



SSCTXXX3XDC 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.

● Features

- ✧ 1500W peak pulse power ($t_P = 10/1000\mu s$)
- ✧ SMC/DO-214AB 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

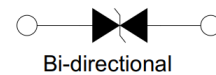
● Applications

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

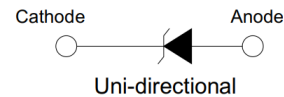
● PIN configuration



SMC/DO-214AB

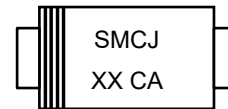


Bi-directional



Uni-directional

Circuit Diagram



Marking (Top View)

● Mechanical Characteristics

- ✧ Case Material: “Green” Molding Compound
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Polarity: Color band denotes cathode except bi-directional models
- ✧ Standard Packaging: 12mm tape (EIA STD RS-481)
- ✧ Moisture Sensitivity: Level 3 per J-STD-020



● Absolute maximum rating @T_A=25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (10/1000μs)	P _{PP}	1500	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)}	8.0	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)
SSCT5V031DC	SSCT5V032DC	SMCJ5.0A	SMCJ5.0CA	5.0	6.40	7.35	10	800	9.2	163
SSCT6V031DC	SSCT6V032DC	SMCJ6.0A	SMCJ6.0CA	6.0	6.67	7.89	10	800	10.3	145.7
SSCT6V531DC	SSCT6V532DC	SMCJ6.5A	SMCJ6.5CA	6.5	7.22	8.30	10	500	11.2	134
SSCT7V031DC	SSCT7V032DC	SMCJ7.0A	SMCJ7.0CA	7.0	7.78	8.95	10	200	12.0	125
SSCT7V531DC	SSCT7V532DC	SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.58	1	100	12.9	116.3
SSCT8V031DC	SSCT8V032DC	SMCJ8.0A	SMCJ8.0CA	8.0	8.89	10.23	1	50	13.6	110.3
SSCT8V531DC	SSCT8V532DC	SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.82	1	20	14.4	104.2
SSCT9V031DC	SSCT9V032DC	SMCJ9.0A	SMCJ9.0CA	9.0	10.0	11.5	1	5	15.4	97.4
SSCT10V31DC	SSCT10V32DC	SMCJ10A	SMCJ10CA	10	11.1	12.8	1	1	17.0	88.3
SSCT11V31DC	SSCT11V32DC	SMCJ11A	SMCJ11CA	11	12.2	14.0	1	1	18.2	82.5
SSCT12V31DC	SSCT12V32DC	SMCJ12A	SMCJ12CA	12	13.3	14.7	1	1	19.9	75.4
SSCT13V31DC	SSCT13V32DC	SMCJ13A	SMCJ13CA	13	14.4	15.9	1	1	21.5	69.8
SSCT14V31DC	SSCT14V32DC	SMCJ14A	SMCJ14CA	14	15.6	17.2	1	1	23.2	64.7
SSCT15V31DC	SSCT15V32DC	SMCJ15A	SMCJ15CA	15	16.7	18.5	1	1	24.4	61.5
SSCT16V31DC	SSCT16V32DC	SMCJ16A	SMCJ16CA	16	17.8	19.7	1	1	26.0	57.7
SSCT17V31DC	SSCT17V32DC	SMCJ17A	SMCJ17CA	17	18.9	20.9	1	1	27.6	54.4
SSCT18V31DC	SSCT18V32DC	SMCJ18A	SMCJ18CA	18	20.0	22.1	1	1	29.2	51.4
SSCT20V31DC	SSCT20V32DC	SMCJ20A	SMCJ20CA	20	22.2	24.5	1	1	32.4	46.3
SSCT22V31DC	SSCT22V32DC	SMCJ22A	SMCJ22CA	22	24.4	26.9	1	1	35.5	42.3
SSCT24V31DC	SSCT24V32DC	SMCJ24A	SMCJ24CA	24	26.7	29.5	1	1	38.9	38.6
SSCT26V31DC	SSCT26V32DC	SMCJ26A	SMCJ26CA	26	28.9	31.9	1	1	42.1	35.7
SSCT28V31DC	SSCT28V32DC	SMCJ28A	SMCJ28CA	28	31.1	34.4	1	1	45.4	33.1
SSCT30V31DC	SSCT30V32DC	SMCJ30A	SMCJ30CA	30	33.3	36.8	1	1	48.4	31
SSCT33V31DC	SSCT33V32DC	SMCJ33A	SMCJ33CA	33	36.7	40.6	1	1	53.3	28.2
SSCT36V31DC	SSCT36V32DC	SMCJ36A	SMCJ36CA	36	40.0	44.2	1	1	58.1	25.9
SSCT40V31DC	SSCT40V32DC	SMCJ40A	SMCJ40CA	40	44.4	49.1	1	1	64.5	23.3
SSCT43V31DC	SSCT43V32DC	SMCJ43A	SMCJ43CA	43	47.8	52.8	1	1	69.4	21.7
SSCT45V31DC	SSCT45V32DC	SMCJ45A	SMCJ45CA	45	50.0	55.3	1	1	72.7	20.6
SSCT48V31DC	SSCT48V32DC	SMCJ48A	SMCJ48CA	48	53.3	58.9	1	1	77.4	19.4
SSCT51V31DC	SSCT51V32DC	SMCJ51A	SMCJ51CA	51	56.7	62.7	1	1	82.4	18.2



SSCTXXX3XDC

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)	(μ A)	(V)	(A)
SSCT54V31DC	SSCT54V32DC	SMCJ54A	SMCJ54CA	54	60.0	66.3	1	1	87.1	17.3
SSCT58V31DC	SSCT58V32DC	SMCJ58A	SMCJ58CA	58	64.4	71.2	1	1	93.6	16.1
SSCT60V31DC	SSCT60V32DC	SMCJ60A	SMCJ60CA	60	66.7	73.7	1	1	96.8	15.5
SSCT64V31DC	SSCT64V32DC	SMCJ64A	SMCJ64CA	64	71.1	78.6	1	1	103	14.6
SSCT70V31DC	SSCT70V32DC	SMCJ70A	SMCJ70CA	70	77.8	86.0	1	1	113	13.3
SSCT75V31DC	SSCT75V32DC	SMCJ75A	SMCJ75CA	75	83.0	92.1	1	1	121	12.4
SSCT78V31DC	SSCT78V32DC	SMCJ78A	SMCJ78CA	78	86.0	95.8	1	1	126	11.9
SSCT85V31DC	SSCT85V32DC	SMCJ85A	SMCJ85CA	85	94.0	104.0	1	1	137	11
SSCT90V31DC	SSCT90V32DC	SMCJ90A	SMCJ90CA	90	100	110.0	1	1	146	10.3
SSCT10031DC	SSCT10032DC	SMCJ100A	SMCJ100CA	100	111	123.0	1	1	162	9.3
SSCT11031DC	SSCT11032DC	SMCJ110A	SMCJ110CA	110	122	135.0	1	1	177	8.5
SSCT12031DC	SSCT12032DC	SMCJ120A	SMCJ120CA	120	133	147.0	1	1	193	7.8
SSCT13031DC	SSCT13032DC	SMCJ130A	SMCJ130CA	130	144	159.0	1	1	209	7.2
SSCT15031DC	SSCT15032DC	SMCJ150A	SMCJ150CA	150	167	185.0	1	1	243	6.2
SSCT16031DC	SSCT16032DC	SMCJ160A	SMCJ160CA	160	178	197.0	1	1	259	5.8
SSCT17031DC	SSCT17032DC	SMCJ170A	SMCJ170CA	170	189	209.0	1	1	275	5.5
SSCT18031DC	SSCT18032DC	SMCJ180A	SMCJ180CA	180	201	222.0	1	1	292	5.1
SSCT19031DC	SSCT19032DC	SMCJ190A	SMCJ190CA	190	211	233.0	1	1	308	4.8
SSCT20031DC	SSCT20032DC	SMCJ200A	SMCJ200CA	200	224	247	1	1	324	4.6
SSCT21031DC	SSCT21032DC	SMCJ210A	SMCJ210CA	210	237	263	1	1	340	4.4
SSCT22031DC	SSCT22032DC	SMCJ220A	SMCJ220CA	220	246	272	1	1	356	4.2
SSCT25031DC	SSCT25032DC	SMCJ250A	SMCJ250CA	250	279	309	1	1	405	3.7
SSCT30031DC	SSCT30032DC	SMCJ300A	SMCJ300CA	300	335	371	1	1	486	3.1
SSCT35031DC	SSCT35032DC	SMCJ350A	SMCJ350CA	350	391	432	1	1	567	2.6
SSCT40031DC	SSCT40032DC	SMCJ400A	SMCJ400CA	400	447	494	1	1	648	2.3
SSCT44031DC	SSCT44032DC	SMCJ440A	SMCJ440CA	440	492	543	1	1	713	2.1

① Surge waveform: 10/1000 μ s

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

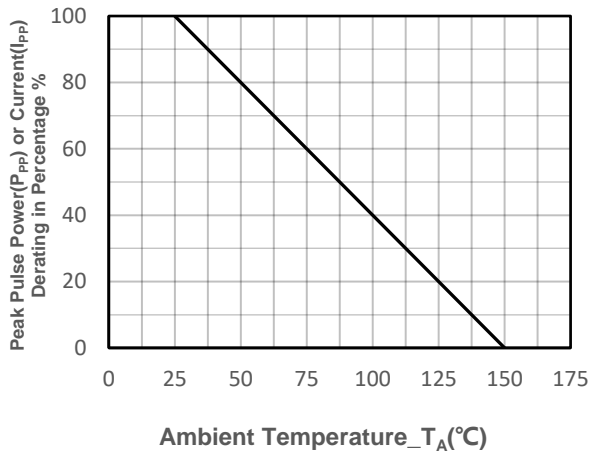
V_{BR} : Breakdown Voltage

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

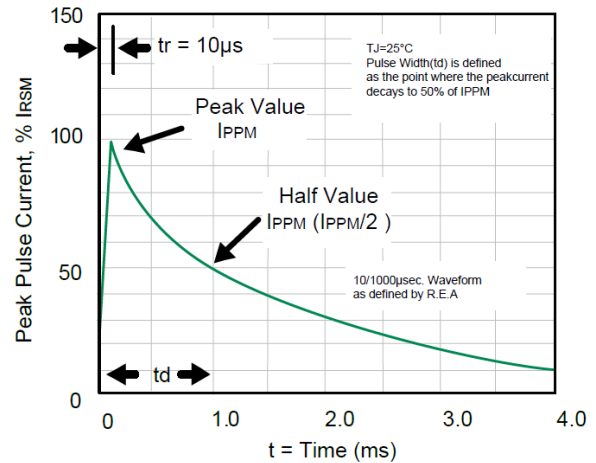
I_R : Reverse Leakage Current



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



Pulse Derating Curve



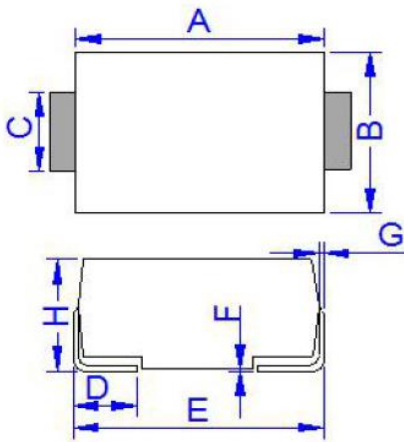
Pulse Waveform

● **Package Information**

Ordering Information

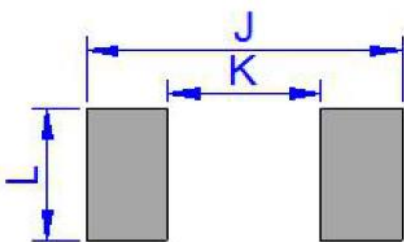
Device	Package	Qty per Reel	Reel Size
SSCTXXX1XDC	SMC/DO-214AB	3000	13 Inch

Mechanical Data



DMI	Millimeters	
	Min	Max
A	6.60	7.11
B	5.59	6.20
C	2.75	3.20
D	0.76	1.52
E	7.71	8.13
F	0.051	0.023
G	0.15	0.31
H	2.06	2.62

Recommended Pad outline



DMI	Millimeters	
	Min	Max
J	8.12	
K		4.69
L	3.07	



DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AF SEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE 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.