



SSCT4V511L2

High Power TVS Diode

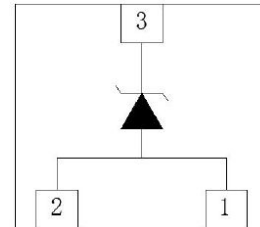
● Description

The SSCT4V511L2 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The SSCT4V511L2 complies with the IEC 610002 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a 3pin DFN2020-3 package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multimedia card interfaces.

● Feature

- ◇ 5000W peak pulse power (TP = 8/20 μs)
- ◇ DFN2020-3Package
- ◇ Working voltage: 4.5V
- ◇ Low clamping voltage
- ◇ Low capacitance
- ◇ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)

● PIN configuration



Top view



Marking

● Applications

- ◇ DVI & HDMI Port Protection
- ◇ Serial and Parallel Ports
- ◇ Projection TV
- ◇ Notebooks, Desktops, Server
- ◇ USB 1.1/2.0/3.0/3.1/OTG

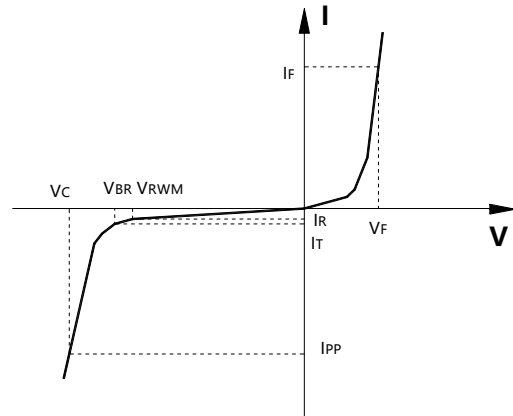
● Mechanical data

- ◇ Lead finish: 100% matte Sn(Tin)
- ◇ Mounting position: Any
- ◇ Qualified max reflow temperature: 260°C
- ◇ Device meets MSL 1 requirements
- ◇ Pure tin plating: 7 ~ 17 μm



● 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	Junction Capacitance



● Absolute maximum rating @TA=25°C

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ S)	5000	W
I_{PP}	Peak Pulse Current (8/20 μ S)	280	A
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+125	°C

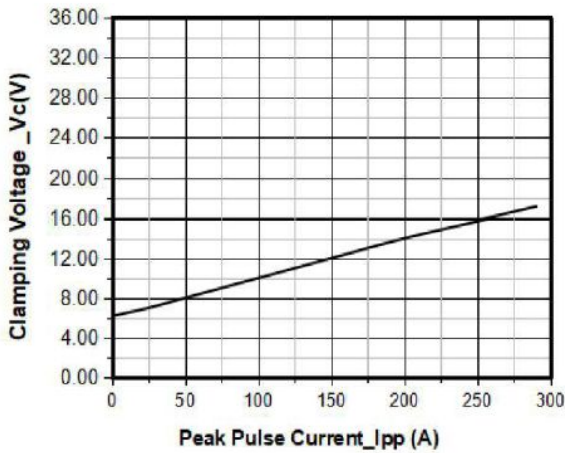
● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground			4.5	V
Breakdown Voltage	V_{BR}	$I_t = 1\text{mA}$ Any I/O to Ground	4.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 4.5\text{V}$, $T = 25^\circ\text{C}$			2.0	μA
Clamping Voltage	V_C	$I_{PP} = 50\text{A}$, $t_P = 8/20\mu\text{s}$			10	V
Clamping Voltage	V_C	$I_{PP} = 280\text{A}$, $t_P = 8/20\mu\text{s}$			18	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to Ground		420		pF

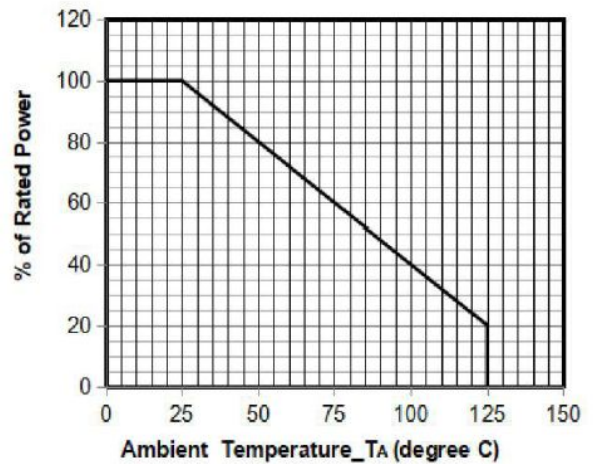


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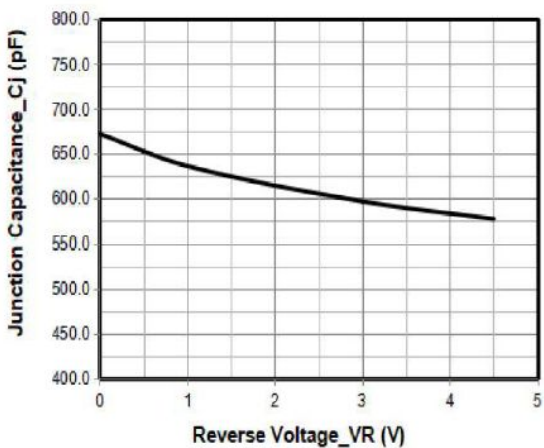
● Typical Performance Characteristics



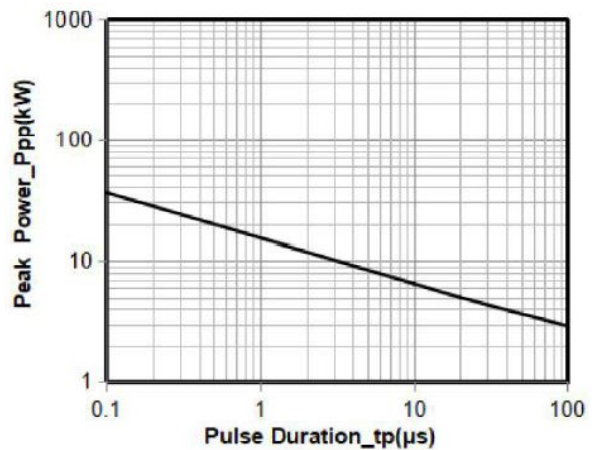
Clamping Voltage vs. Peak Pulse Current



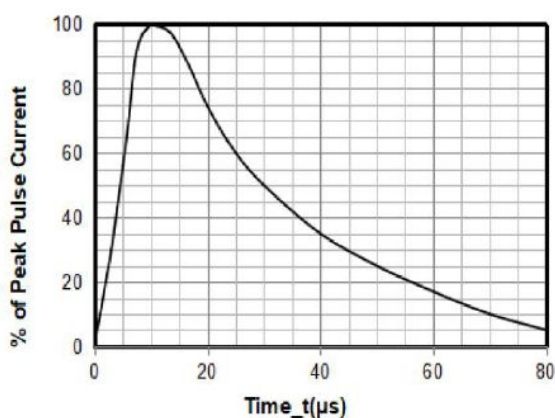
Power Derating Curve



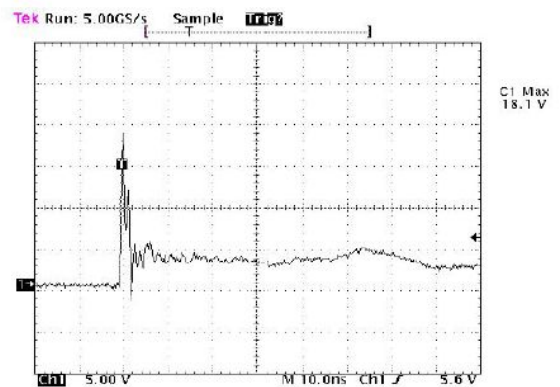
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time



8 X 20μs Pulse Waveform



Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



- **Package Information**

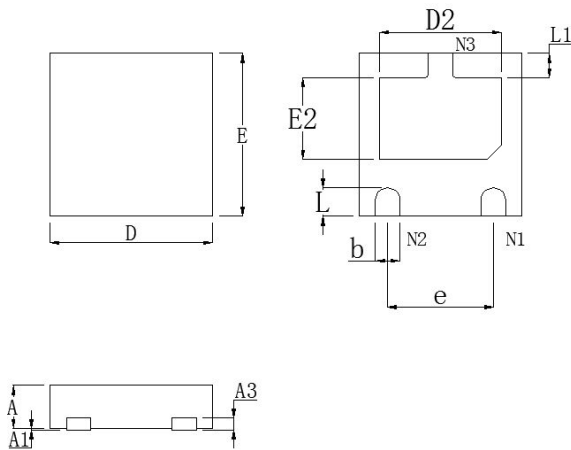
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT4V511L2	DFN2020-3	3000	7 Inch

Mechanical Data

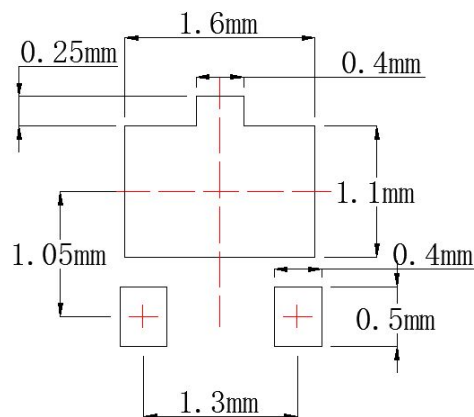
Case: DFN2020-3

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.55	0.60	0.65
A1	0.00	0.02	0.05
A3	0.10REF		
D	1.90	--	2.10
E	1.90	--	2.10
b	0.25	--	0.35
L	0.35	--	0.45
L1	0.20	--	0.30
D2	1.40	--	1.60
E2	0.95	--	1.15
e	1.20	--	1.40

Recommended Pad outline





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