



## SSCTXXX2XD1

4500W Transient Voltage Suppressor

### ● 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.

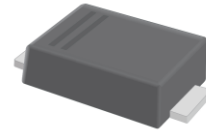
### ● Features

- ✧ 4500W peak pulse power ( $T_P = 8/20\mu s$ )
- ✧ Working voltage: 5-28V
- ✧ 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.
- ✧ For surface mounted applications in order to optimize.

### ● Applications

- ✧ computer system
- ✧ domestic appliance
- ✧ video input
- ✧ Digital TV and Set-top Boxes

### ● PIN configuration



**SMF/SOD-123FL**



Bi-directional



Un-directional

**Circuit Diagram**



**Marking (Top View)**

### ● Mechanical Characteristics

- ✧ Package: SMF/SOD-123FL
- ✧ Case Material: "Green" Molding Compound.
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Moisture Sensitivity: Meet MSL 1
- ✧ Polarity: Color band denotes cathode except bi-directional models
- ✧ Weight: 0.017g



# SSCTXXX2XD1

## ● Absolute maximum rating @T<sub>A</sub>=25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (8/20μs)	P <sub>PP</sub>	4500	W
ESD Rating per IEC61000-4-2: Contact Air	V <sub>ESD</sub>	±30 ±30	kV
Storage Temperature	T <sub>STG</sub>	-55/+150	°C
Operating Temperature	T <sub>J</sub>	-55/+150	°C

## ● Electrical Characteristics @T<sub>A</sub>=25°C

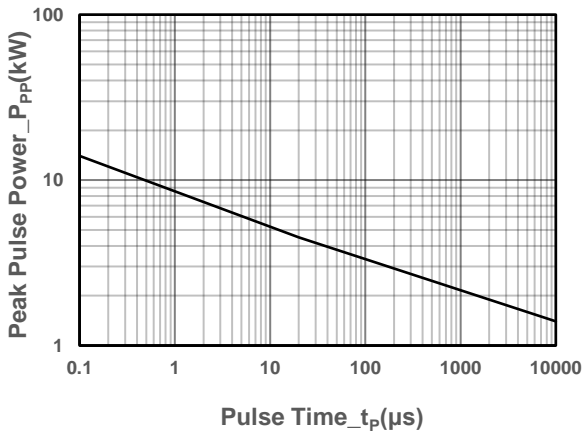
Part Number	Directional	Marking	V <sub>R</sub>	I <sub>R</sub> @V <sub>R</sub>	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub>	V <sub>C</sub> @I <sub>PP</sub>	I <sub>PP</sub> <sup>①</sup>	C <sub>O</sub> <sup>②</sup>
			(V)	μA	Min(V)	Max(V)	mA	Max(V)	A	Max(pF)
SSCT5V021D1	Uni.	EHE	5	300	6.4	7.0	10	15.0	220	1400
SSCT5V022D1	Bi.	ETE	5	300	6.4	7.0	10	15.0	220	1000
SSCT6V021D1	Uni.	EHG	6	100	6.7	7.4	10	16.0	220	1400
SSCT6V022D1	Bi.	ETG	6	100	6.7	7.4	10	16.0	220	1000
SSCT6V521D1	Uni.	EHK	6.5	50	7.2	8.0	10	16.0	200	1400
SSCT6V522D1	Bi.	ETK	6.5	50	7.2	8.0	10	16.0	200	1000
SSCT7V021D1	Uni.	EHM	7	50	7.7	8.6	10	17.0	220	1400
SSCT7V022D1	Bi.	ETM	7	50	7.7	8.6	10	17.0	220	1000
SSCT9V021D1	Uni.	EHV	9	2	10.0	11.1	1	20.0	200	1400
SSCT9V022D1	Bi.	ETV	9	2	10.0	11.1	1	20.0	200	1000
SSCT12V21D1	Uni.	EIE	12	1	13.3	14.7	1	24.0	200	1200
SSCT12V22D1	Bi.	EUE	12	1	13.3	14.7	1	24.0	190	600
SSCT15V21D1	Uni.	EIM	15	1	16.7	18.5	1	26.0	220	1000
SSCT15V22D1	Bi.	EUM	15	1	16.7	18.5	1	26.0	180	500
SSCT18V21D1	Uni.	EIT	18	1	20.0	22.1	1	30.0	160	700
SSCT18V22D1	Bi.	EUT	18	1	20.0	22.1	1	30.0	160	500
SSCT20V21D1	Uni.	EIV	20	1	22.2	24.5	1	35.0	160	700
SSCT20V22D1	Bi.	EUV	20	1	22.2	24.5	1	35.0	160	500
SSCT24V21D1	Uni.	EIZ	24	1	26.7	29.5	1	40.0	200	700
SSCT24V22D1	Bi.	EUZ	24	1	26.7	29.5	1	40.0	200	500
SSCT26V21D1	Uni.	EJE	26	1	28.9	31.9	1	44.0	130	1000
SSCT26V22D1	Bi.	EVE	26	1	28.9	31.9	1	44.0	130	1000
SSCT28V21D1	Uni.	EJG	28	1	31.1	34.4	1	48.0	120	960
SSCT28V22D1	Bi.	EVG	28	1	31.1	34.4	1	48.0	120	960

Notes:

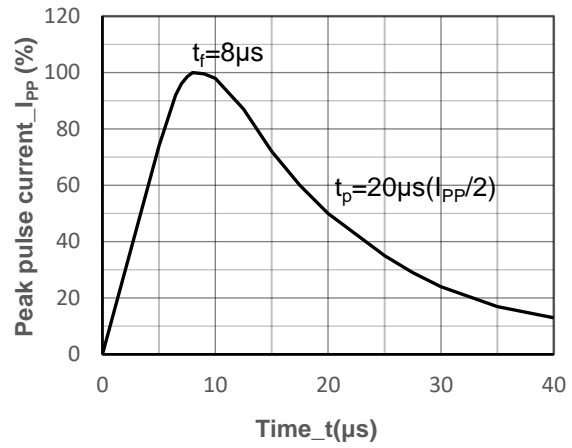
- ① Surge waveform: 8/20μs
  - ② Off-state capacitance (C<sub>O</sub>) is measured at 1 MHz with a 0 V bias and is typical value
- V<sub>R</sub> : Stand-off Voltage -- Maximum voltage that can be applied  
V<sub>BR</sub>: Breakdown Voltage  
V<sub>C</sub>: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I<sub>PP</sub>  
I<sub>R</sub>: Reverse Leakage Current



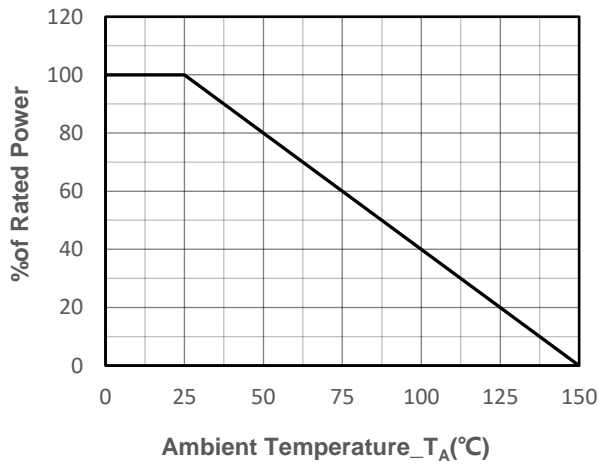
● Typical Performance Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



Peak Pulse Power vs. Pulse Time



8/20  $\mu\text{s}$  Pulse Waveform



Power derating vs. Ambient temperature



## ● Package Information

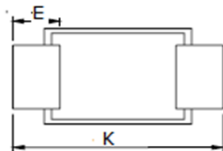
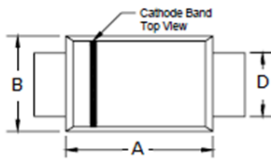
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCTXXX2XD1	SMF/SOD-123FL	3000	7 Inch

### Mechanical Data

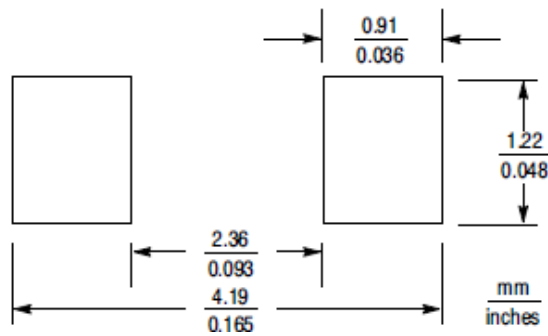
Case: SMF/SOD-123FL

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 (Unit: mm)





- **History Version**

V1.0	First edition	2021-03-12
V1.1	Add 5V 6V 6.5V 9V series products	2023-04-25

## 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.