



SSCT9V021D1

Small Surface Mount TVS Diode for ESD Protection

● Description

The SSCT9V021D1 is 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.

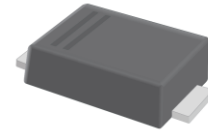
● Features

- ✧ 4500W peak pulse power ($t_P = 8/20\mu s$)
- ✧ SOD-123FL Package
- ✧ Working voltage:9V
- ✧ Low clamping voltage
- ✧ Low profile package and low inductance
- Complies
- ✧ -IEC61000-4-2(ESD) $\pm 30kV$ (contact), $\pm 30kV$ (air)
- ✧ -IEC61000-4-5(Lightning) 200A(8/20 μs)
- ✧ RoHS Compliant

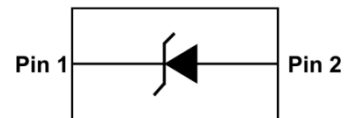
● Applications

- ✧ Computer system
- ✧ Domestic appliance
- ✧ Video input
- ✧ For surface mounted applications

● PIN configuration



SOD-123FL



Circuit Diagram



Marking (Top View)

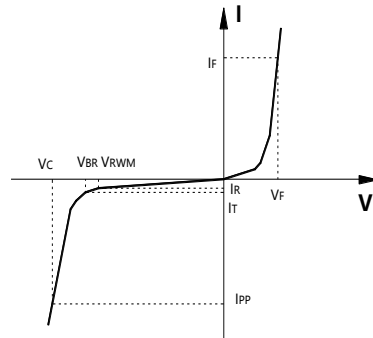
● Mechanical Characteristics

- ✧ Lead finish:100% matte Sn (Tin)
- ✧ RoHS compliant
- ✧ Case Material: "Green" Molding Compound
- ✧ Qualified max reflow temperature:260℃
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 μm
- ✧ Pin flatness: $\leq 3mil$



- **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 @ $T_A=25^{\circ}\text{C}$**

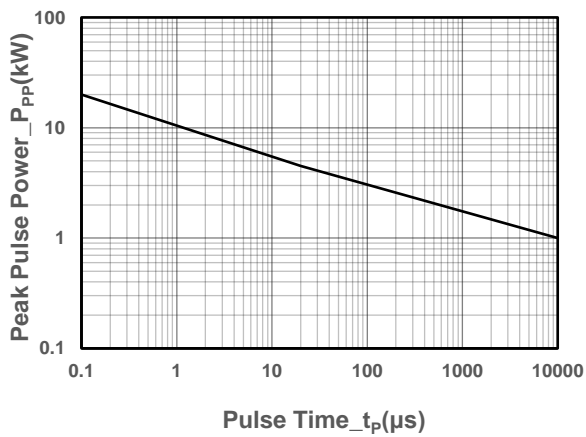
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 μs)	P_{PP}	4500	W
Peak Pulse Current (8/20 μs)	I_{PP}	200	A
ESD Rating per IEC61000-4-2: Contact Air	V_{ESD}	± 30 ± 30	kV
Storage Temperature	T_{STG}	-55/+150	$^{\circ}\text{C}$
Operating Temperature	T_J	-55/+150	$^{\circ}\text{C}$

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

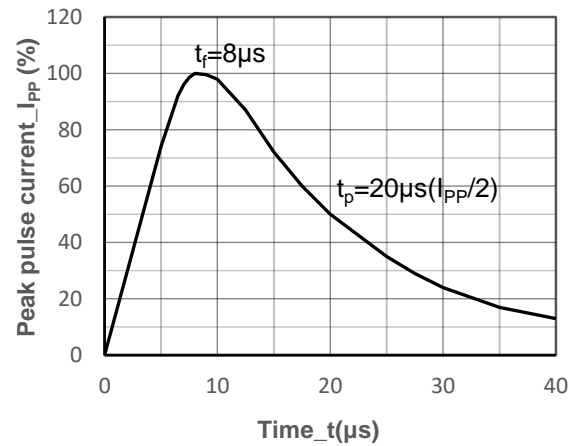
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				9	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	10		11.1	V
Reverse Leakage Current	I_R	$V_{RWM} = 9\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 200\text{A}$, $t_P = 8/20\mu\text{s}$			20	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			1400	pF



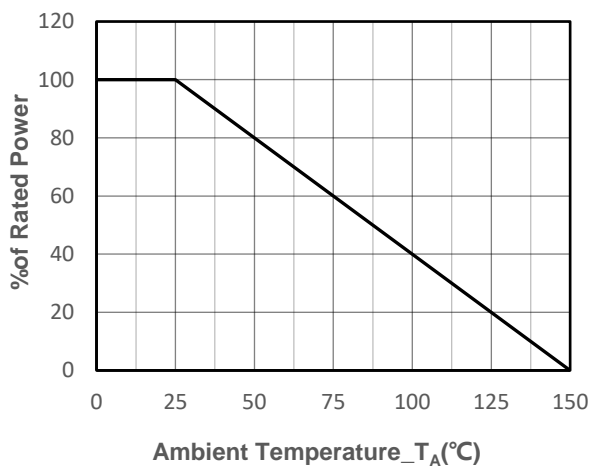
- Typical Performance Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



Peak Pulse Power vs. Pulse Time



8/20 μs Pulse Waveform



Power derating vs. Ambient Temperature



● Package Information

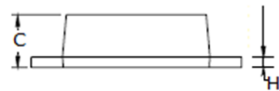
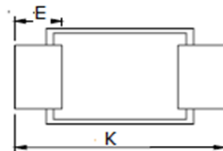
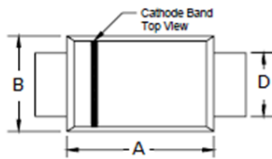
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT9V021D1	SOD-123FL	3000	7 Inch

Mechanical Data

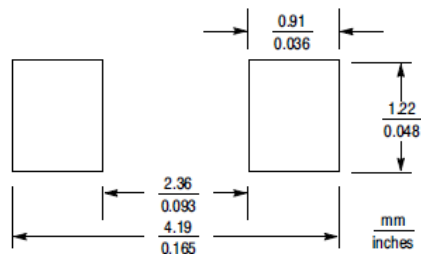
Case: SOD-123FL

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)





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.