



## 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  $\pm 30$  kV air and  $\pm 30$  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.

### ● Feature

- ✧ 450W peak pulse power ( $t_P = 8/20\mu s$ )
- ✧ 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:  $\pm 30$  kV
    - Contact discharge:  $\pm 30$  kV
  - IEC61000-4-5 (Lightning)15A (8/20 $\mu s$ )

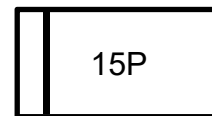
### ● Applications

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

### ● PIN configuration



**DFN1006-2L (Bottom View)**



**Marking**

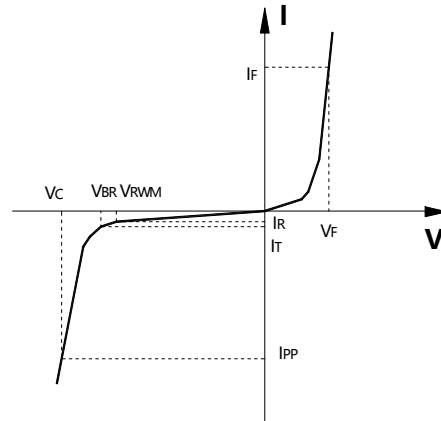
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ RoHS compliant
- ✧ Case Material: "Green" Molding Compound
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ Pin flatness:  $\leq 3$  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



● **Absolute maximum rating @ $T_A=25^\circ\text{C}$**

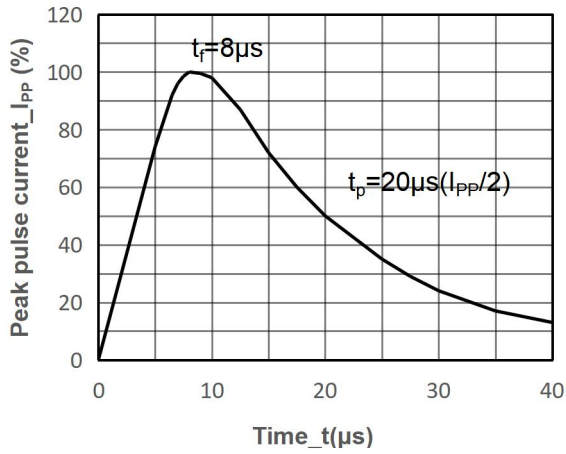
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	450	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	15	A
Forward Voltage (IF = 10mA)	$V_F$	1.2	V
ESD Rating per IEC61000-4-2:	Contact	30	kV
	Air	30	
Storage Temperature	$T_{STG}$	-55/+150	$^\circ\text{C}$
Operating Temperature	$T_J$	-55/+125	$^\circ\text{C}$

● **Electrical Characteristics @ $T_A=25^\circ\text{C}$**

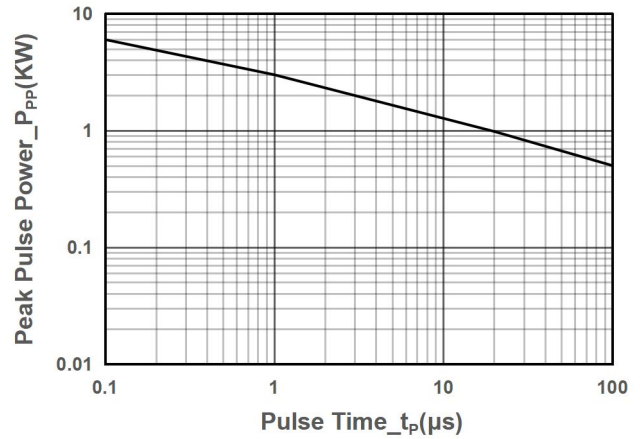
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				15	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	16		19	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 15\text{V}$			0.1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$			20	V
Clamping Voltage	$V_C$	$I_{PP} = 15\text{A}$ , $t_P = 8/20\mu\text{s}$			30	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$			100	pF



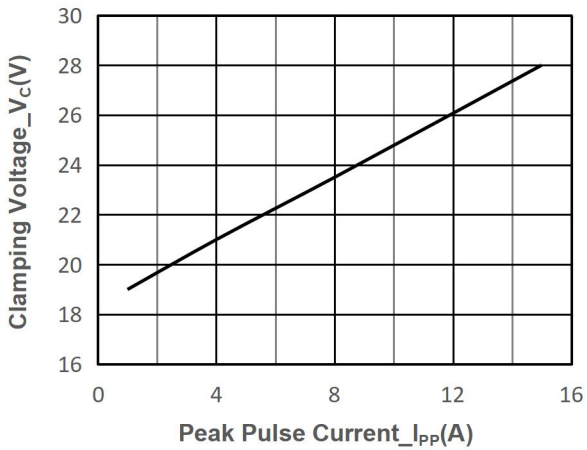
## ● Typical Performance Characteristics



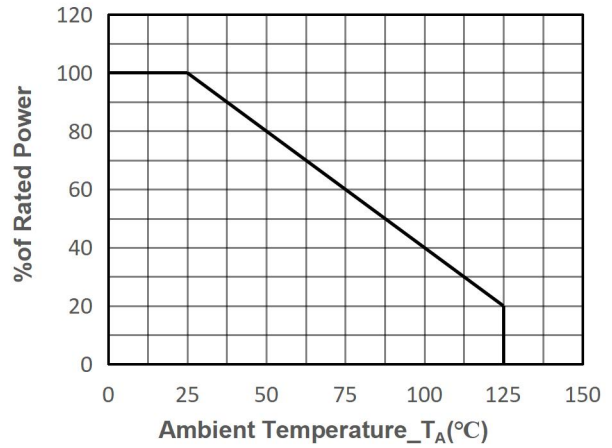
8/20 $\mu$ s Pulse Waveform



Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



## ● Package Information

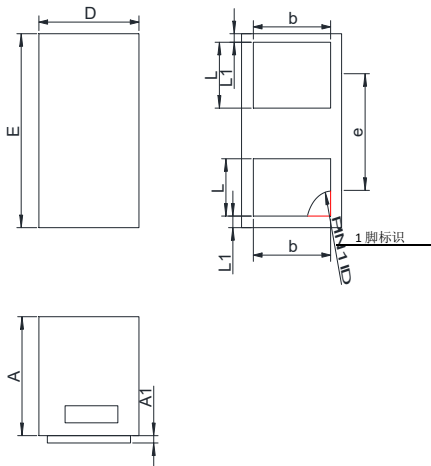
### Ordering Information

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

### Mechanical Data

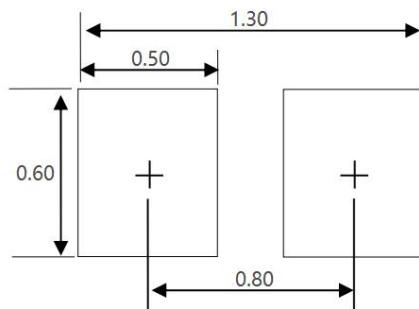
Case: DFN1006-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.43	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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