



SSCT12V12N1

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1-Line Bi-directional TVS Diode

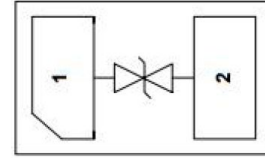
● Description

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.

● Features

- ◇ Protects one I/O or Power Line
- ◇ 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 μ s)

● PIN configuration



DFN1006-2L

● Applications

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

● Mechanical Characteristics

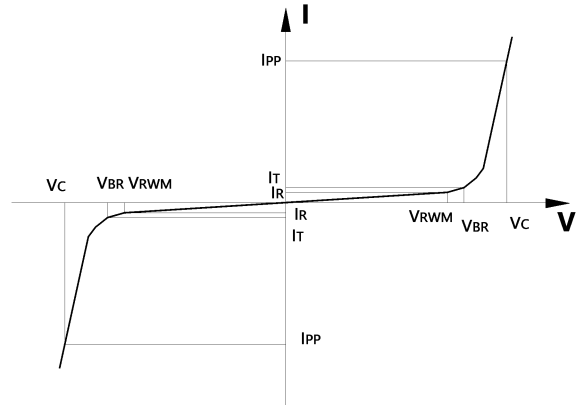
- ◇ Package:DFN1006-2L(1.0 \times 0.6 \times 0.5mm)
- ◇ Lead Finish: NiPdAu
- ◇ Case Material: “Green” Molding Compound.
- ◇ UL Flammability Classification Rating 94V-0
- ◇ RoHS Compliant



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● 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_{PPP}	Peak Pulse Power
C	Junction Capacitance



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

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

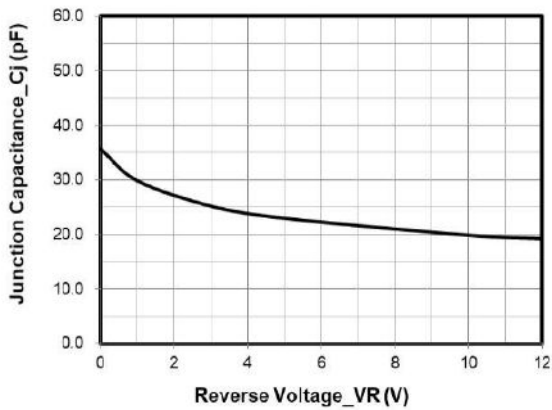
● Electrical Characteristics @ $T_A=25^\circ\text{C}$

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	$V_{RWM} = 12\text{V}, T = 25^\circ\text{C}$			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

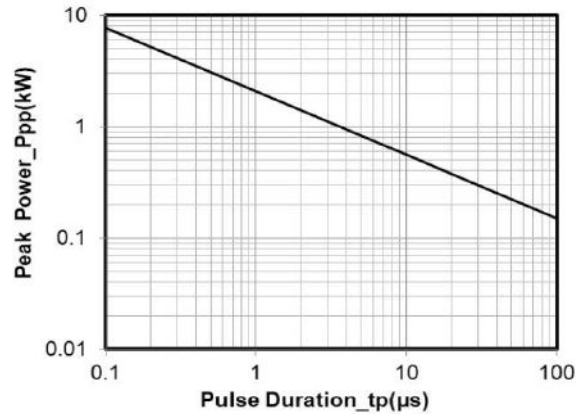


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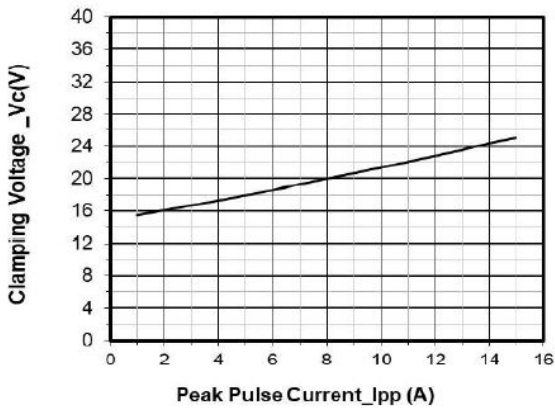
● Typical Performance Characteristics(T_A=25°C unless otherwise Specified)



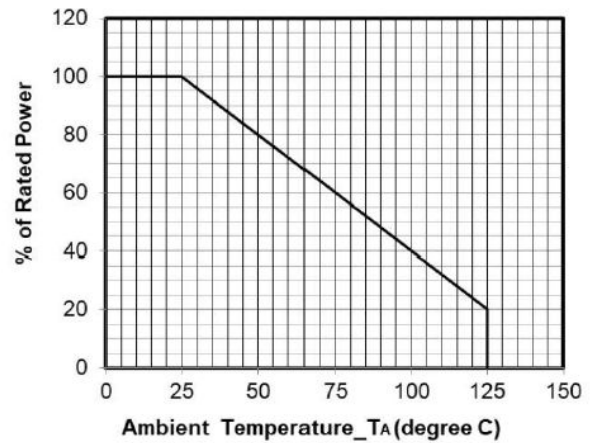
Junction Capacitance vs. Reverse Voltage



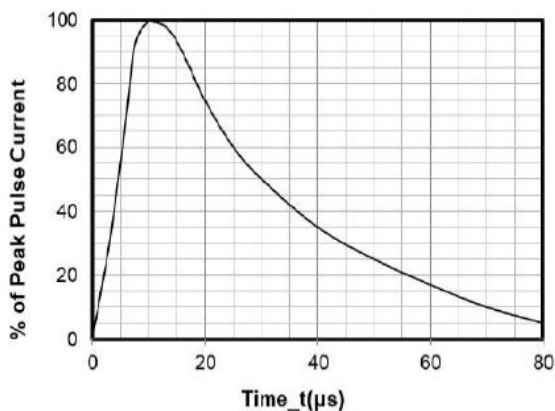
Peak Pulse Power vs. Pulse Time



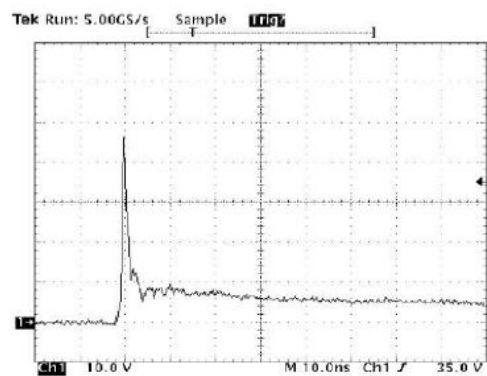
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

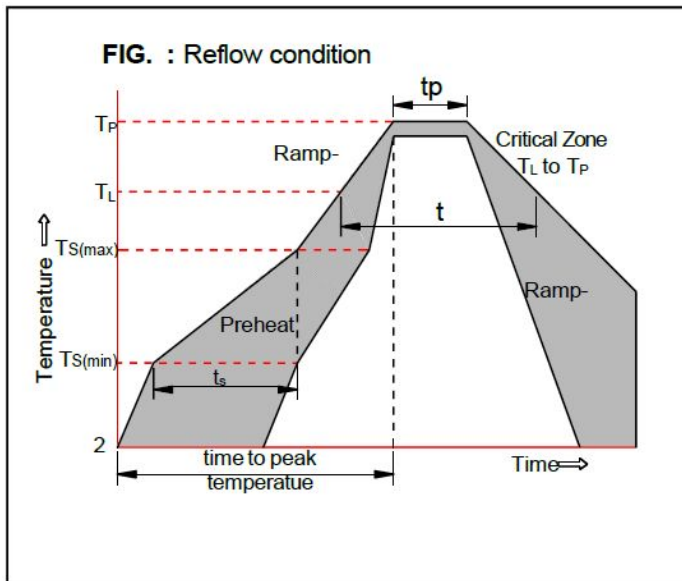


Note: Data is taken with a 10x attenuator
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2



- Soldering Parameters**

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-190 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		5°C/sec. Max
Ts(max) to TL - Ramp-up Rate		5°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(TL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		40 secs. Max
Ramp-down Rate		5°C/sec. Max
Time 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+280°C





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- **Package Information**

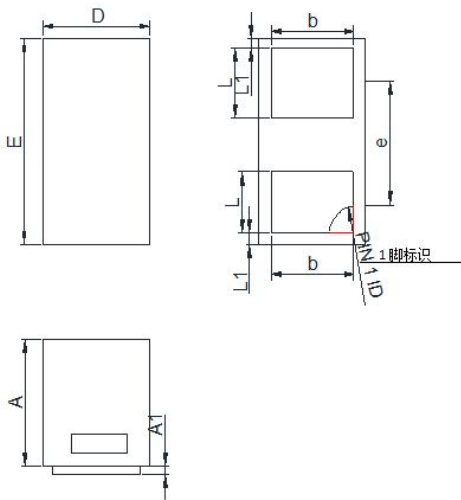
Ordering Information

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

Mechanical Data

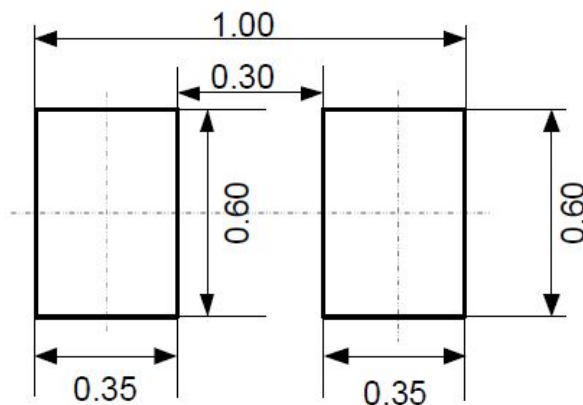
Case: DFN1006-2L

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





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