



SSCTXXX4XD1 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.

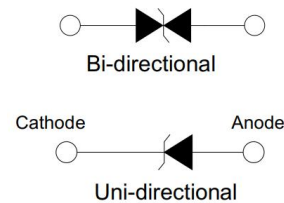
● PIN configuration



SMF/SOD-123FL

● Features

- ✧ 400W peak pulse power ($t_p = 10/1000\mu s$)
- ✧ SMF/SOD-123FL Package
- ✧ Working voltage: 3.3V-58V
- ✧ 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)

● 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
- ✧ Device meets MSL 3 requirements



SSCTXXX4XD1

● 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
Maximum Instantaneous Forward Voltage at 30A for Unidirectional	V _F	6.5	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)
SSCT3V341D1	SSCT3V342D1	EHD	ETD	3.3	4.10	4.75	10	400	7.3	54.7
SSCT5V041D1	SSCT5V042D1	EHE	ETE	5.0	6.40	7.00	10	400	9.2	43.5
SSCT6V041D1	SSCT6V042D1	EHG	ETG	6.0	6.67	7.37	10	400	10.3	38.8
SSCT6V541D1	SSCT6V542D1	EHK	ETK	6.5	7.22	7.98	10	250	11.2	35.7
SSCT7V041D1	SSCT7V042D1	EHM	ETM	7.0	7.78	8.60	10	100	12.0	33.3
SSCT7V541D1	SSCT7V542D1	EHP	ETP	7.5	8.33	9.21	1	50	12.9	31.0
SSCT8V041D1	SSCT8V042D1	EHR	ETR	8.0	8.89	9.83	1	25	13.6	29.4
SSCT8V541D1	SSCT8V542D1	EHT	ETT	8.5	9.44	10.40	1	10	14.4	27.8
SSCT9V041D1	SSCT9V042D1	EHV	ETV	9.0	10.00	11.10	1	5	15.4	26.0
SSCT10V41D1	SSCT10V42D1	EHX	ETX	10.0	11.10	12.30	1	2.5	17.0	23.5
SSCT11V41D1	SSCT11V42D1	EHZ	ETZ	11.0	12.20	13.50	1	2.5	18.2	22.0
SSCT12V41D1	SSCT12V42D1	EIE	EUE	12.0	13.30	14.70	1	2.5	18.9	20.1
SSCT13V41D1	SSCT13V42D1	EIG	EUG	13.0	14.40	15.90	1	1	21.5	18.6
SSCT14V41D1	SSCT14V42D1	EIK	EUK	14.0	15.60	17.20	1	1	23.2	17.2
SSCT15V41D1	SSCT15V42D1	EIM	EUM	15.0	16.70	18.50	1	1	24.4	16.4
SSCT16V41D1	SSCT16V42D1	EIP	EUP	16.0	17.80	19.70	1	1	26.0	15.4
SSCT17V41D1	SSCT17V42D1	EIR	EUR	17.0	18.90	20.90	1	1	27.6	14.5
SSCT18V41D1	SSCT18V42D1	EIT	EUT	18.0	20.00	22.10	1	1	29.2	13.7
SSCT20V41D1	SSCT20V42D1	EIV	EUV	20.0	22.20	24.50	1	1	32.4	12.3
SSCT22V41D1	SSCT22V42D1	EIX	EUX	22.0	24.40	26.90	1	1	35.5	11.3
SSCT24V41D1	SSCT24V42D1	EIZ	EUZ	24.0	26.70	29.50	1	1	38.9	10.3
SSCT26V41D1	SSCT26V42D1	EJE	EVE	26.0	28.90	31.90	1	1	42.1	9.5
SSCT28V41D1	SSCT28V42D1	EJG	EVG	28.0	31.10	34.40	1	1	45.4	8.8
SSCT30V41D1	SSCT30V42D1	EJK	EVK	30.0	33.30	36.80	1	1	48.4	8.3
SSCT33V41D1	SSCT33V42D1	EJM	EVM	33.0	36.70	40.60	1	1	53.3	7.5
SSCT36V41D1	SSCT36V42D1	EJP	EVP	36.0	40.00	44.20	1	1	58.1	6.9
SSCT40V41D1	SSCT40V42D1	EJR	EVR	40.0	44.40	49.10	1	1	64.5	6.2
SSCT43V41D1	SSCT43V42D1	EJT	EVT	43.0	47.80	52.80	1	1	69.4	5.8
SSCT45V41D1	SSCT45V42D1	EJV	EVV	45.0	50.00	55.30	1	1	72.7	5.5
SSCT48V41D1	SSCT48V42D1	EJX	EVX	48.0	53.30	58.90	1	1	77.4	5.2
SSCT51V41D1	SSCT51V42D1	EJZ	EVZ	51.0	56.70	62.7	1	1	82.4	4.9



SSCTXXX4XD1

Part Number		Marking Code		V_{RWM}	$V_{BR} @ I_T$ (V)		I_T	$I_R @ V_{RWM}$	$V_C(Max)$	$I_{PP}(Max)^{\circ}$
Uni-polar	Bi-polar	Uni	Bi	(V)	Min	Max	(mA)	(uA)	(V)	(A)
SSCT54V41D1	SSCT54V42D1	ERE	EWE	54.0	60.0	66.3	1	1	87.1	4.6
SSCT58V41D1	SSCT58V42D1	ERG	EWG	58.0	64.4	71.2	1	1	93.6	4.3

① Surge waveform: 10/1000 μ s

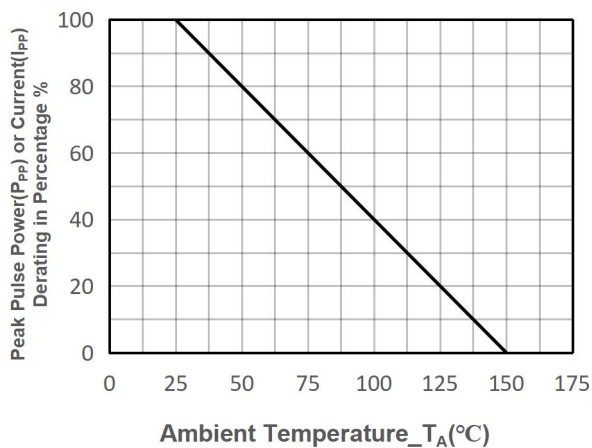
V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown Voltage

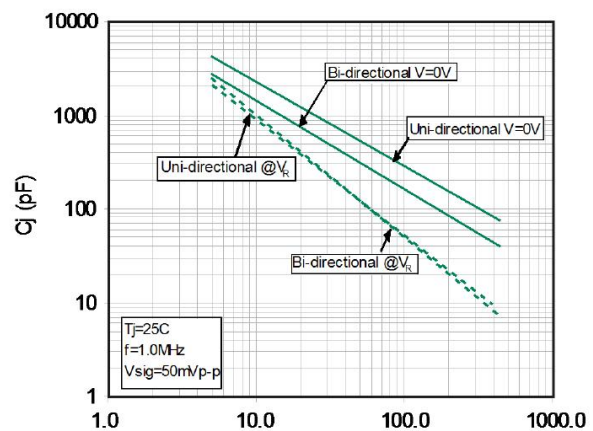
V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse Leakage Current

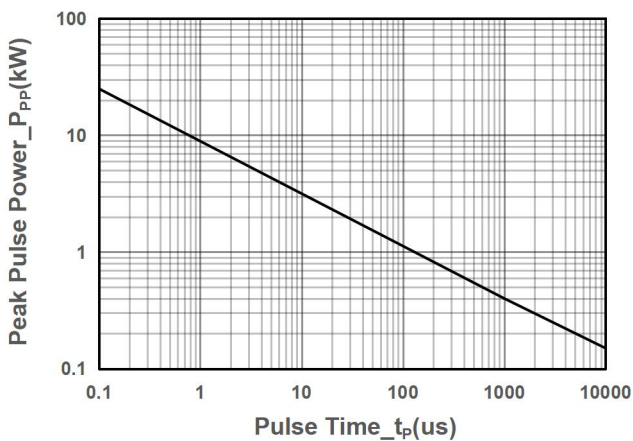
● Typical Performance Characteristics($T_A=25^{\circ}C$ unless otherwise Specified)



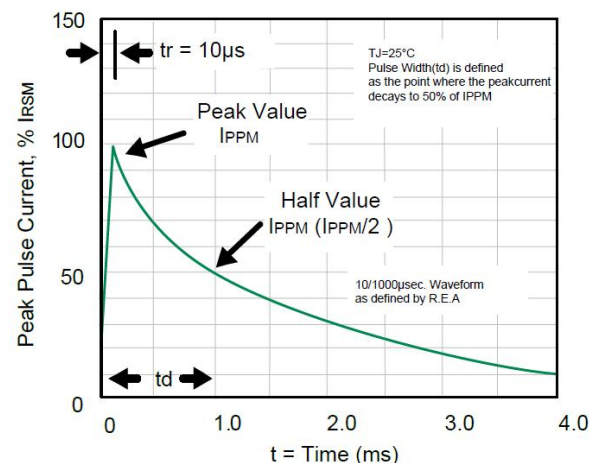
Pulse Derating Curve



Typical Junction Capacitance



Peak Pulse Power vs. Pulse Time



Pulse Waveform



● Package Information

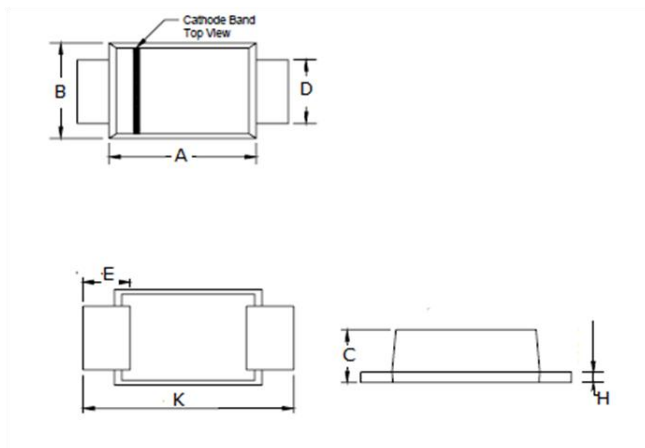
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCTXXX4XD1	SMF/SOD-123FL	3000	7 Inch

Mechanical Data

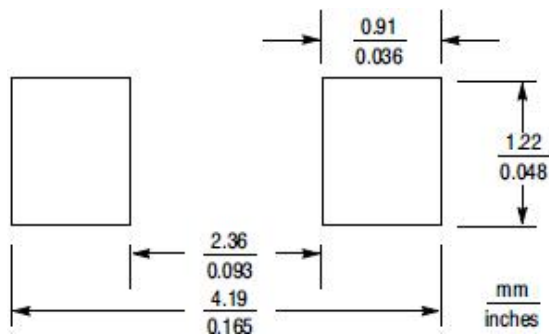
Case: SOD-123FL

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 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.