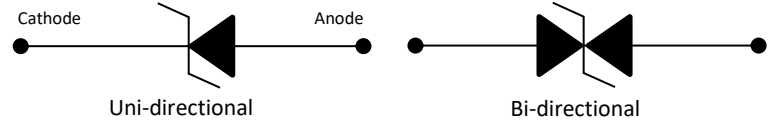
Package Outline Dimensions



SMB Package		
Dim	Min	Max
A	4.22	4.70
B	3.40	3.94
C	1.90	2.10
D	1.95	2.60
E	1.95	2.34
F	-	0.23
G	0.90	1.42
H	5.21	5.59

All Dimensions in mm

Device Schematic



Ordering Information

- Package :SMB(DO-214AA)
- Reel Size :13 (inches)
- Quantity Per Reel :3Kpcs
- Quantity Per Box :6Kpcs
- Quantity Per Carton :48Kpcs

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Absolute Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000us Waveform (Note 1)	PPp	600	W
Power Dissipation on Infinite Heat Sink at TL=50°C	PM(AV)	5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	IFSM	80	A
Maximum Instantaneous Forward Voltage at 50A (Note 2)	VF	5	V
Operating Temperature Range	Tj	-55 to +150	° C
Storage Temperature Range	TSTG	-55 to +150	° C

- Note:
1. Non-repetitive current pulse, per Fig.4 and derated above Tj(initial) =25°C per Fig.1
 2. For unidirectional units only

Electrical Characteristics (@T_A = 25°C, unless otherwise specified.)

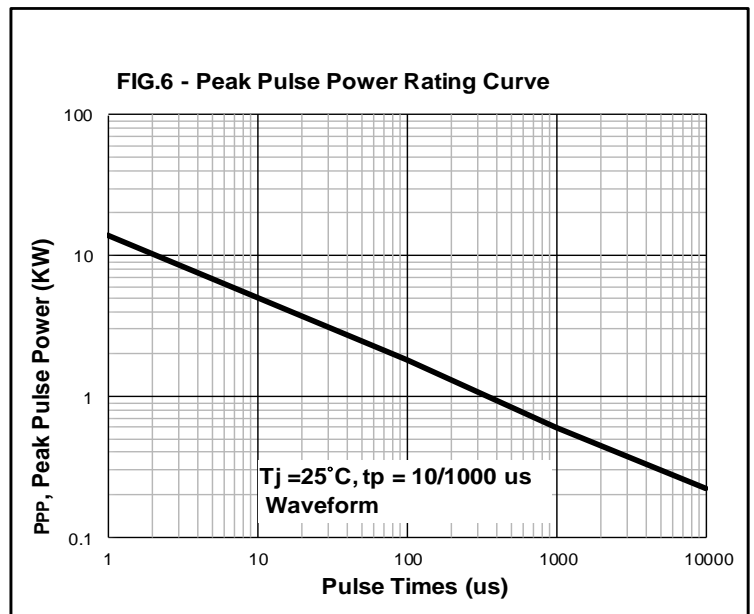
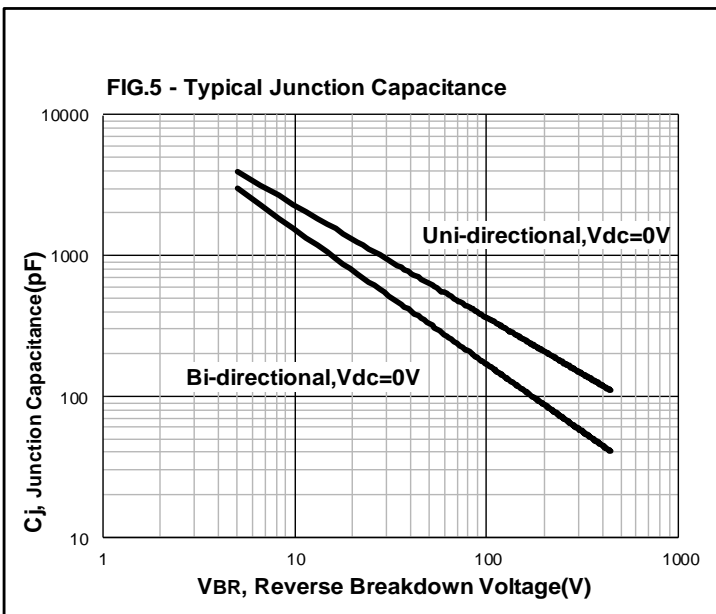
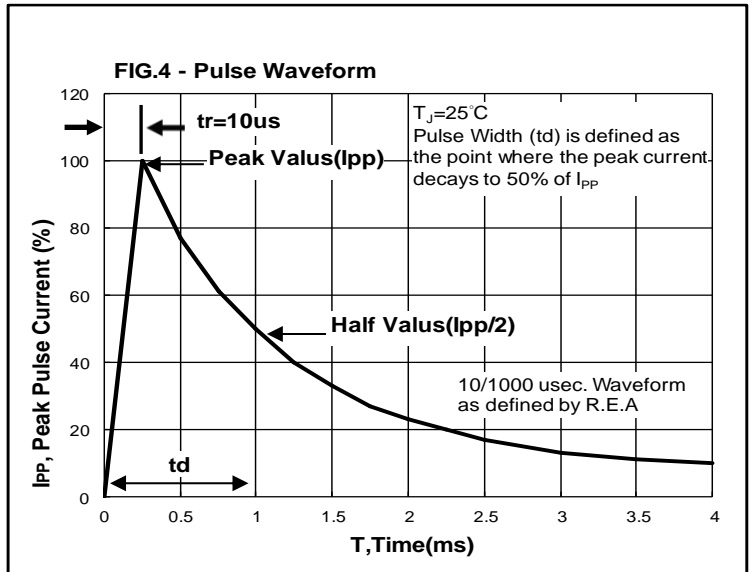
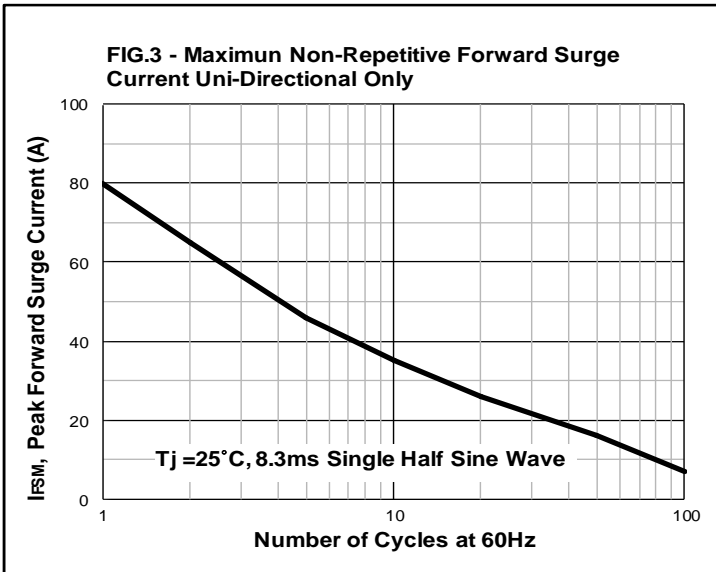
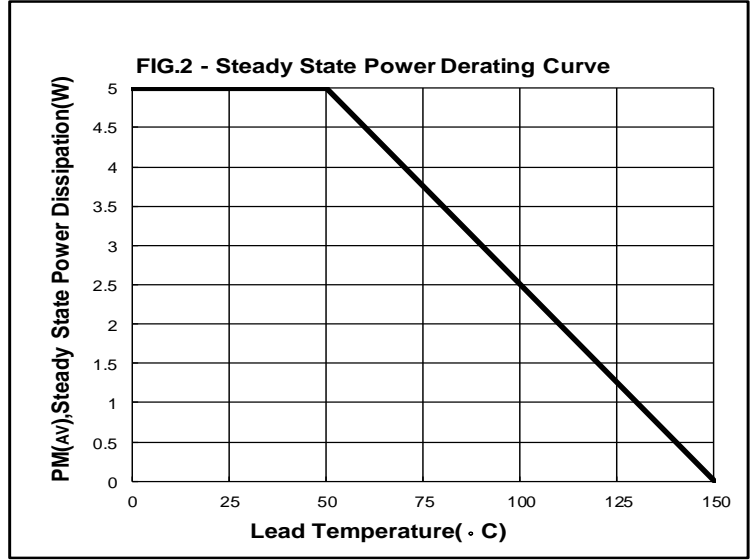
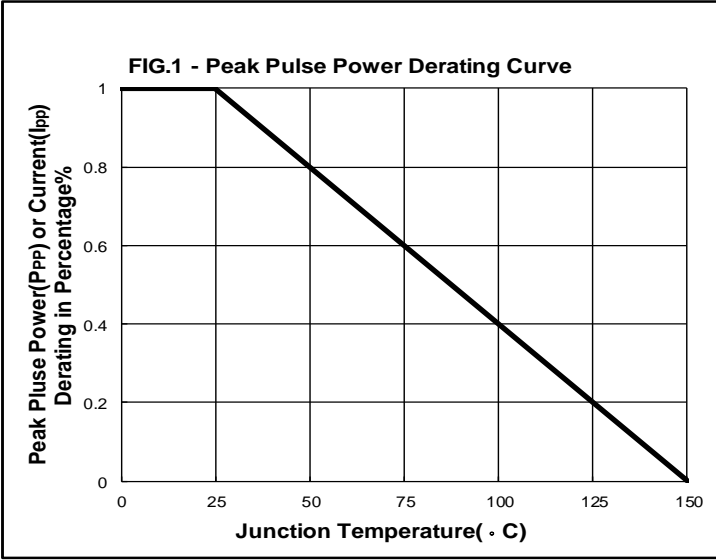
Part Number		Marking Code		Reverse Working Voltage V _{RWM} (V)	Reverse Breakdown Voltage V _B (V)			Reverse Leakage (Max) I _R (μ A) @V _R	Reverse Clamping Voltage (Max) V _c (V) @I _{PP}	Peak Pulse Current (Max) I _{PP} (A)
Uni.	Bi.	Uni.	Bi.		Min.	Max.	@I _T (mA)			
SMBJ5.0A	SMBJ5.0CA	SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.00	10	800	9.2	65.2
SMBJ6.0A	SMBJ6.0CA	SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.37	10	800	10.3	58.3
SMBJ6.5A	SMBJ6.5CA	SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	500	11.2	53.6
SMBJ7.0A	SMBJ7.0CA	SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.60	10	200	12.0	50.0
SMBJ7.5A	SMBJ7.5CA	SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	100	12.9	46.5
SMBJ8.0A	SMBJ8.0CA	SMBJ8.0A	SMBJ8.0CA	8.0	8.89	9.83	1	50	13.6	44.1
SMBJ8.5A	SMBJ8.5CA	SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.40	1	20	14.4	41.7
SMBJ9.0A	SMBJ9.0CA	SMBJ9.0A	SMBJ9.0CA	9.0	10.0	11.1	1	10	15.4	39.0
SMBJ10A	SMBJ10CA	SMBJ10A	SMBJ10CA	10	11.1	12.3	1	5	17.0	35.3
SMBJ11A	SMBJ11CA	SMBJ11A	SMBJ11CA	11	12.2	13.5	1	1	18.2	33.0
SMBJ12A	SMBJ12CA	SMBJ12A	SMBJ12CA	12	13.3	14.7	1	1	19.9	30.2
SMBJ13A	SMBJ13CA	SMBJ13A	SMBJ13CA	13	14.4	15.9	1	1	21.5	27.9
SMBJ14A	SMBJ14CA	SMBJ14A	SMBJ14CA	14	15.6	17.2	1	1	23.2	25.9
SMBJ15A	SMBJ15CA	SMBJ15A	SMBJ15CA	15	16.7	18.5	1	1	24.4	24.6
SMBJ16A	SMBJ16CA	SMBJ16A	SMBJ16CA	16	17.8	19.7	1	1	26.0	23.1
SMBJ17A	SMBJ17CA	SMBJ17A	SMBJ17CA	17	18.9	20.9	1	1	27.6	21.8
SMBJ18A	SMBJ18CA	SMBJ18A	SMBJ18CA	18	20.0	22.1	1	1	29.2	20.6
SMBJ20A	SMBJ20CA	SMBJ20A	SMBJ20CA	20	22.2	24.5	1	1	32.4	18.6
SMBJ22A	SMBJ22CA	SMBJ22A	SMBJ22CA	22	24.4	26.9	1	1	35.5	16.9
SMBJ24A	SMBJ24CA	SMBJ24A	SMBJ24CA	24	26.7	29.5	1	1	38.9	15.4
SMBJ26A	SMBJ26CA	SMBJ26A	SMBJ26CA	26	28.9	31.9	1	1	42.1	14.3
SMBJ28A	SMBJ28CA	SMBJ28A	SMBJ28CA	28	31.1	34.4	1	1	45.4	13.2
SMBJ30A	SMBJ30CA	SMBJ30A	SMBJ30CA	30	33.3	36.8	1	1	48.4	12.4
SMBJ33A	SMBJ33CA	SMBJ33A	SMBJ33CA	33	36.7	40.6	1	1	53.3	11.3
SMBJ36A	SMBJ36CA	SMBJ36A	SMBJ36CA	36	40.0	44.2	1	1	58.1	10.4
SMBJ40A	SMBJ40CA	SMBJ40A	SMBJ40CA	40	44.4	49.1	1	1	64.5	9.3
SMBJ43A	SMBJ43CA	SMBJ43A	SMBJ43CA	43	47.8	52.8	1	1	69.4	8.7
SMBJ45A	SMBJ45CA	SMBJ45A	SMBJ45CA	45	50.0	55.3	1	1	72.7	8.3
SMBJ48A	SMBJ48CA	SMBJ48A	SMBJ48CA	48	53.3	58.9	1	1	77.4	7.8
SMBJ51A	SMBJ51CA	SMBJ51A	SMBJ51CA	51	56.7	62.7	1	1	82.4	7.3
SMBJ54A	SMBJ54CA	SMBJ54A	SMBJ54CA	54	60.0	66.3	1	1	87.1	6.9
SMBJ58A	SMBJ58CA	SMBJ58A	SMBJ58CA	58	64.4	71.2	1	1	93.6	6.4
SMBJ60A	SMBJ60CA	SMBJ60A	SMBJ60CA	60	66.7	73.7	1	1	96.8	6.2
SMBJ64A	SMBJ64CA	SMBJ64A	SMBJ64CA	64	71.1	78.6	1	1	103	5.8
SMBJ70A	SMBJ70CA	SMBJ70A	SMBJ70CA	70	77.8	86.0	1	1	113	5.3
SMBJ75A	SMBJ75CA	SMBJ75A	SMBJ75CA	75	83.3	92.1	1	1	121	5.0
SMBJ78A	SMBJ78CA	SMBJ78A	SMBJ78CA	78	86.7	95.8	1	1	126	4.8
SMBJ85A	SMBJ85CA	SMBJ85A	SMBJ85CA	85	94.4	104.0	1	1	137	4.4
SMBJ90A	SMBJ90CA	SMBJ90A	SMBJ90CA	90	100	111	1	1	146	4.1
SMBJ100A	SMBJ100CA	SMBJ100A	SMBJ100CA	100	111	123	1	1	162	3.7
SMBJ110A	SMBJ110CA	SMBJ110A	SMBJ110CA	110	122	135	1	1	177	3.4
SMBJ120A	SMBJ120CA	SMBJ120A	SMBJ120CA	120	133	147	1	1	193	3.1
SMBJ130A	SMBJ130CA	SMBJ130A	SMBJ130CA	130	144	159	1	1	209	2.9
SMBJ150A	SMBJ150CA	SMBJ150A	SMBJ150CA	150	167	185	1	1	243	2.5
SMBJ160A	SMBJ160CA	SMBJ160A	SMBJ160CA	160	178	197	1	1	259	2.3
SMBJ170A	SMBJ170CA	SMBJ170A	SMBJ170CA	170	189	209	1	1	275	2.2
SMBJ180A	SMBJ180CA	SMBJ180A	SMBJ180CA	180	201	222	1	1	292	2.1
SMBJ200A	SMBJ200CA	SMBJ200A	SMBJ200CA	200	224	247	1	1	324	1.9
SMBJ210A	SMBJ210CA	SMBJ210A	SMBJ210CA	210	233	258	1	1	337	1.8
SMBJ220A	SMBJ220CA	SMBJ220A	SMBJ220CA	220	246	272	1	1	356	1.7
SMBJ250A	SMBJ250CA	SMBJ250A	SMBJ250CA	250	279	309	1	1	405	1.5
SMBJ300A	SMBJ300CA	SMBJ300A	SMBJ300CA	300	335	371	1	1	486	1.3
SMBJ350A	SMBJ350CA	SMBJ350A	SMBJ350CA	350	391	432	1	1	567	1.1
SMBJ400A	SMBJ400CA	SMBJ400A	SMBJ400CA	400	447	494	1	1	648	0.9
SMBJ440A	SMBJ440CA	SMBJ440A	SMBJ440CA	440	492	543	1	1	713	0.8

Note:

1. Suffix "A" denotes 5% tolerance device.
2. Add suffix "CA" after part number to specify bi-directional devices.
3. The IR limit is double for bi-directional devices.



Rating and Characteristic Curves





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