



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 DFN2020-3L package. 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.

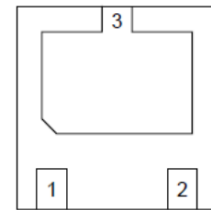
● Feature

- ✧ 5000W peak pulse power ($T_P = 8/20\mu\text{s}$)
- ✧ DFN2020-3L Package
- ✧ Working voltage: 4.5V
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Surge) 280A (8/20 μs)

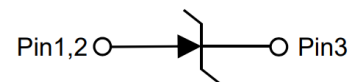
● Mechanical data

- ✧ 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

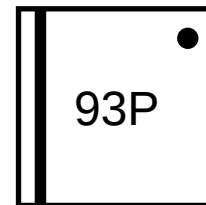
● PIN configuration



DFN2020-3L



Circuit Diagram



Marking (Top View)

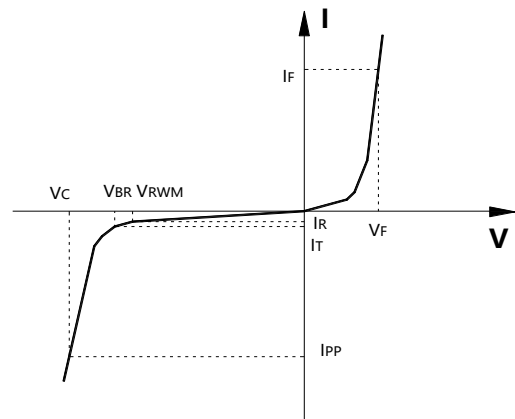
● Applications

- ✧ DIV & HDMI Port Protection
- ✧ Notebooks, desktops, and servers
- ✧ Projection TV
- ✧ USB 1.1/2.0/4.0/OTG



● 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 ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

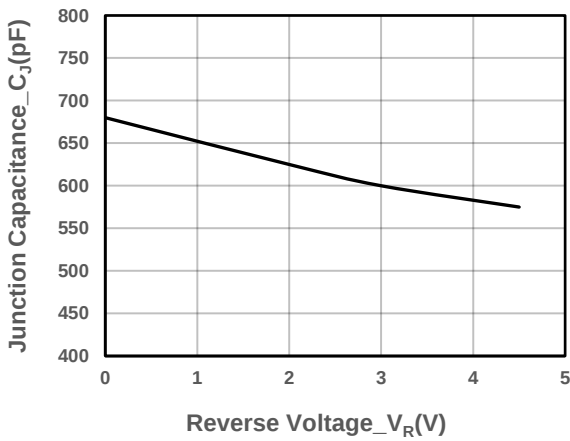
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PP}	5000	W
Peak Pulse Current (8/20 μs)	I_{PP}	280	A
ESD Rating per IEC61000-4-2:			
Contact	V_{ESD}	30	kV
Air		30	
Storage Temperature	T_{STG}	-55/+150	$^{\circ}\text{C}$
Operating Temperature	T_J	-55/+125	$^{\circ}\text{C}$

● Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

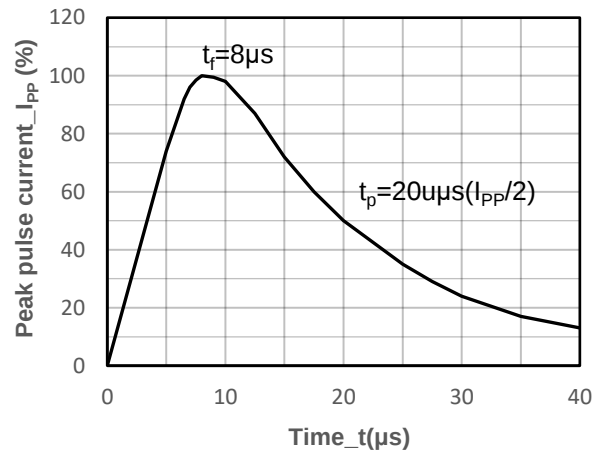
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				4.5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	4.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 4.5\text{V}$			2.0	μA
Clamping Voltage	V_C	$I_{PP} = 50\text{A}$, $t_P = 8/20\mu\text{s}$			10	V
Clamping Voltage	V_C	$I_{PP} = 280\text{A}$, $t_P = 8/20\mu\text{s}$			18	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		420		pF



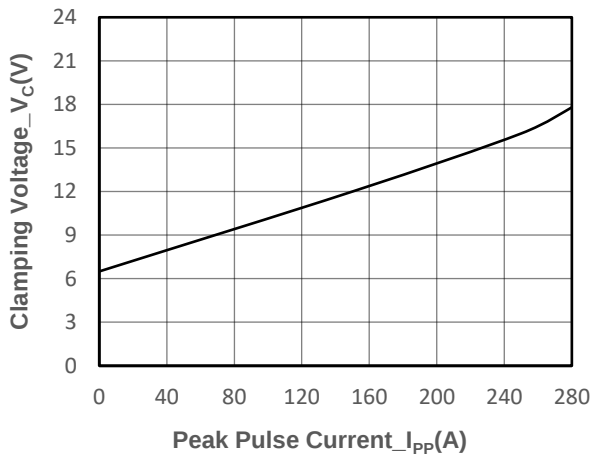
● Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)



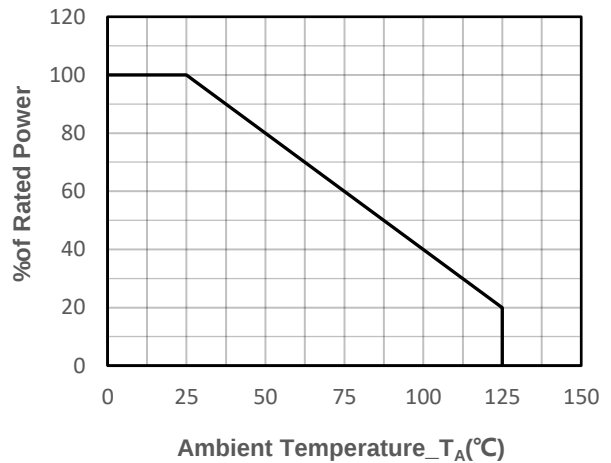
Junction Capacitance vs. Reverse Voltage



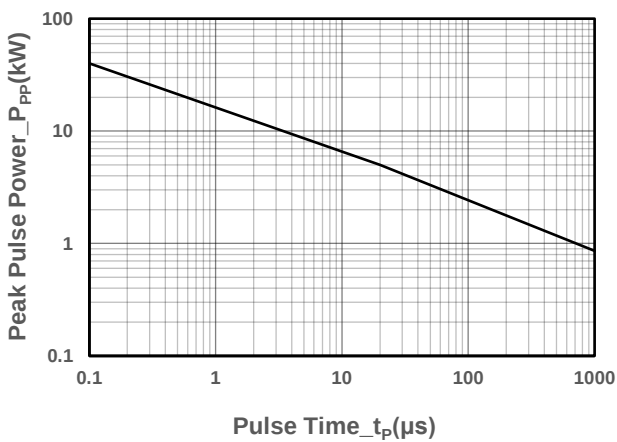
8/20 μs Pulse Waveform



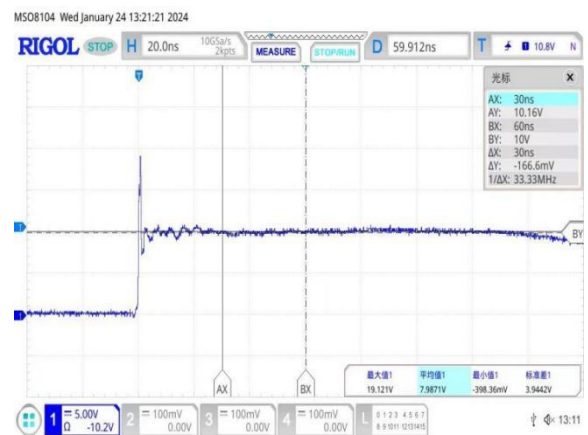
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



Peak Pulse Power vs. Pulse Time



Note: Data is taken with a 10x attenuator ESD Clamping Voltage 8kV contact per IEC61000-4-2



● Package Information

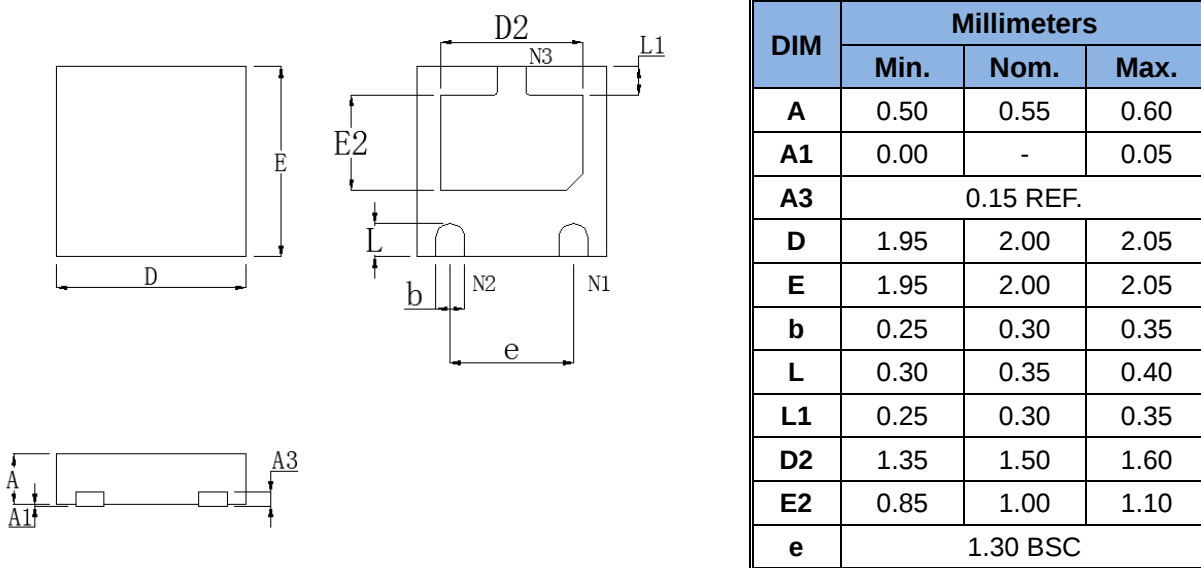
Ordering Information

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

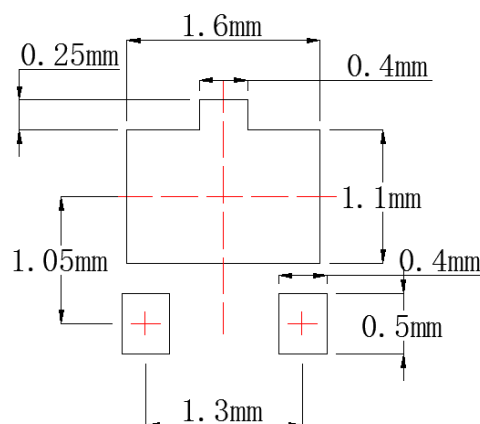
Mechanical Data

Case: DFN2020-3L

Case Material: Molded Plastic. UL Flammability



Recommended Pad outline





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