



SSCT12V21N1

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1-Line Uni-directional TVS Diode

● Description

The SSCT12V21N1 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 SSCT12V21N1 complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge.

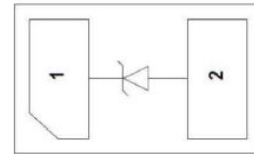
● Features

- ◇ 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)
 - IEC61000-4-4(EFT) 40A(5/50ns)
 - IEC61000-4-5(Lightning) 30A(8/20 μ s)

● 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

● PIN configuration



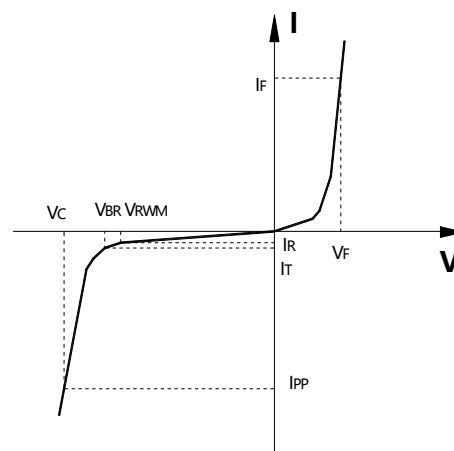
DFN1006-2L

● Applications

- ◇ Cellular Handsets & Accessories
- ◇ Personal Digital Assistants (PDAs)
- ◇ MP3 Players
- ◇ Digital Cameras

● Mechanical Characteristics

- ◇ Package:DFN1006-2L
- ◇ UL Flammability Classification Rating 94V-0
- ◇ Marking: Marking Code
- ◇ RoHS Compliant





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- **Absolute maximum rating @TA=25°C**

Symbol	Parameter	Value	Units
VESD	ESD Rating per IEC61000-4-2:Contact Air	±30 ±30	KV
P _{PPP}	Peak Pulse Power (8/20μs)	300	W
T _{STG}	Storage Temperature	-55/+150	°C
T _J	Operating Temperature	-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 = 1mA	13			V
Reverse Leakage Current	I _R	V _{RWM} = 12V, T = 25°C			1	μA
Peak Pulse Current	I _{PP}	t _P = 8/20μs			30	A
Clamping Voltage	V _C	I _{PP} = 30A, t _P = 8/20μs		24	28	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz,		70		pF



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

Figure 1: Peak Pulse Power Vs Pulse Time

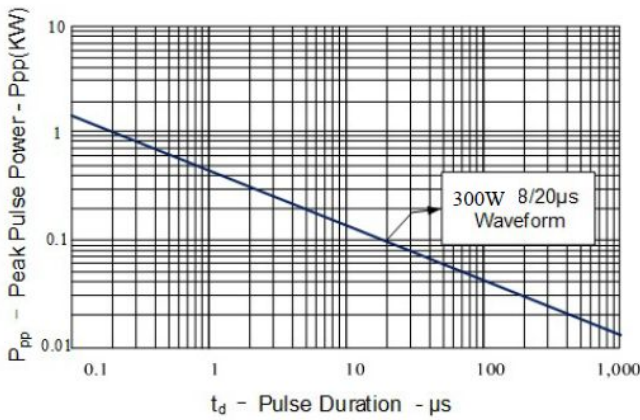


Figure 2: Power Derating Curve

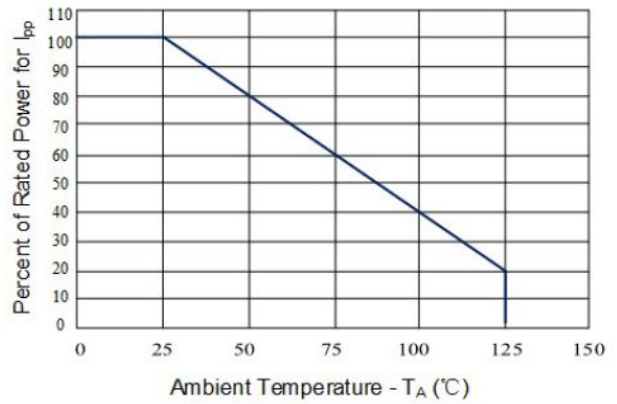


Figure 3: Clamping Voltage vs. Peak Pulse Current

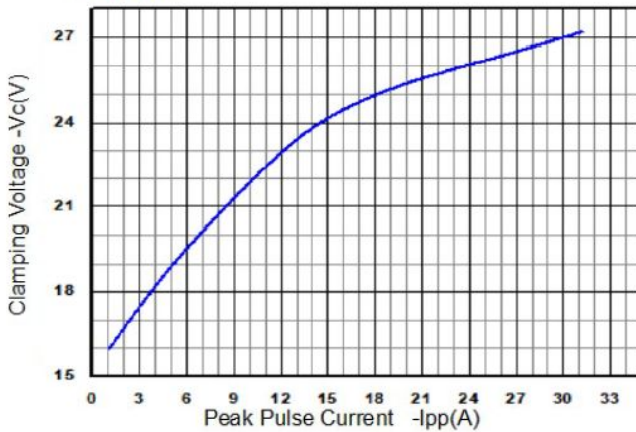


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

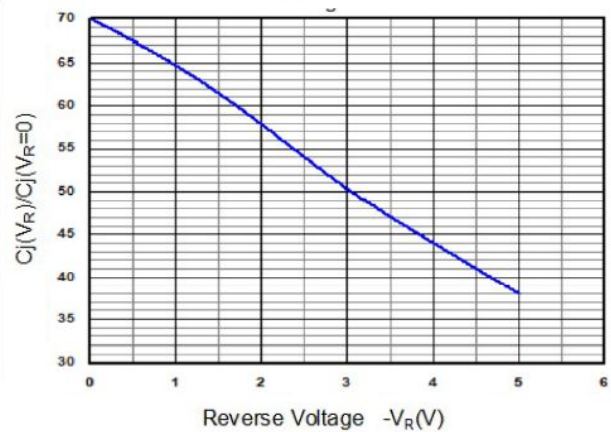


Figure 5: Pulse Waveform

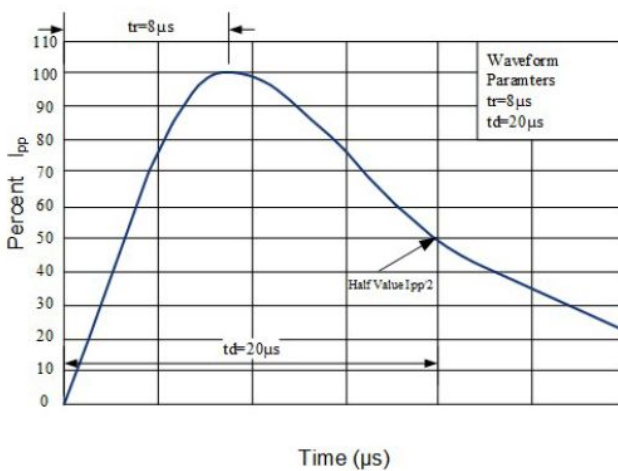
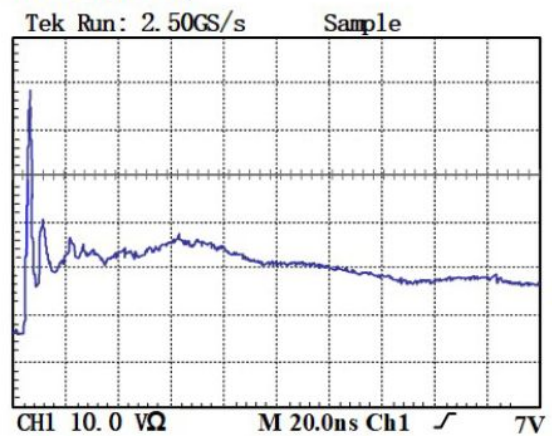


Figure 6: ESD Clamping (8kV Contact per IEC 61000-4-2)

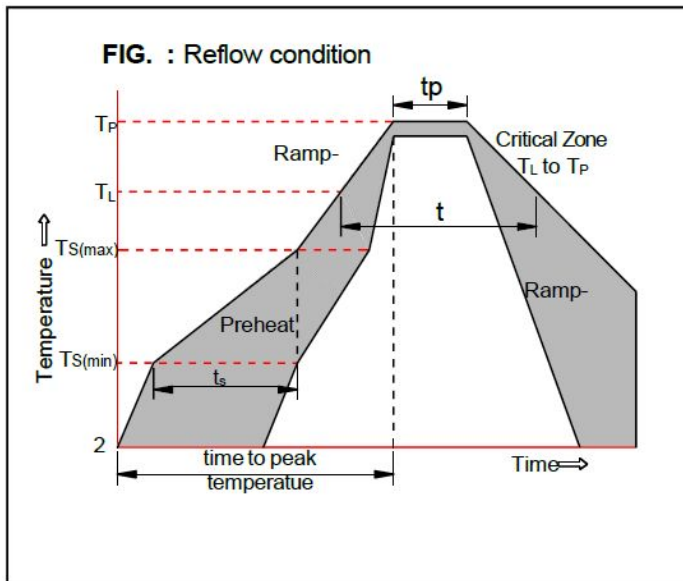




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- Soldering Parameters

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**

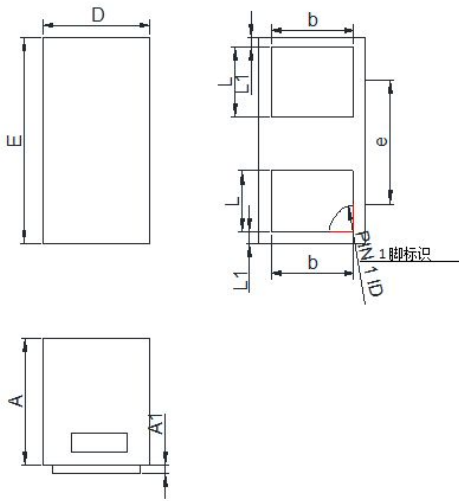
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT12V21N1	DFN1006-2L	10000	7 Inch

Mechanical Data

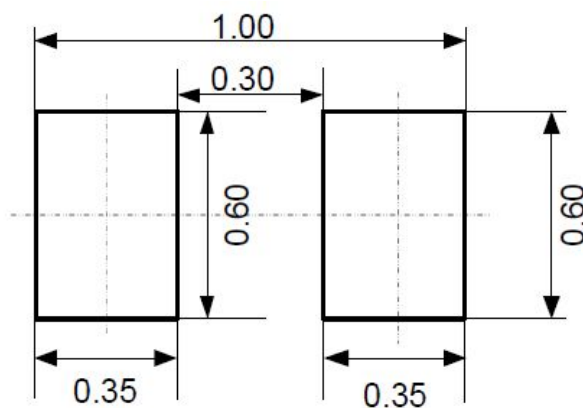
Case: DFN1006-2L

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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