SSCT4V511L3

1-Line Uni-directional TVS Diode

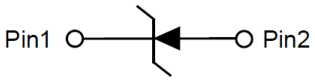
Description

The SSCT4V511L3 is an uni-directional TVS diode, 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 data and power line.

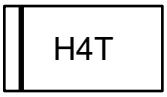
The SSCT4V511L3 complies with the IEC61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package. The small size and high ESD surge protection make an ideal choice to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers, and PDA's.

PIN configuration

DFN1610-2L (Bottom View)



Circuit Diagram



Marking (Top View)

Features

- 2500W Peak Pulse Current（8/20μs）
- DFN1610-2L Package
- Working voltage:4.5V
- Low Leakage Current
- Low clamping voltage
- RoHS Compliant
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 135A (8/20μs)

Mechanical Characteristics

- Package: DFN1610-2L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0

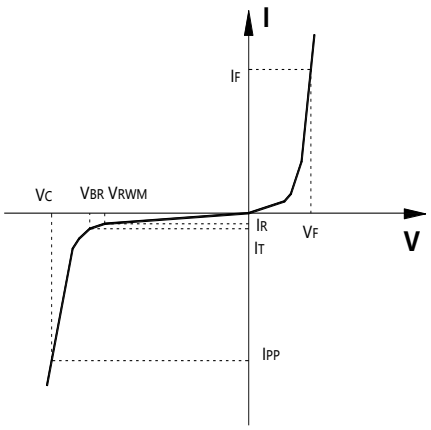
Moisture Sensitivity: Level 3 per J-STD-020

Applications

- Mobile Phones
- Battery Protection
- Power Line Protection
- VBAT pin for Mobile Devices
- Hand Held Portable Applications

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



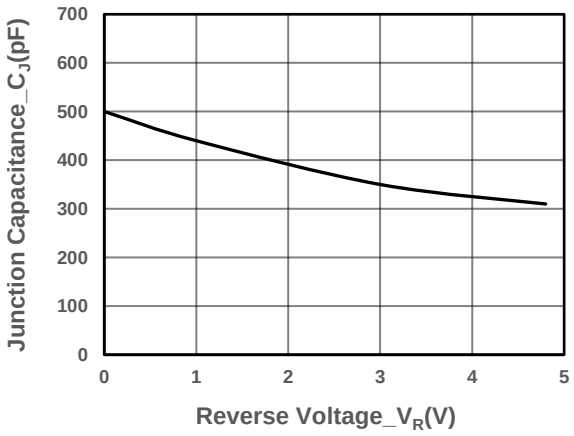
Absolute maximum rating (T_A=25℃ unless otherwise Specified)

Parameter	Symbol	Value	Units
Peak Pulse Power（8/20μs）	P_{PP}	2500	W
Peak Pulse Current（8/20μs）	I_{PP}	135	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/+125	℃

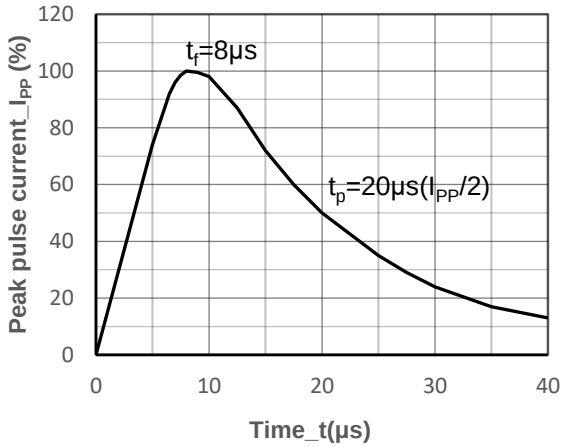
Electrical Characteristics (T_A=25℃ unless otherwise Specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				4.5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	4.8			V
Reverse Leakage Current	I_R	V_{RWM} = 4.5V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 10A, t_P = 8/20μs			7	V
Clamping Voltage	V_C	I_{PP} = 135A, t_P = 8/20μs			18	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz			750	pF

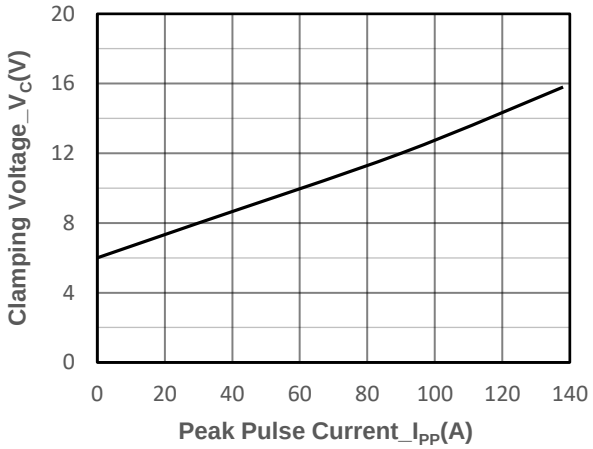
● Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



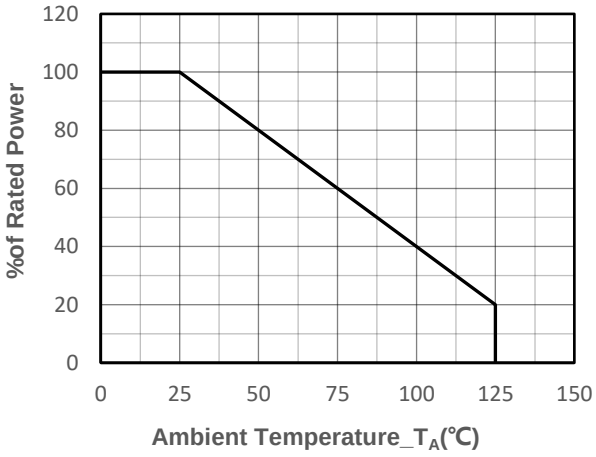
Junction Capacitance vs. Reverse Voltage



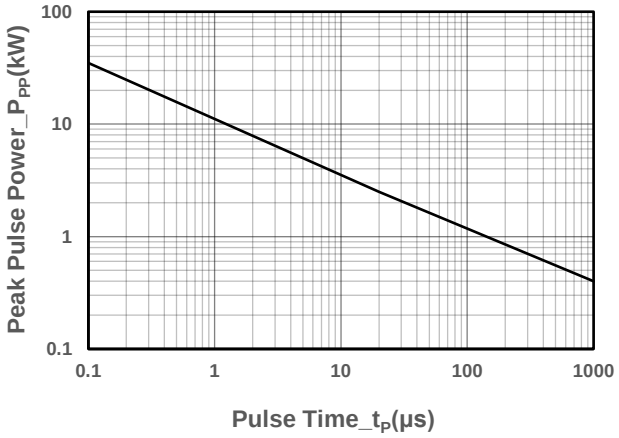
8/20μs Pulse Waveform



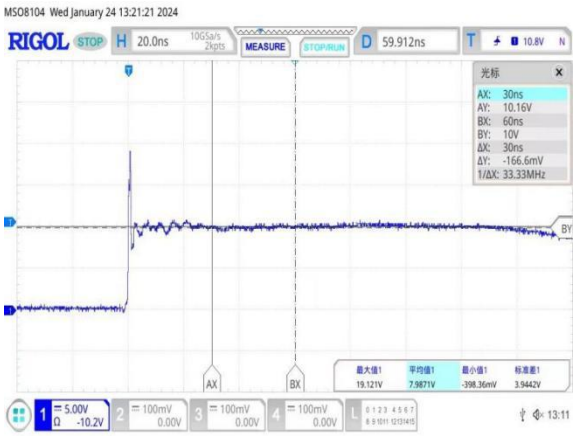
Clamping Voltage vs. Peak Pulse Current



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

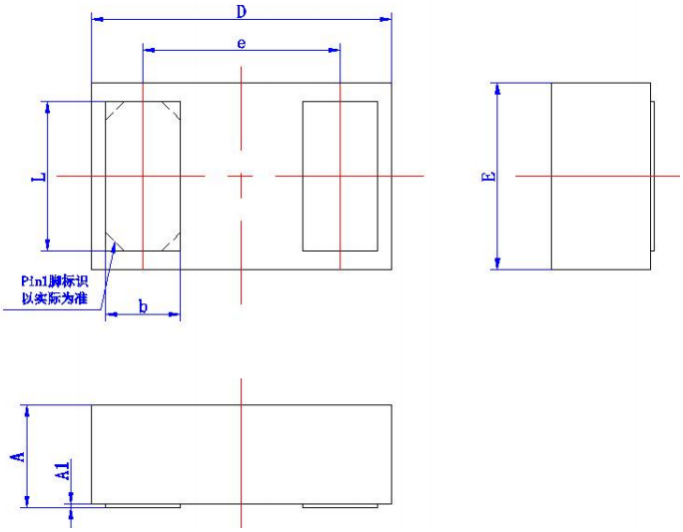
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT4V811L3	DFN1610-2L	3000	7 Inch

Mechanical Data

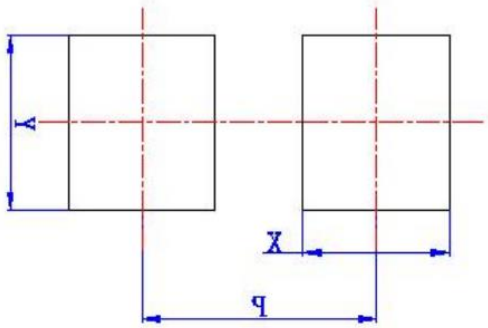
Case: DFN1610-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.50	0.65
A1	0.00	0.05
D	1.5	1.7
E	0.9	1.1
b	0.35	0.45
e	1.05TYP	
L	0.75	0.95

Suggested Land Pattern (Unit: mm)



DIM	Millimeters
	Type
X	0.62
Y	1.0
P	1.2

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