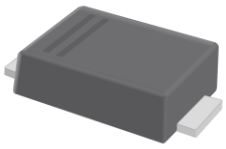
SSCTXXX3XD1 Series

Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors

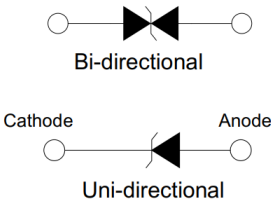
● Description

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



SMF/SOD-123FL



Circuit Diagram

Marking (Top View)

● Features

- ✧ 200W peak pulse power (t_P = 10/1000μs)
- ✧ SMF/SOD-123FL Package
- ✧ Working voltage: 5V-190V
- ✧ 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℃/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
- ✧ DVI & HDMI Port Protection
- ✧ AC/DC Power supply
- ✧ Mobile Handsets
- ✧ Digital Cameras and camcorders
- ✧ Low frequency signal transmission line (RS232, RS485, etc.)
- ✧ Digital TV and Set-top Boxes

● Mechanical Characteristics

- ✧ Case Material: “Green” Molding Compound
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Polarity: Color band denotes cathode except bi-directional models
- ✧ Weight: 0.017g
- ✧ Moisture Sensitivity: Level 3 per J-STD-020

- **Absolute maximum rating @T_A=25℃**

Parameter	Symbol	Value	Units
Peak Pulse Power（10/1000μs）	P_{PP}	200	W
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+150	℃
Steady state power dissipation at TL=75℃	$P_{M(AV)}$	2.8	W
Maximum Instantaneous Forward Voltage at 30A for Unidirectional	V_F	5.0	V

- **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)①
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
SSCT5V031D1	SSCT5V032D1	5.0A	5.0CA	5.0	6.40	7.00	10	400	9.2	21.70
SSCT6V031D1	SSCT6V032D1	6.0A	6.0CA	6.0	6.67	7.37	10	400	10.3	19.40
SSCT6V531D1	SSCT6V532D1	6.5A	6.5CA	6.5	7.22	7.98	10	250	11.2	17.90
SSCT7V031D1	SSCT7V032D1	7.0A	7.0CA	7.0	7.78	8.60	10	100	12.0	16.70
SSCT7V531D1	SSCT7V532D1	7.5A	7.5CA	7.5	8.33	9.21	1	50	12.9	15.50
SSCT8V031D1	SSCT8V032D1	8.0A	8.0CA	8.0	8.89	9.83	1	25	13.6	14.70
SSCT8V531D1	SSCT8V532D1	8.5A	8.5CA	8.5	9.44	10.40	1	10	14.4	13.90
SSCT9V031D1	SSCT9V032D1	9.0A	9.0CA	9.0	10.00	11.10	1	5	15.4	13.00
SSCT10V31D1	SSCT10V32D1	10A	10CA	10.0	11.10	12.30	1	2.5	17.0	11.80
SSCT11V31D1	SSCT11V32D1	11A	11CA	11.0	12.20	13.50	1	2.5	18.2	11.00
SSCT12V31D1	SSCT12V32D1	12A	12CA	12.0	13.30	14.70	1	2.5	18.9	10.10
SSCT13V31D1	SSCT13V32D1	13A	13CA	13.0	14.40	15.90	1	1	21.5	9.30
SSCT14V31D1	SSCT14V32D1	14A	14CA	14.0	15.60	17.20	1	1	23.2	8.6
SSCT15V31D1	SSCT15V32D1	15A	15CA	15.0	16.70	18.50	1	1	24.4	8.2
SSCT16V31D1	SSCT16V32D1	16A	16CA	16.0	17.80	19.70	1	1	26.0	7.7
SSCT17V31D1	SSCT17V32D1	17A	17CA	17.0	18.90	20.90	1	1	27.6	7.2
SSCT18V31D1	SSCT18V32D1	18A	18CA	18.0	20.00	22.10	1	1	29.2	6.8
SSCT20V31D1	SSCT20V32D1	20A	20CA	20.0	22.20	24.50	1	1	32.4	6.2
SSCT22V31D1	SSCT22V32D1	22A	22CA	22.0	24.40	26.90	1	1	35.5	5.6
SSCT24V31D1	SSCT24V32D1	24A	24CA	24.0	26.70	29.50	1	1	38.9	5.1
SSCT26V31D1	SSCT26V32D1	26A	26CA	26.0	28.90	31.90	1	1	42.1	4.8
SSCT28V31D1	SSCT28V32D1	28A	28CA	28.0	31.10	34.40	1	1	45.4	4.4
SSCT30V31D1	SSCT30V32D1	30A	30CA	30.0	33.30	36.80	1	1	48.4	4.1
SSCT33V31D1	SSCT33V32D1	33A	33CA	33.0	36.70	40.60	1	1	53.3	3.8
SSCT36V31D1	SSCT36V32D1	36A	36CA	36.0	40.00	44.20	1	1	58.1	3.4
SSCT40V31D1	SSCT40V32D1	40A	40CA	40.0	44.40	49.10	1	1	64.5	3.1
SSCT43V31D1	SSCT43V32D1	43A	43CA	43.0	47.80	52.80	1	1	69.4	2.9
SSCT45V31D1	SSCT45V32D1	45A	45CA	45.0	50.00	55.30	1	1	72.7	2.8

Part Number		Marking Code		V_{RWM}	V_{BR} @ I_T (V)		I_T	I_R @ V_{RWM}	V_C(Max)	I_{PP}(Max)①
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
SSCT48V31D1	SSCT48V32D1	48A	48CA	48.0	53.30	58.90	1	1	77.4	2.6
SSCT51V31D1	SSCT51V32D1	51A	51CA	51.0	56.70	62.70	1	1	82.4	2.4
SSCT54V31D1	SSCT54V32D1	54A	54CA	54.0	60.00	66.30	1	1	87.1	2.3
SSCT58V31D1	SSCT58V32D1	58A	58CA	58.0	64.40	71.20	1	1	93.6	2.1
SSCT60V31D1	SSCT60V32D1	60A	60CA	60.0	66.70	73.70	1	1	96.8	1.8
SSCT64V31D1	SSCT64V32D1	64A	64CA	64.0	71.10	78.60	1	1	103.0	1.7
SSCT70V31D1	SSCT70V32D1	70A	70CA	70.0	77.80	86.00	1	1	113.0	1.5
SSCT75V31D1	SSCT75V32D1	75A	75CA	75.0	83.30	92.10	1	1	121.0	1.4
SSCT78V31D1	SSCT78V32D1	78A	78CA	78.0	86.70	95.80	1	1	126.0	3.2
SSCT85V31D1	SSCT85V32D1	85A	85CA	85.0	94.40	104.0	1	1	137.0	2.9
SSCT90V31D1	SSCT90V32D1	90A	90CA	90.0	100.0	111.0	1	1	146.0	2.8
SSCT10031D1	SSCT10032D1	100A	100CA	100.0	111.0	123.0	1	1	162.0	2.5
SSCT11031D1	SSCT11032D1	110A	110CA	110.0	122.0	135.0	1	1	177.0	2.3
SSCT12031D1	SSCT12032D1	120A	120CA	120.0	133.0	147.0	1	1	193.0	2.1
SSCT13031D1	SSCT13032D1	130A	130CA	130.0	144.0	159.0	1	1	209.0	1.9
SSCT15031D1	SSCT15032D1	150A	150CA	150.0	167.0	185.0	1	1	243.0	1.7
SSCT16031D1	SSCT16032D1	160A	160CA	160.0	178.0	197.0	1	1	259.0	1.6
SSCT17031D1	SSCT17032D1	170A	170CA	170.0	189.0	209.0	1	1	275.0	1.5
SSCT18031D1	SSCT18032D1	180A	180CA	180.0	201.1	222.0	1	1	292.0	1.4
SSCT19031D1	SSCT19032D1	190A	190CA	190.0	211.0	243.0	1	1	308.0	1.3

① Surge waveform: 10/1000μs

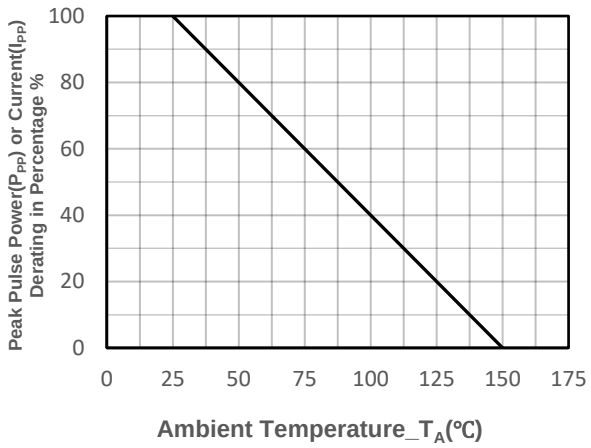
V_R ： Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}： Breakdown Voltage

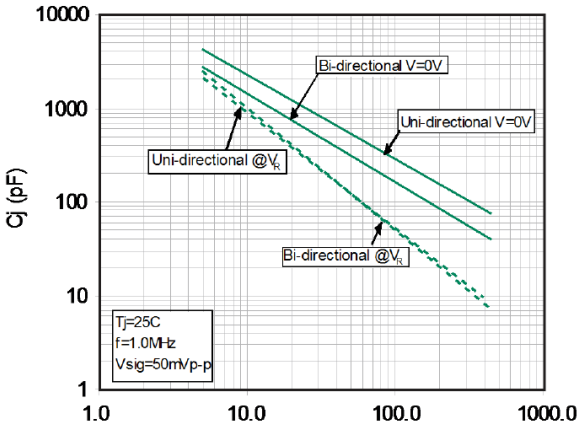
V_C：Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R： Reverse Leakage Current

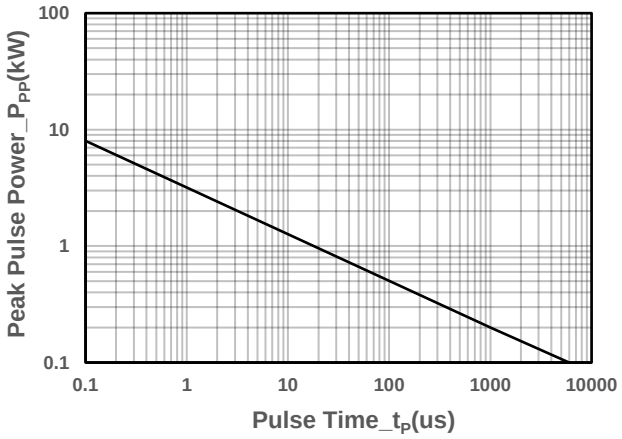
Typical Performance Characteristics(T_A=25℃ unless otherwise Specified)



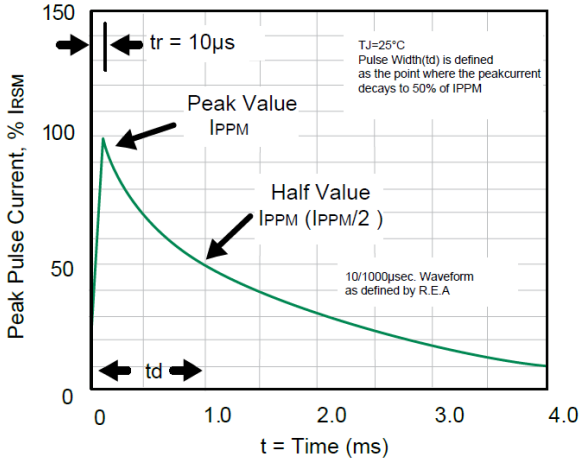
Pulse Derating Curve



Typical Junction Capacitance



Peak Pulse Power vs. Pulse Time



Pulse Waveform

● Package Information

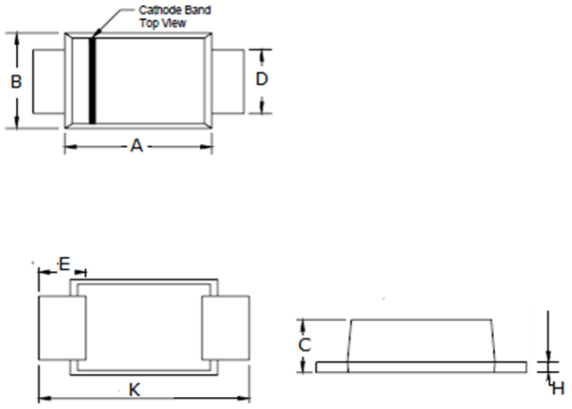
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCTXXX3XD1	SMF/SOD-123FL	3000	7 Inch

Mechanical Data

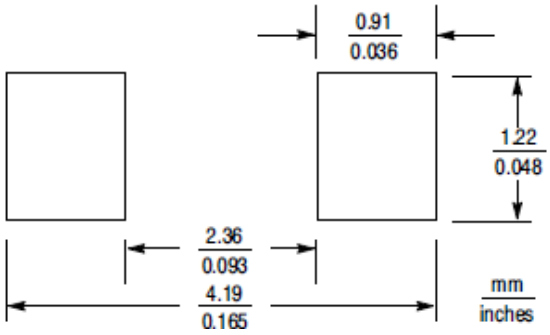
Case: SOD-123FL

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	2.50	2.90
B	1.50	1.90
C	0.095	1.20
D	0.70	1.20
E	0.35	0.85
H	0	0.1
K	3.40	3.90

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 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.