



SSCT24V12D1

Small Surface Mount TVS Diode for ESD Protection

● Description

The SSCT24V12D1 is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 30kV ESD pulses using the IEC 61000-4-2 air discharge method, which can meet the requirement of level 4.

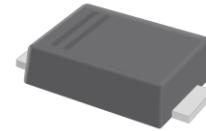
● Features

- ✧ 6000W peak pulse power ($t_P = 8/20\mu s$)
- ✧ SOD-123FL Package
- ✧ Working voltage: 24V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Complies with following standards:
- ✧ -IEC61000-4-2(ESD) $\pm 30kV$ (contact), $\pm 30kV$ (air)
- ✧ -IEC61000-4-4(EFT) 90A(5/50ns)
- ✧ -IEC61000-4-5(Lightning) 250A(8/20 μs)
- ✧ RoHS Compliant

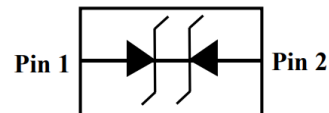
● Mechanical Characteristics

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 μm

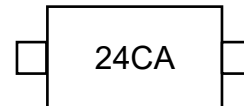
● PIN configuration



SOD-123FL



Circuit Diagram



Marking (Top View)

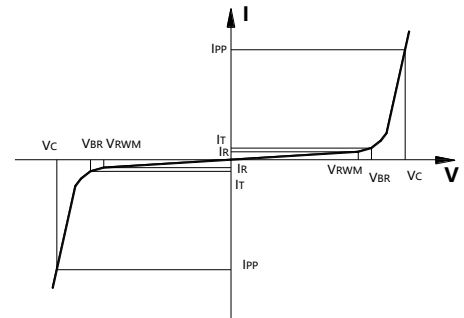
● Applications

- ✧ USB 2.0 Power & Data Line Protection
- ✧ DVI & HDMI Port Protection
- ✧ Serial ATA Port Protection
- ✧ Mobile Handsets
- ✧ Digital Cameras and camcorders
- ✧ PDA & MP3 Players
- ✧ Digital TV and Set-top Boxes



● Electronic Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance



● Absolute maximum rating @ $T_A=25^{\circ}\text{C}$

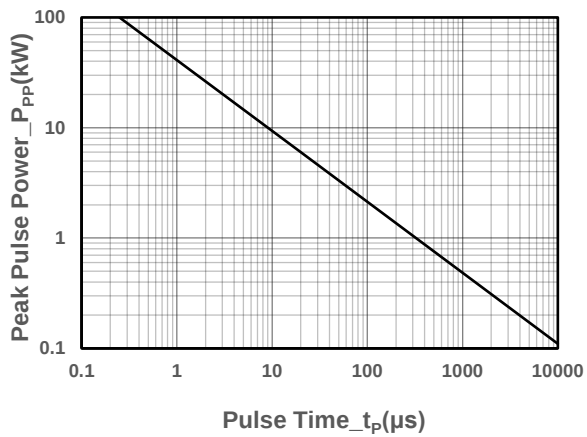
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 μs)	P_{PP}	6000	W
Peak Pulse Current (8/20 μs)	I_{PP}	250	A
ESD Rating per IEC61000-4-2: Contact Air	V_{ESD}	± 30 ± 30	kV
Storage Temperature	T_{STG}	-55/+150	$^{\circ}\text{C}$
Operating Temperature	T_J	-55/+150	$^{\circ}\text{C}$

● Electrical Characteristics @ $T_A=25^{\circ}\text{C}$

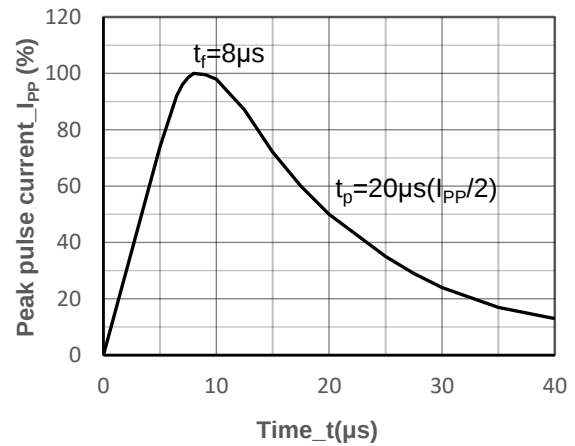
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26.5		30	V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 250\text{A}$, $t_P = 8/20\mu\text{s}$		30	34	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		300		pF



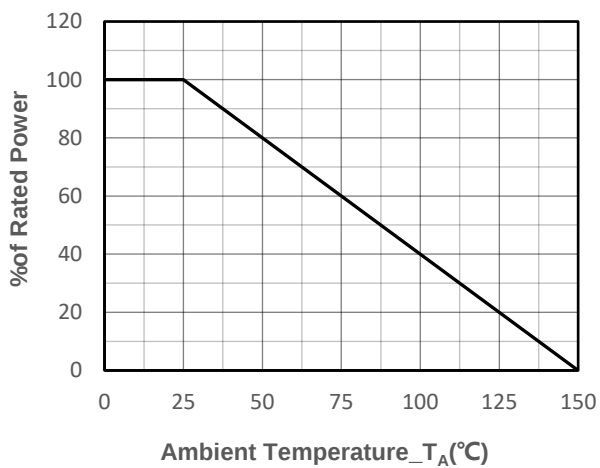
- Typical Performance Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



Peak Pulse Power vs. Pulse Time



8/20 μs Pulse Waveform



Power derating vs. Ambient temperature



SSCT24V12D1

● Package Information

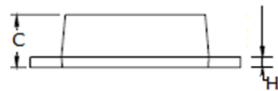
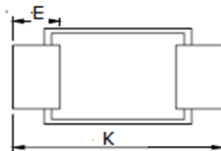
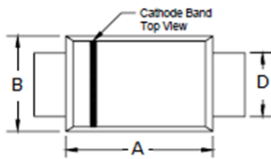
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V12D1	SOD-123FL	3000	7 Inch

Mechanical Data

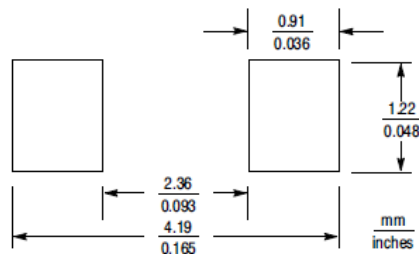
Case: SOD-123FL

Case Material: Molded Plastic. UL Flammability

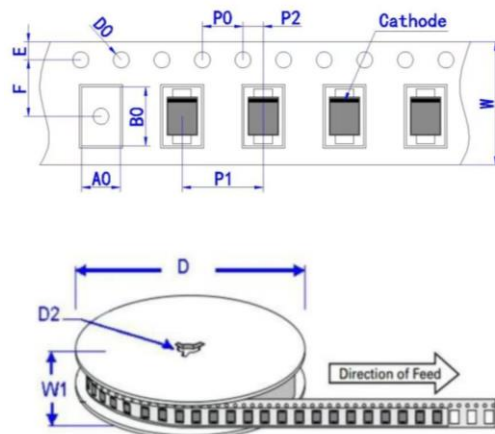


Dim	Millimeters	
	Min	Max
A	2.50	2.90
B	1.50	1.90
C	0.95	1.20
D	0.70	1.20
E	0.35	0.85
H	0	0.1
K	3.40	3.90

Recommended Pad outline (Unit: mm)



SOD-123FL Reel Dim



Ref.	Millimeters
A0	2.15±0.20
B0	3.95±0.20
C	178.00
D0	1.55±0.10
E	1.75±0.20
E1	13.50±1.00
F	3.50±0.10
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
W	8.00±0.30
W1	9.00±4.00



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