SSCT24V12D1

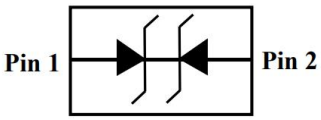
Small Surface Mount TVS Diode for ESD Protection

Description

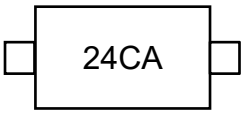
The SSCT24V12D1 is low capacitance transient voltage suppressor array for high speed data interface that designed to protect sensitive electronics from damage or latch-up due to ESD lightning, and other voltage induced transient events. All pins are rated to withstand 30kV ESD pulses using the IEC 61000-4-2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

PIN configuration

SOD-123FL



Circuit Diagram



Marking (Top View)

Features

- 9500W peak pulse power (t_P = 8/20μs)
- SOD-123FL Package
- Working voltage: 24V
- Low clamping voltage
- Low capacitance
- Complies with following standards:
- -IEC61000-4-2(ESD) ±30kV(contact), ±30kV(air)
- -IEC61000-4-4(EFT) 90A(5/50ns)
- -IEC61000-4-5(Lightning) 250A(8/20μs)

Mechanical Characteristics

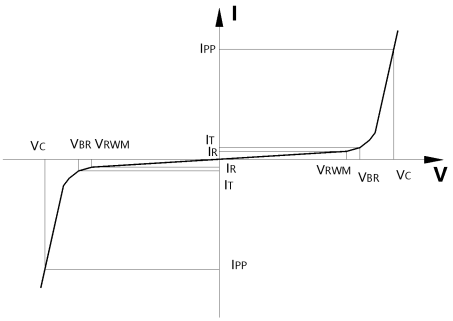
- Lead finish:100% matte Sn (Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 3 requirements
- Pure tin plating: 7 ~ 17 um

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



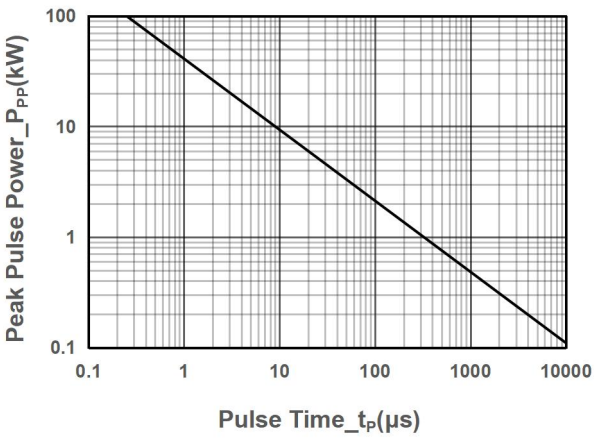
Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Units
Peak Pulse Power（8/20μs）	P_{PP}	9500	W
Peak Pulse Current（8/20μs）	I_{PP}	250	A
ESD Rating per IEC61000-4-2: Contact Air	V_{ESD}	±30 ±30	kV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+150	℃

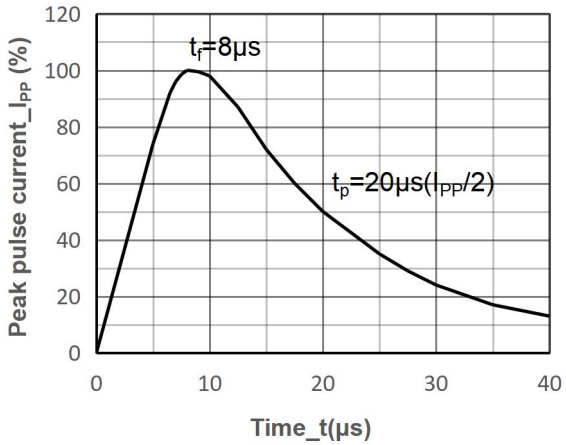
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	I_T = 1mA	26.5		30	V
Reverse Leakage Current	I_R	V_{RWM} = 24V			1	μA
Clamping Voltage	V_C	I_{PP} = 250A, t_P = 8/20μs		33	38	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		300		pF

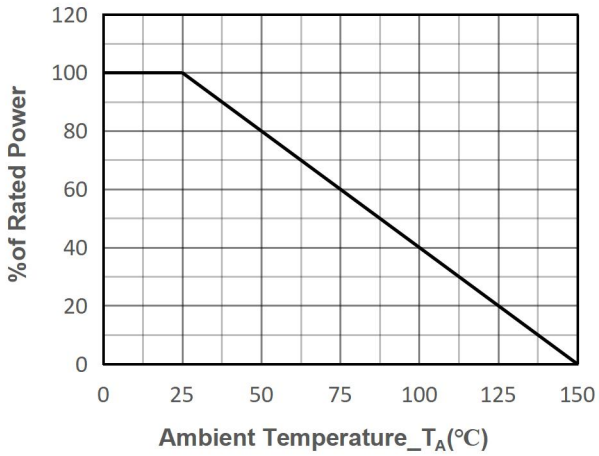
- **Typical Performance Characteristics(T_A=25℃ unless otherwise Specified)**



Peak Pulse Power vs. Pulse Time



8/20μs Pulse Waveform



Power derating vs. Ambient temperature

Package Information

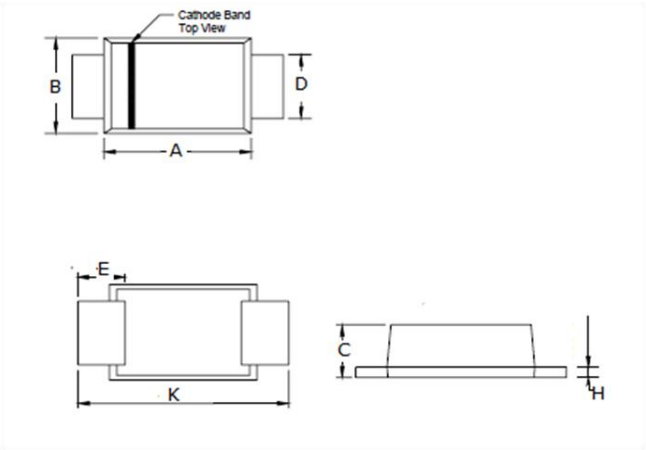
Ordering Information

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

Mechanical Data

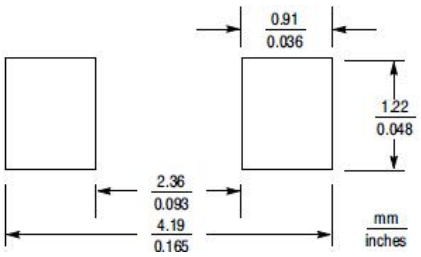
Case: SOD-123FL

Case Material: Molded Plastic. UL Flammability

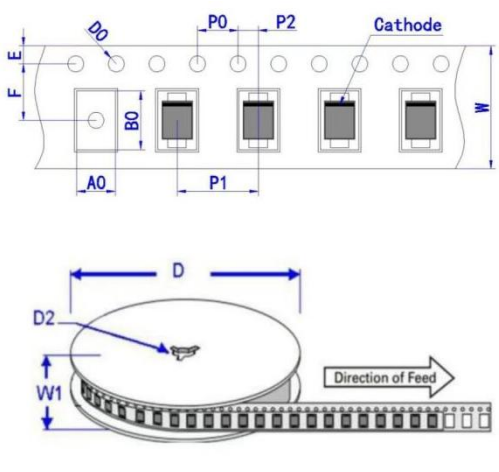


Dim	Millimeters	
	Min	Max
A	2.50	2.90
B	1.50	1.90
C	0.95	1.20
D	0.70	1.20
E	0.35	0.85
H	0	0.1
K	3.40	3.90

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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