



SSCTXXX1XDA 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.

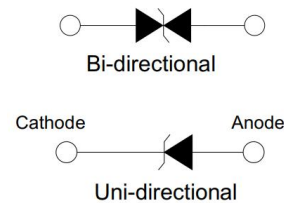
● PIN configuration



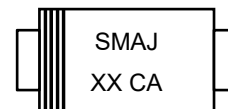
SMA/DO-214AC

● Features

- ✧ 400W peak pulse power ($t_P = 10/1000\mu s$)
- ✧ SMA/DO-214AC Package
- ✧ Working voltage: 5V-440V
- ✧ Glass passivated or planar junction
- ✧ Excellent clamping capability
- ✧ Repetition rate (duty cycle): 0.01%
- ✧ Low profile package and low inductance
- ✧ Fast response time: typically less than 1.0ps from 0V to VBR min
- ✧ High temperature soldering: 260°C/10s at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability 94V-0
- ✧ For surface mounted applications in order to optimize board space



Circuit Diagram



Marking (Top View)

XX = Voltage

CA = Bi-directional product

A = Uni-directional product

● Applications

- ✧ H I/O Interface.
- ✧ AC/DC Power supply
- ✧ Low frequency signal transmission line
- ✧ (RS232, RS485, etc.)

● Mechanical Characteristics

- ✧ Case Material: “Green” Molding Compound
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Polarity: Color band denotes cathode except bi-directional models
- ✧ Device meets MSL 3 requirements



● Absolute maximum rating @T_A=25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (10/1000μs)	P _{PP}	400	W
Storage Temperature	T _{STG}	-55/+150	°C
Operating Temperature	T _J	-55/+150	°C
Steady state power dissipation at TL=75°C	P _{M(AV)}	3.3	W
Maximum Instantaneous Forward Voltage at 30A for Unidirectional	V _F	5.0	V

● Electrical Characteristics @T_A=25°C

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)
SSCT5V011DA	SSCT5V012DA	SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.55	10	800	9.6	41.6
SSCT6V011DA	SSCT6V012DA	SMAJ6.0A	SMAJ6.0CA	6.0	6.67	8.45	10	800	11.4	35.1
SSCT6V511DA	SSCT6V512DA	SMAJ6.5A	SMAJ6.5CA	6.5	7.22	9.14	10	500	12.3	32.5
SSCT7V011DA	SSCT7V012DA	SMAJ7.0A	SMAJ7.0CA	7.0	7.78	9.86	10	200	13.3	30.1
SSCT7V511DA	SSCT7V512DA	SMAJ7.5A	SMAJ7.5CA	7.5	8.33	10.67	1	100	14.3	28
SSCT8V011DA	SSCT8V012DA	SMAJ8.0A	SMAJ8.0CA	8.0	8.89	11.3	1	50	15	26.5
SSCT8V511DA	SSCT8V512DA	SMAJ8.5A	SMAJ8.5CA	8.5	9.44	11.92	1	20	15.9	25.1
SSCT9V011DA	SSCT9V012DA	SMAJ9.0A	SMAJ9.0CA	9.0	10.0	12.6	1	10	16.9	23.6
SSCT10V11DA	SSCT10V12DA	SMAJ10A	SMAJ10CA	10	11.1	14.1	1	5	18.8	21.2
SSCT11V11DA	SSCT11V12DA	SMAJ11A	SMAJ11CA	11	12.2	15.4	1	1	20.1	20
SSCT12V11DA	SSCT12V12DA	SMAJ12A	SMAJ12CA	12	13.3	16.9	1	1	22	18.1
SSCT13V11DA	SSCT13V12DA	SMAJ13A	SMAJ13CA	13	14.4	18.2	1	1	23.8	16.8
SSCT14V11DA	SSCT14V12DA	SMAJ14A	SMAJ14CA	14	15.6	19.8	1	1	25.8	15.5
SSCT15V11DA	SSCT15V12DA	SMAJ15A	SMAJ15CA	15	16.7	21.1	1	1	26.9	14.8
SSCT16V11DA	SSCT16V12DA	SMAJ16A	SMAJ16CA	16	17.8	22.6	1	1	28.8	13.8
SSCT17V11DA	SSCT17V12DA	SMAJ17A	SMAJ17CA	17	18.9	23.9	1	1	30.5	13.1
SSCT18V11DA	SSCT18V12DA	SMAJ18A	SMAJ18CA	18	20.0	25.3	1	1	32.2	12.4
SSCT20V11DA	SSCT20V12DA	SMAJ20A	SMAJ20CA	20	22.2	28.1	1	1	35.8	11.1
SSCT22V11DA	SSCT22V12DA	SMAJ22A	SMAJ22CA	22	24.4	30.9	1	1	39.4	10.1
SSCT24V11DA	SSCT24V12DA	SMAJ24A	SMAJ24CA	24	26.7	33.8	1	1	43	9.3
SSCT26V11DA	SSCT26V12DA	SMAJ26A	SMAJ26CA	26	28.9	36.6	1	1	46.6	8.6
SSCT28V11DA	SSCT28V12DA	SMAJ28A	SMAJ28CA	28	31.1	39.4	1	1	50	8
SSCT30V11DA	SSCT30V12DA	SMAJ30A	SMAJ30CA	30	33.3	42.2	1	1	53.5	7.5
SSCT33V11DA	SSCT33V12DA	SMAJ33A	SMAJ33CA	33	36.7	46.5	1	1	59	6.8
SSCT36V11DA	SSCT36V12DA	SMAJ36A	SMAJ36CA	36	40.0	50.7	1	1	64.3	6.2
SSCT40V11DA	SSCT40V12DA	SMAJ40A	SMAJ40CA	40	44.4	56.3	1	1	71.4	5.6
SSCT43V11DA	SSCT43V12DA	SMAJ43A	SMAJ43CA	43	47.8	60.5	1	1	76.7	5.2
SSCT45V11DA	SSCT45V12DA	SMAJ45A	SMAJ45CA	45	50.0	63.3	1	1	80.3	5
SSCT48V11DA	SSCT48V12DA	SMAJ48A	SMAJ48CA	48	53.3	67.5	1	1	85.5	4.7
SSCT51V11DA	SSCT51V12DA	SMAJ51A	SMAJ51CA	51	56.7	71.8	1	1	91.1	4.4



SSCTXXX1XDA

Part Number		Marking Code		V_{RWM}	$V_{BR} @ I_T$ (V)		I_T	$I_R @ V_{RWM}$	$V_C(Max)$	$I_{PP}(Max)^{\textcircled{1}}$
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
SSCT54V11DA	SSCT54V12DA	SMAJ54A	SMAJ54CA	54	60.0	76	1	1	96.3	4.2
SSCT58V11DA	SSCT58V12DA	SMAJ58A	SMAJ58CA	58	64.4	81.6	1	1	103	3.9
SSCT60V11DA	SSCT60V12DA	SMAJ60A	SMAJ60CA	60	66.7	84.5	1	1	107	3.7
SSCT64V11DA	SSCT64V12DA	SMAJ64A	SMAJ64CA	64	71.1	90.1	1	1	114	3.5
SSCT70V11DA	SSCT70V12DA	SMAJ70A	SMAJ70CA	70	77.8	98.6	1	1	125	3.2
SSCT75V11DA	SSCT75V12DA	SMAJ75A	SMAJ75CA	75	83.0	105.7	1	1	134	3
SSCT78V11DA	SSCT78V12DA	SMAJ78A	SMAJ78CA	78	86.0	109.8	1	1	139	2.9
SSCT85V11DA	SSCT85V12DA	SMAJ85A	SMAJ85CA	85	94.0	119.2	1	1	151	2.6
SSCT90V11DA	SSCT90V12DA	SMAJ90A	SMAJ90CA	90	100	126.5	1	1	160	2.5
SSCT10011DA	SSCT10012DA	SMAJ100A	SMAJ100CA	100	111	141	1	1	179	2.2
SSCT11011DA	SSCT11012DA	SMAJ110A	SMAJ110CA	110	122	154.4	1	1	196	2
SSCT12011DA	SSCT12012DA	SMAJ120A	SMAJ120CA	120	133	169	1	1	214	1.9
SSCT13011DA	SSCT13012DA	SMAJ130A	SMAJ130CA	130	144	182.5	1	1	231	1.7
SSCT15011DA	SSCT15012DA	SMAJ150A	SMAJ150CA	150	167	211.5	1	1	268	1.5
SSCT16011DA	SSCT16012DA	SMAJ160A	SMAJ160CA	160	178	226	1	1	287	1.4
SSCT17011DA	SSCT17012DA	SMAJ170A	SMAJ170CA	170	189	239.5	1	1	304	1.3
SSCT18011DA	SSCT18012DA	SMAJ180A	SMAJ180CA	180	198	253.8	1	1	322	1.2
SSCT19011DA	SSCT19012DA	SMAJ190A	SMAJ190CA	190	209	267.9	1	1	340	1.2
SSCT20011DA	SSCT20012DA	SMAJ200A	SMAJ200CA	200	220	282	1	1	358	1.1
SSCT21011DA	SSCT21012DA	SMAJ210A	SMAJ210CA	210	231	296.1	1	1	376	1.1
SSCT22011DA	SSCT22012DA	SMAJ220A	SMAJ220CA	220	242	310.2	1	1	394	1
SSCT25011DA	SSCT25012DA	SMAJ250A	SMAJ250CA	250	279	309.0	1	1	405	0.99
SSCT30011DA	SSCT30012DA	SMAJ300A	SMAJ300CA	300	335	371.0	1	1	486	0.8
SSCT35011DA	SSCT35012DA	SMAJ350A	SMAJ350CA	350	391	432.0	1	1	567	0.7
SSCT40011DA	SSCT40012DA	SMAJ400A	SMAJ400CA	400	447	494.0	1	1	648	0.6
SSCT44011DA	SSCT44012DA	SMAJ440A	SMAJ440CA	440	492	543.0	1	1	713	0.57

① Surge waveform: 10/1000 μ s

V_R : Stand-off Voltage -- Maximum voltage that can be applied

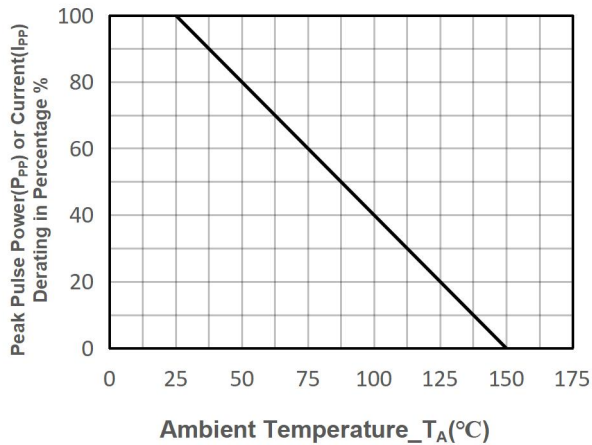
V_{BR} : Breakdown Voltage

V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

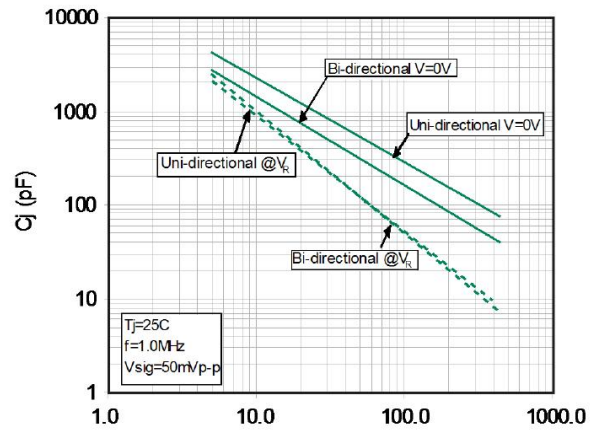
I_R : Reverse Leakage Current



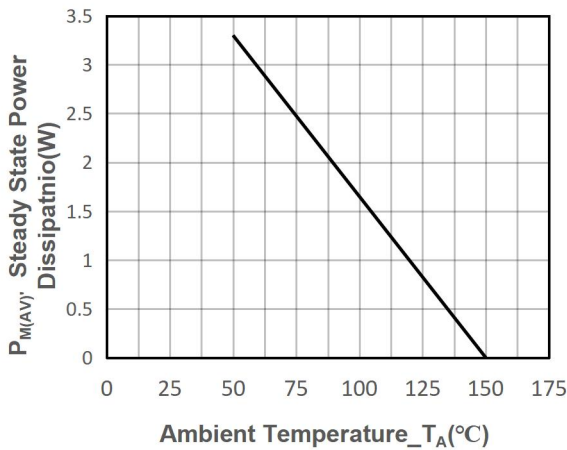
● Typical Performance Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



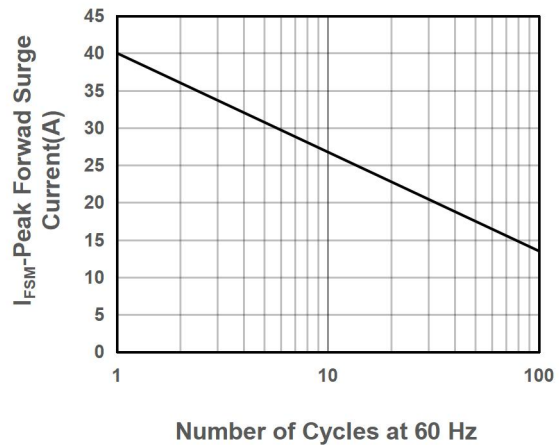
Pulse Derating Curve



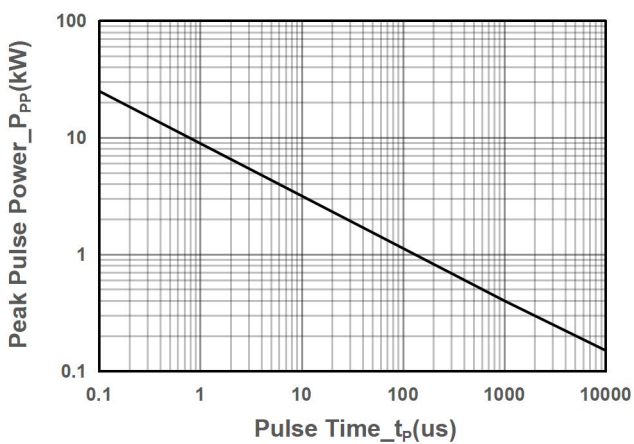
Typical Junction Capacitance



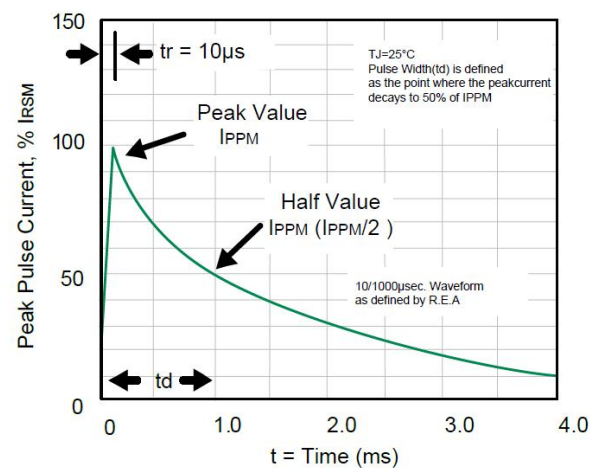
Steady State Power Dissipation Derating Curve



Peak Forward Surge Current



Peak Pulse Power vs. Pulse Time



Pulse Waveform

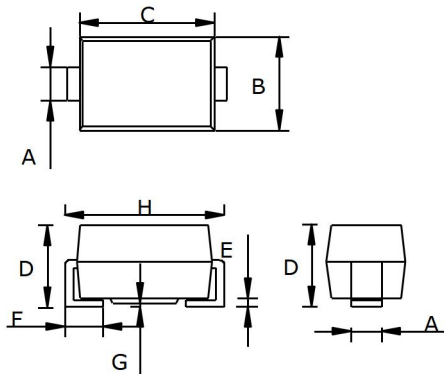


● Package Information

Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCTXXX1XDA	SMA/DO-214AC	5000	11 Inch

Mechanical Data



DIM	Millimeters		
	Min	Nom	Max
A	1.40	1.50	1.60
B	2.50	2.67	2.90
C	4.00	4.40	4.50
D	2.00	2.25	2.45
E	0.05	0.200	0.203
F	0.76	1.14	1.52
G	-	-	0.203
H	4.90	5.0	5.30

Recommended Pad outline





DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.