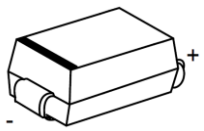
SSCTXXX1XDB Series

Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors

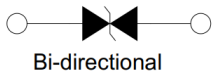
● Description

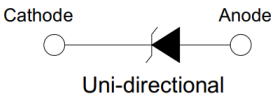
TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

● PIN configuration

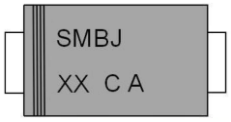


SMB/DO-214AA





Circuit Diagram



XX = Voltage
C = Bi-directional product
A = Uni-directional product

Marking(Top View)

● Features

- ✧ 600W peak pulse power (t_P = 10/1000μs)
- ✧ SMB/DO-214AA Package
- ✧ Working voltage:5-440V
- ✧ For surface mounted applications
- ✧ Reliable low cost construction utilizing molded plastic technique
- ✧ Response Time is Typically < 1 ns
- ✧ Uni-direction, less than 5.0ns for Bi-direction, form 0 Volts to BV min
- ✧ ESD Rating of above 16 kV per Human Body Model
- ✧ ESD Rating of above 30 kV (Contact Discharge) per IEC61000−4−2
- ✧ EFT (Electrical Fast Transients) Rating of 40 A per IEC61000−4−4
- ✧ ROHS compliant

● Applications

- ✧ Hand−Held Portable Applications
- ✧ Networking and Telecom(Ethernet 10/100/1000 Base T)
- ✧ Automotive Electronics
- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers

● Mechanical Characteristics

- ✧ Case Material: “Green” Molding Compound
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Moisture Sensitivity: Level 3 per J-STD-020

● Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Units
Peak Power Dissipation At T_j = 25℃, T_p = 1ms (Note 1,2)	P_{PP}	600	W
Peak Forward Surge Current 8.3ms single half sine-wave super	I_{FSM}	100	A
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-55 ~ 150	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Non-repetitive current pulse, per fig. 4 and derated above T_A= 25 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.Ratings at 25 ℃ ambient temperature unless otherwise specified.

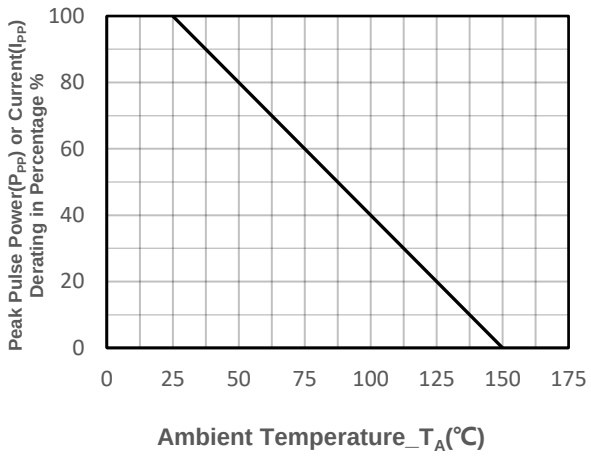
5.Single phase, half wave, 60Hz, resistive or inductive load.

● Electrical Characteristics @T_A=25℃

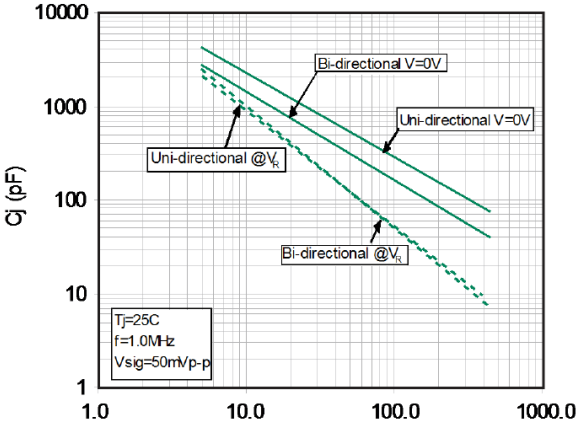
Part Number		Marking Code		V_{RWM}	V_{BR} @ I_T (V)		I_T	I_R @ V_{RWM}	V_C(Max)	I_{PP}(Max)
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
SSCT5V011DB	SSCT5V012DB	SMBJ5.0A	SMBJ5.0CA	5.0	6.38	7.35	10	800	9.2	65.3
SSCT6V011DB	SSCT6V012DB	SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.89	10	800	10.3	58.3
SSCT6V511DB	SSCT6V512DB	SMBJ6.5A	SMBJ6.5CA	6.5	7.22	8.30	10	500	11.2	53.6
SSCT7V011DB	SSCT7V012DB	SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.95	10	200	12.0	50.0
SSCT7V511DB	SSCT7V512DB	SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.58	1	100	12.9	46.5
SSCT8V011DB	SSCT8V012DB	SMBJ8.0A	SMBJ8.0CA	8.0	8.89	10.23	1	50	13.6	44.1
SSCT8V511DB	SSCT8V512DB	SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.82	1	20	14.4	41.7
SSCT9V011DB	SSCT9V012DB	SMBJ9.0A	SMBJ9.0CA	9.0	10.0	11.5	1	10	15.4	39.0
SSCT10V11DB	SSCT10V12DB	SMBJ10A	SMBJ10CA	10	11.1	12.8	1	5	17.0	35.3
SSCT11V11DB	SSCT11V12DB	SMBJ11A	SMBJ11CA	11	12.2	14.0	1	5	18.2	33.0
SSCT12V11DB	SSCT12V12DB	SMBJ12A	SMBJ12CA	12	13.3	15.3	1	5	19.9	30.2
SSCT13V11DB	SSCT13V12DB	SMBJ13A	SMBJ13CA	13	14.4	16.5	1	5	21.5	27.9
SSCT14V11DB	SSCT14V12DB	SMBJ14A	SMBJ14CA	14	15.6	17.9	1	5	23.2	25.9
SSCT15V11DB	SSCT15V12DB	SMBJ15A	SMBJ15CA	15	16.7	19.2	1	5	24.4	24.6
SSCT16V11DB	SSCT16V12DB	SMBJ16A	SMBJ16CA	16	17.8	20.5	1	5	26.0	23.1
SSCT17V11DB	SSCT17V12DB	SMBJ17A	SMBJ17CA	17	18.9	21.7	1	5	27.6	21.7
SSCT18V11DB	SSCT18V12DB	SMBJ18A	SMBJ18CA	18	20.0	23.3	1	5	29.2	20.5
SSCT20V11DB	SSCT20V12DB	SMBJ20A	SMBJ20CA	20	22.2	25.5	1	5	32.4	18.5
SSCT22V11DB	SSCT22V12DB	SMBJ22A	SMBJ22CA	22	24.4	28.0	1	5	35.5	16.9
SSCT24V11DB	SSCT24V12DB	SMBJ24A	SMBJ24CA	24	26.7	30.7	1	5	38.9	15.4
SSCT26V11DB	SSCT26V12DB	SMBJ26A	SMBJ26CA	26	28.9	33.2	1	5	42.1	14.3

SSCT28V11DB	SSCT28V12DB	SMBJ28A	SMBJ28CA	28	31.1	35.8	1	5	45.4	13.2
SSCT30V11DB	SSCT30V12DB	SMBJ30A	SMBJ30CA	30	33.3	38.3	1	5	48.4	12.4
SSCT33V11DB	SSCT33V12DB	SMBJ33A	SMBJ33CA	33	36.7	42.2	1	5	53.3	11.3
SSCT36V11DB	SSCT36V12DB	SMBJ36A	SMBJ36CA	36	40.0	46.0	1	5	58.1	10.3
SSCT40V11DB	SSCT40V12DB	SMBJ40A	SMBJ40CA	40	44.4	51.1	1	5	64.5	9.3
SSCT43V11DB	SSCT43V12DB	SMBJ43A	SMBJ43CA	43	47.8	54.9	1	5	69.4	8.6
SSCT45V11DB	SSCT45V12DB	SMBJ45A	SMBJ45CA	45	50.0	57.5	1	5	72.7	8.3
SSCT48V11DB	SSCT48V12DB	SMBJ48A	SMBJ48CA	48	53.3	61.3	1	5	77.4	7.8
SSCT51V11DB	SSCT51V12DB	SMBJ51A	SMBJ51CA	51	56.7	65.2	1	5	82.4	7.3
SSCT54V11DB	SSCT54V12DB	SMBJ54A	SMBJ54CA	54	60.0	69.0	1	5	87.1	6.9
SSCT58V11DB	SSCT58V12DB	SMBJ58A	SMBJ58CA	58	64.4	74.1	1	5	93.6	6.4
SSCT60V11DB	SSCT60V12DB	SMBJ60A	SMBJ60CA	60	66.7	76.7	1	5	96.8	6.2
SSCT64V11DB	SSCT64V12DB	SMBJ64A	SMBJ64CA	64	71.1	81.8	1	5	103	5.8
SSCT70V11DB	SSCT70V12DB	SMBJ70A	SMBJ70CA	70	77.8	89.5	1	5	113	5.3
SSCT75V11DB	SSCT75V12DB	SMBJ75A	SMBJ75CA	75	83.0	95.8	1	5	121	5.0
SSCT78V11DB	SSCT78V12DB	SMBJ78A	SMBJ78CA	78	86.0	99.7	1	5	126	4.8
SSCT85V11DB	SSCT85V12DB	SMBJ85A	SMBJ85CA	85	94.0	108.2	1	5	137	4.4
SSCT90V11DB	SSCT90V12DB	SMBJ90A	SMBJ90CA	90	100	115.5	1	5	146	4.1
SSCT10011DB	SSCT10012DB	SMBJ100A	SMBJ100CA	100	111	128.0	1	5	162	3.7
SSCT11011DB	SSCT11012DB	SMBJ110A	SMBJ110CA	110	122	140.5	1	5	177	3.4
SSCT12011DB	SSCT12012DB	SMBJ120A	SMBJ120CA	120	133	153.0	1	5	193	3.1
SSCT13011DB	SSCT13012DB	SMBJ130A	SMBJ130CA	130	144	165.5	1	5	209	2.9
SSCT15011DB	SSCT15012DB	SMBJ150A	SMBJ150CA	150	167	192.5	1	5	243	2.5
SSCT16011DB	SSCT16012DB	SMBJ160A	SMBJ160CA	160	178	205.0	1	5	259	2.3
SSCT17011DB	SSCT17012DB	SMBJ170A	SMBJ170CA	170	189	217.5	1	5	275	2.2
SSCT18011DB	SSCT18012DB	SMBJ180A	SMBJ180CA	180	200	230.4	1	5	290	2.1
SSCT19011DB	SSCT19012DB	SMBJ190A	SMBJ190CA	190	211	243.2	1	5	306	2.0
SSCT20011DB	SSCT20012DB	SMBJ200A	SMBJ200CA	200	222	256.0	1	5	322	1.9
SSCT21011DB	SSCT21012DB	SMBJ210A	SMBJ210CA	210	233	268.8	1	5	339	1.8
SSCT22011DB	SSCT22012DB	SMBJ220A	SMBJ220CA	220	244	281.6	1	5	355	1.7
SSCT25011DB	SSCT25012DB	SMBJ250A	SMBJ250CA	250	278	309.0	1	5	403	1.5
SSCT30011DB	SSCT30012DB	SMBJ300A	SMBJ300CA	300	333	371.0	1	5	484	1.2
SSCT35011DB	SSCT35012DB	SMBJ350A	SMBJ350CA	350	389	432.0	1	5	565	1.1
SSCT40011DB	SSCT40012DB	SMBJ400A	SMBJ400CA	400	444	494.0	1	5	645	0.9
SSCT44011DB	SSCT44012DB	SMBJ440A	SMBJ440CA	440	489	543.0	1	5	710	0.8

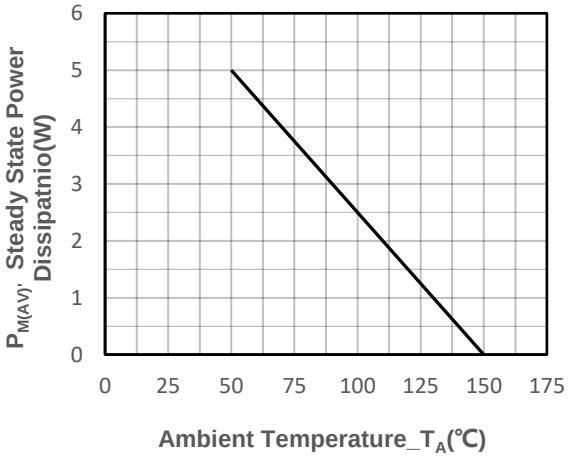
- **Typical Performance Characteristics(T_A=25℃ unless otherwise Specified)**



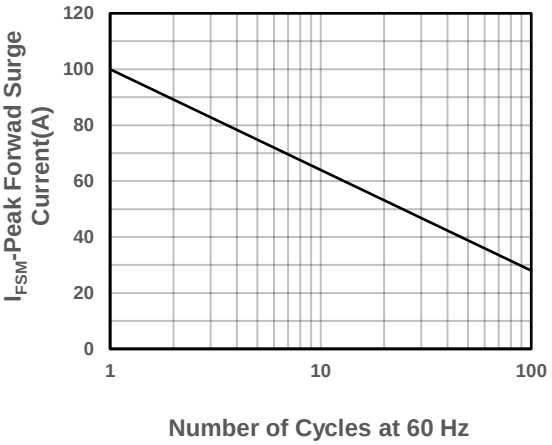
Pulse Derating Curve



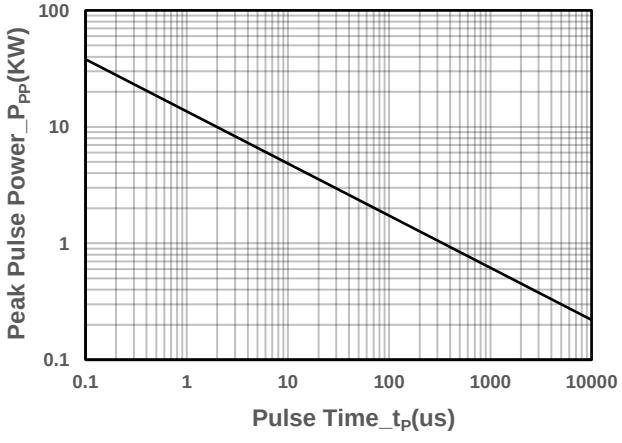
Typical Junction Capacitance



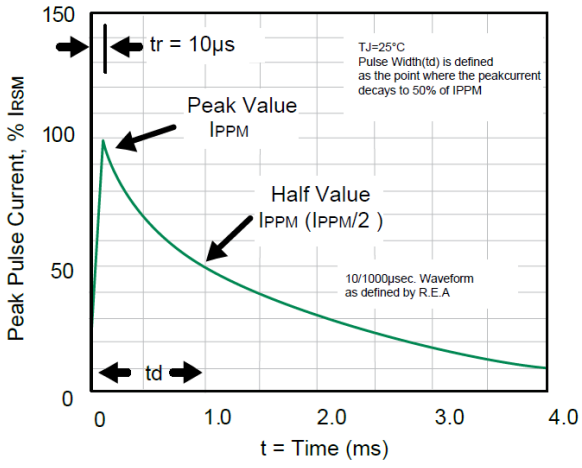
Steady State Power Dissipation Derating Curve



Peak Forward Surge Current



Peak Pulse Power vs. Pulse Time



Pulse Waveform

Package Information

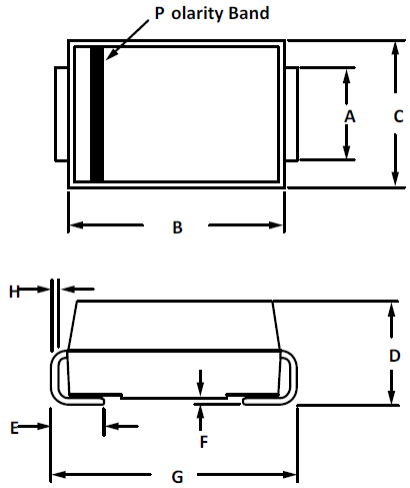
Ordering Information

Device	Package	Qty per Reel	Reel diameters(mm)
SSCTXXX1XDB	SMB/DO-214AA	3000	330

Mechanical Data

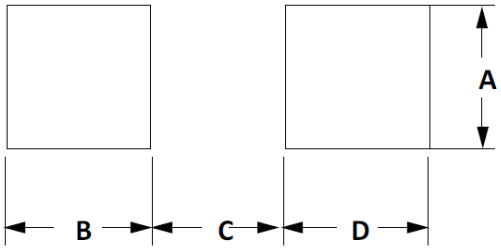
Case: SMB/DO-214AA

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	1.90	2.1
B	4.22	4.70
C	3.40	3.94
D	2.00	2.50
E	0.90	1.42
F	0.00	0.23
G	5.21	5.59
H	0.15	0.31

Suggested Land Pattern



DIM	Millimeters	
	Min	Max
A	2.15	-
B	1.45	-
C	-	2.55
D	1.45	-

- **History Version**

V3.0	Product datasheet	2020-07-21
V3.1	1. Correct product marking 2. Modify typical performance characteristics	2022-09-05

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