



SSCT15V21N1

1-line Uni-directional Micro Packaged TVS Diodes for ESD Protection

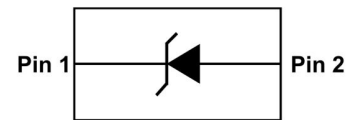
● Description

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 IEC61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small $1.0 \times 0.6 \times 0.5\text{mm}$ lead-free DFN package. The small size and high ESD surge protection make an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

● Feature

- ✧ Package: DFN1006-2L ($1.0 \times 0.6 \times 0.5\text{mm}$)
- ✧ Protects one data or power line
- ✧ Working voltage: 15V
- ✧ Low clamping voltage
- ✧ 2-pin leadless package
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 15A (8/20us)
- ✧ RoHS Compliant

● PIN configuration



Top view

● Applications

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

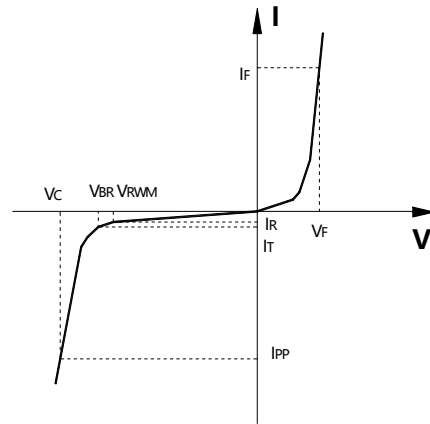
● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: $7 \sim 17\ \mu\text{m}$
- ✧ Pin flatness: $\leq 3\text{mil}$



● 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 @TA=25°C

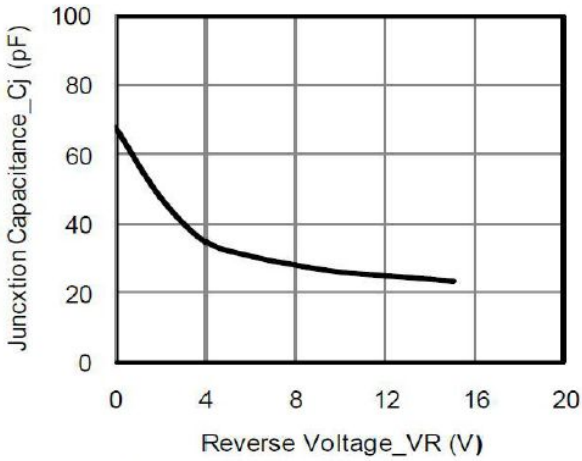
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	P_{PP}	450	W
Peak Pulse Current (8/20us)	I_{PP}	15	A
ESD Rating per IEC61000-4-2:	Contact Air	V_{ESD}	30
			30
Storage Temperature	T_{STG}	-55/+150	°C
Operating Temperature	T_J	-55/+125	°C

● Electrical Characteristics @TA=25°C

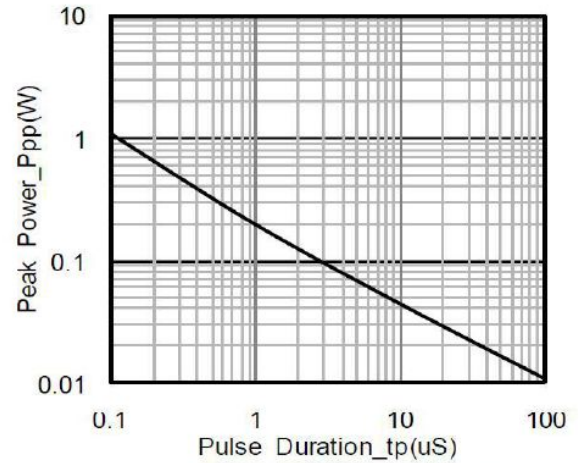
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				15	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	16			V
Reverse Leakage Current	I_R	$V_{RWM} = 15V$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20us$			20	V
Clamping Voltage	V_C	$I_{PP} = 15A, t_p = 8/20us$			30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



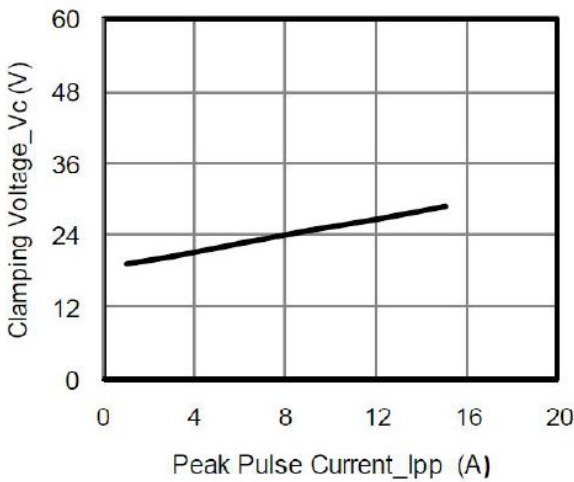
● Typical Performance Characteristics



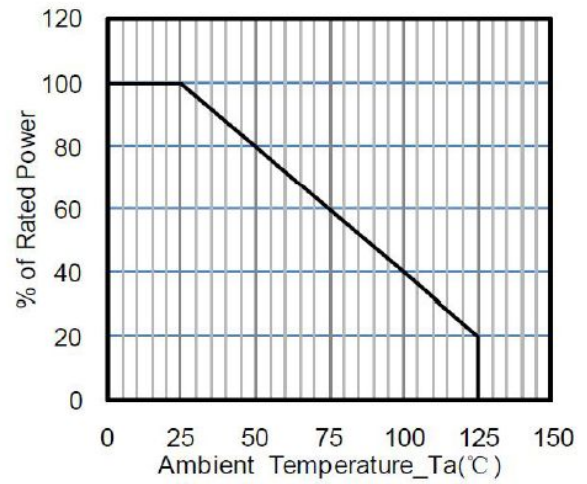
Junction Capacitance vs. Reverse Voltage



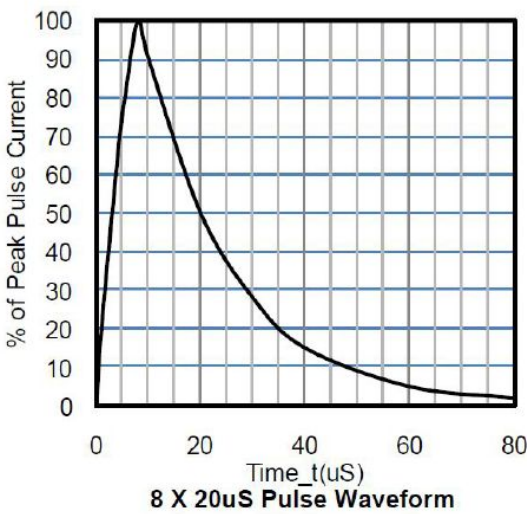
Peak Pulse Power vs. Pulse Time



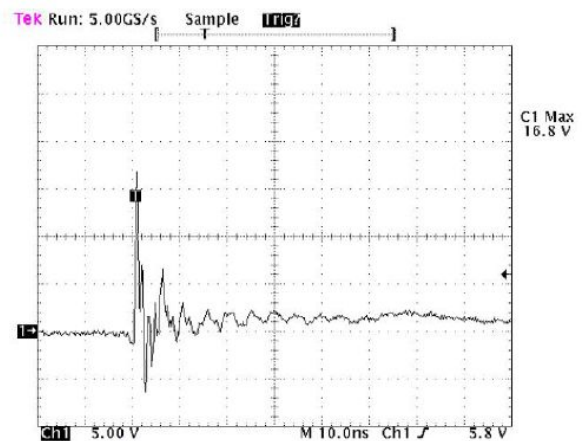
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20uS Pulse Waveform



**ESD Clamping Voltage
8 kV Contact per IEC61000-4-2**



- **Package Information**

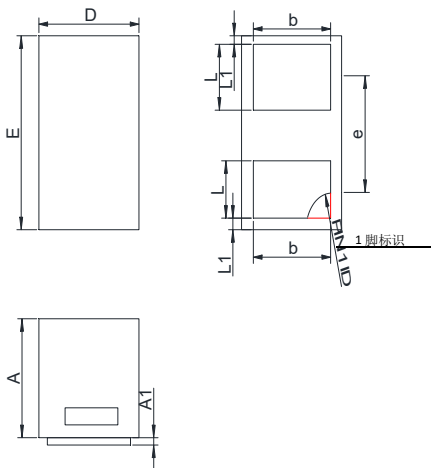
Ordering Information

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

Mechanical Data

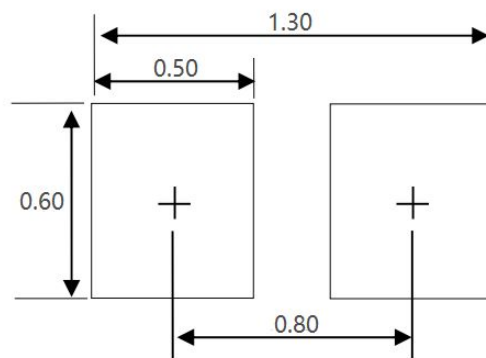
Case:DFN1006-2L

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



- **History Version**

V1.0	First edition	2021-08-12
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