SSCT15V21N1

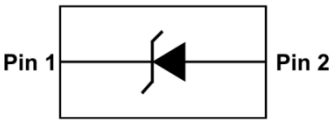
1-Line Bidirectional Micro Packaged TVS Diodes for ESD Protection

Description

The SSCT15V21N1 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 SSCT15V21N1 complies with the IEC 61000-4-2 (ESD) with ±30 kV air and ±30 kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size and high ESD surge protection make SSCT15V21N1 an ideal choice to protect cell phone, digital cameras, and many other portable applications.

PIN configuration

DFN1006-2L (Bottom View)



Top view

Feature

- 450W peak pulse power (t_P = 8/20μs)
- DFN1006-2L Package
- Working voltage: 15V
- Low clamping voltage
- Low capacitance
- Low leakage current
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning)15A (8/20μs)

Marking

Applications

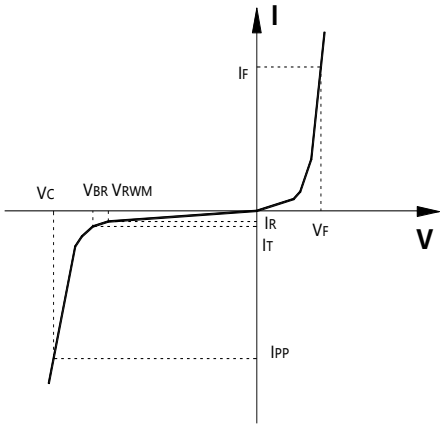
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

Mechanical data

- Lead finish:100% matte Sn (Tin)
- RoHS compliant
- Case Material: “Green” Molding Compound
- Qualified max reflow temperature:260℃
- Device meets MSL3 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤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



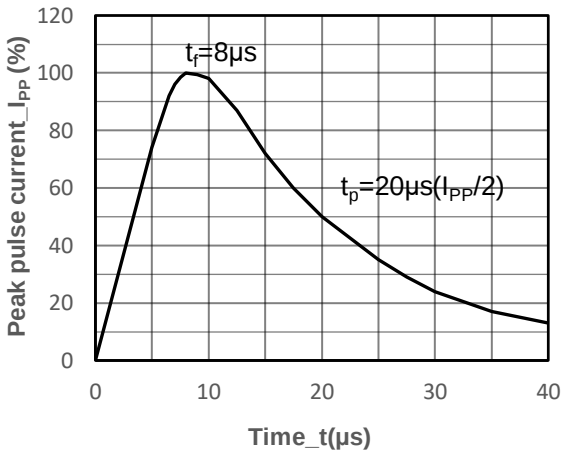
Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20μs）	P_{PP}	450	W
Peak Pulse Current（8/20μs）	I_{PP}	15	A
Forward Voltage (IF = 10mA)	V_F	1.2	V
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	℃

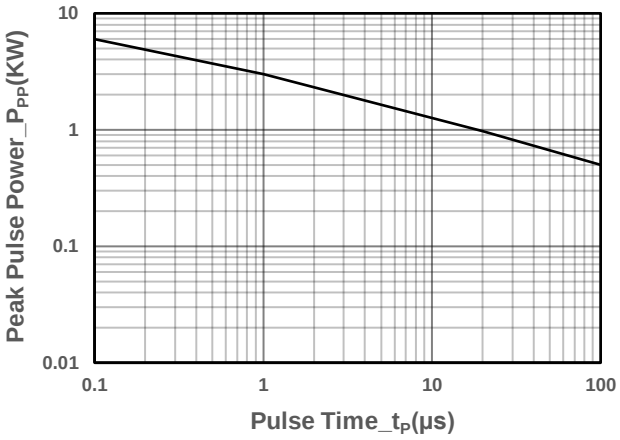
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				15	V
Breakdown Voltage	V_{BR}	I_T = 1mA	16		18	V
Reverse Leakage Current	I_R	V_{RWM} =15V			0.1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			20	V
Clamping Voltage	V_C	I_{PP} = 15A, t_P = 8/20μs			30	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz			100	pF

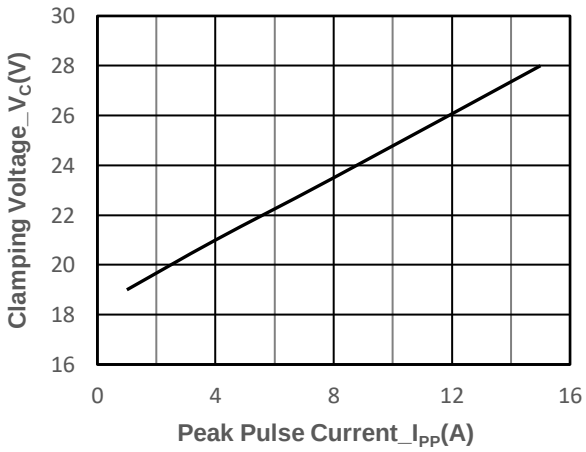
Typical Performance Characteristics



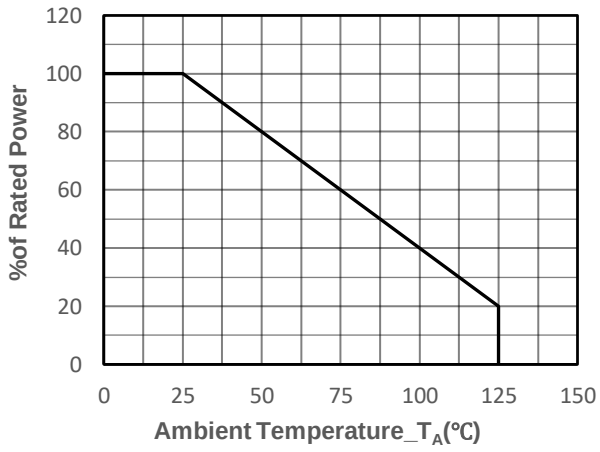
8/20μs Pulse Waveform



Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature

Package Information

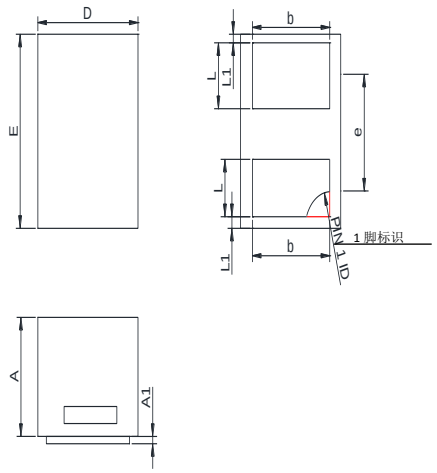
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT15V21N1	DFN1006-2L	10000	7 Inch

Mechanical Data

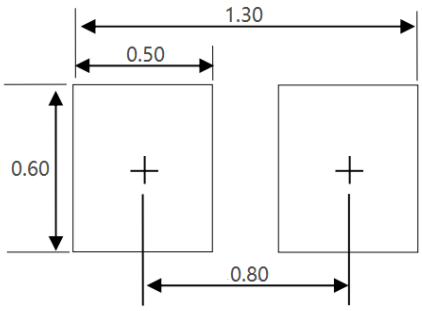
Case: DFN1006-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.45	0.60
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

Recommended Pad outline



Unit:mm

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