



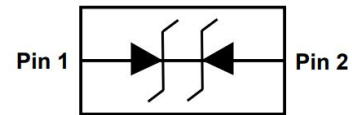
## SSCT12V12N1

### 1-Line Bi-directional TVS Diode

#### ● Description

The SSCT12V12N1 is a bi-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 SSCT12V12N1 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge.

#### ● PIN configuration



Top view



Marking

#### ● Features

- ◇ Protects one I/O or Power Line
- ◇ DFN1006-2L Package
- ◇ Working voltage:12V
- ◇ Low Leakage Current
- ◇ Small Body Outline Dimensions
- ◇ Response Time is Typically<1ns
- ◇ Complies with following standards:
  - IEC61000-4-2(ESD)  $\pm 30\text{KV}$ (contact), $\pm 30\text{KV}$ (air)
  - IEC61000-4-5(Lightning) 15A(8/20 $\mu\text{s}$ )

#### ● Applications

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

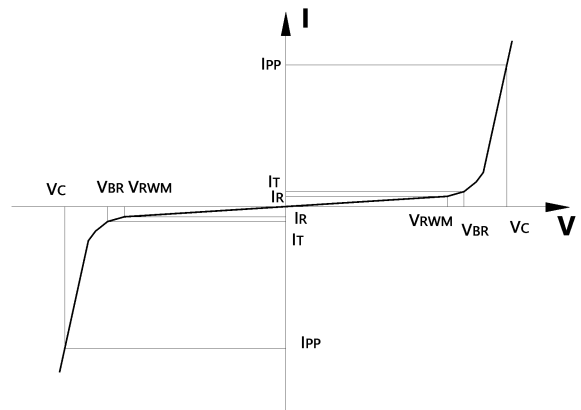
#### ● Mechanical Characteristics

- ◇ Package:DFN1006-2L(1.0 $\times$ 0.6 $\times$ 0.5mm)
- ◇ Lead Finish: NiPdAu
- ◇ Case Material: “Green” Molding Compound.
- ◇ UL Flammability Classification Rating 94V-0
- ◇ RoHS Compliant



## ● 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

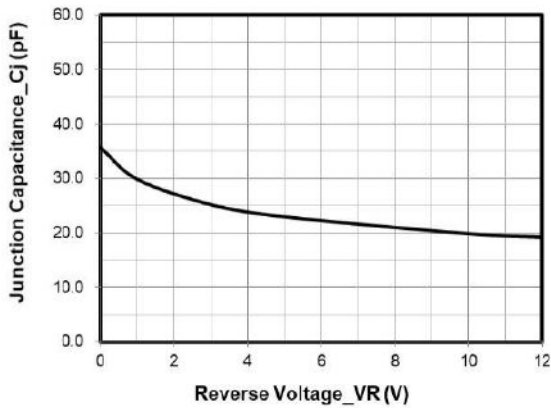
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20μs)	$P_{PP}$	375	W
Peak Pulse Current (8/20μs)	$I_{PP}$	15	A
ESD Rating per IEC61000-4-2:	Contact	±30	KV
	Air	±30	
Storage Temperature	$T_{STG}$	-55/+150	°C
Operating Temperature	$T_J$	-55/+125	°C

## ● Electrical Characteristics @TA=25°C

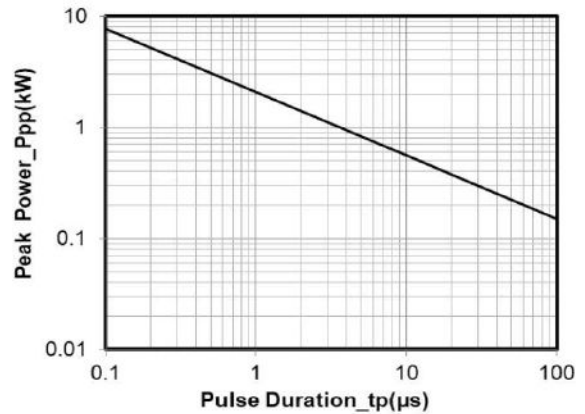
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12\text{V}$			0.2	μA
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			16	V
Clamping Voltage	$V_C$	$I_{PP} = 15\text{A}, t_p = 8/20\mu\text{s}$			25	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$		35		pF



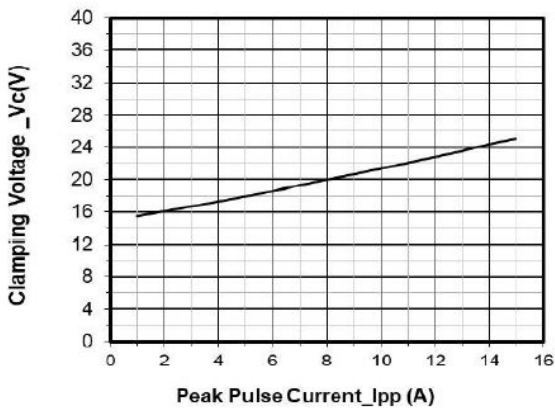
● **Typical Performance Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



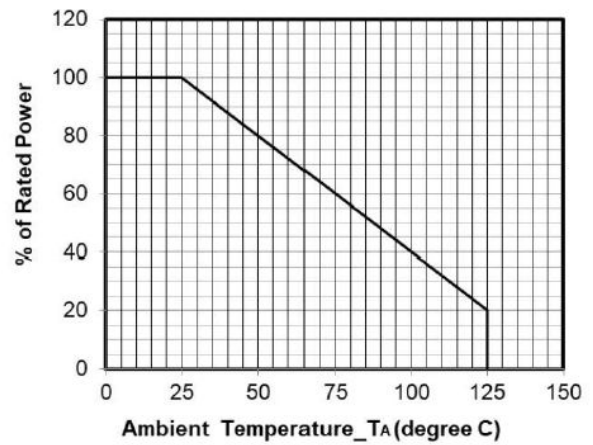
Junction Capacitance vs. Reverse Voltage



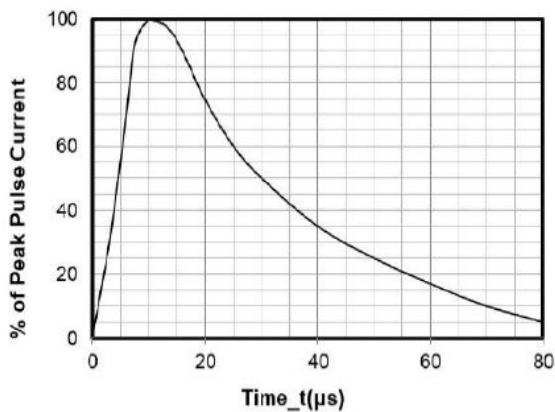
Peak Pulse Power vs. Pulse Time



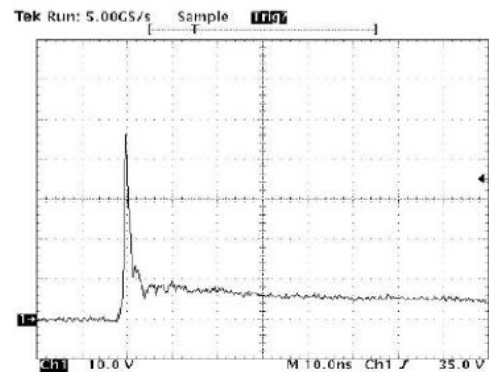
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20 $\mu\text{s}$  Pulse Waveform



Note: Data is taken with a 10x attenuator

**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**



## ● Package Information

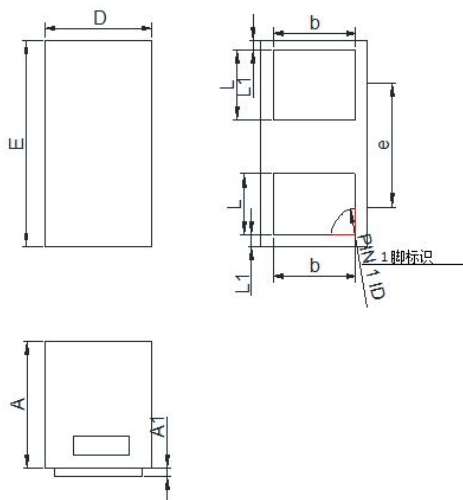
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT12V12N1	DFN1006-2L	10000	7 Inch

### Mechanical Data

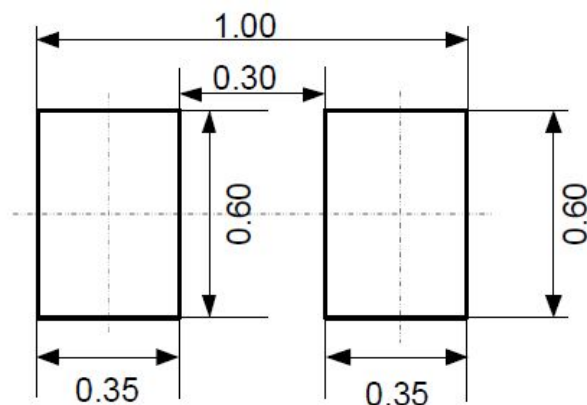
Case: DFN1006-2L

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	

### Suggested Land Pattern





- **History Version**

V1.0	Product datasheet	2021-06-10
V1.1	Add marking Icon	2022-05-08

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