



SSCT24V21N1

1-Line Uni-directional TVS Diode

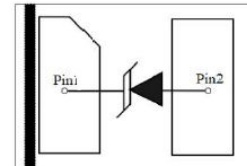
● Description

The SSCT24V21N1 is designed with AF Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. It has been specifically designed to protect sensitive components which are connected to data and transmission lines from over voltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

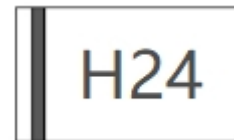
● Feature

- ◇ Ultra small package: 1.0x0.6x0.5mm
- ◇ Protects one data or power line
- ◇ Working voltage: 24V
- ◇ 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) 45A (8/20us)
- ◇ RoHS Compliant

● PIN configuration



Top view



Marking

● Applications

- ◇ Cellular Handsets and Accessories
- ◇ Personal Digital Assistants
- ◇ Notebooks and Handhelds
- ◇ Portable Instrumentation
- ◇ Digital Cameras
- ◇ Peripherals
- ◇ Audio Players
- ◇ Keypads, Side Keys, LCD Displays
- ◇ High Speed Line :USB1.0/2.0/3.0/3.1, VGA, DVI,SDI

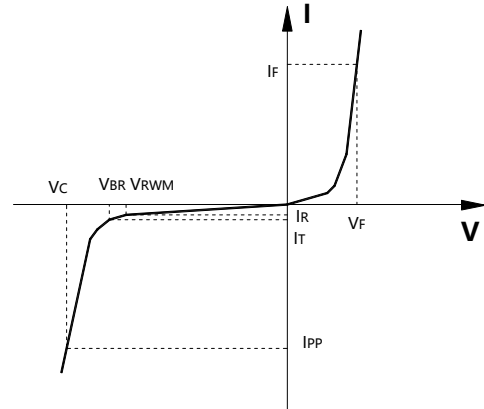
● Mechanical data

- ◇ Package: DFN1006-2L (1.0×0.6×0.5mm)
- ◇ Lead Finish: NiPdAu
- ◇ Case Material: “Green” Molding Compound.
- ◇ UL Flammability Classification Rating 94V-0
- ◇ Moisture Sensitivity: Level 3 per J-STD-020
- ◇ Terminal Connections: See Diagram Below
- ◇ Marking Information: See Below



● 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	Junction Capacitance



● Absolute maximum rating @TA=25°C

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ S)	1500	W
I_{PP}	Peak Pulse Current (8/20 μ S)	45	A
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 30 ± 30	KV
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}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	25			V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$,			1	μA
Forward Voltage	V_F	$I_F = 10\text{mA}$	0.5		1.2	V
Clamping Voltage	V_C	$I_{PP} = 10\text{A}$, $t_P = 8/20\mu\text{s}$		29	33	V
Clamping Voltage	V_C	$I_{PP} = 45\text{A}$, $t_P = 8/20\mu\text{s}$		34	36	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		70	110	pF



- Typical Performance Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

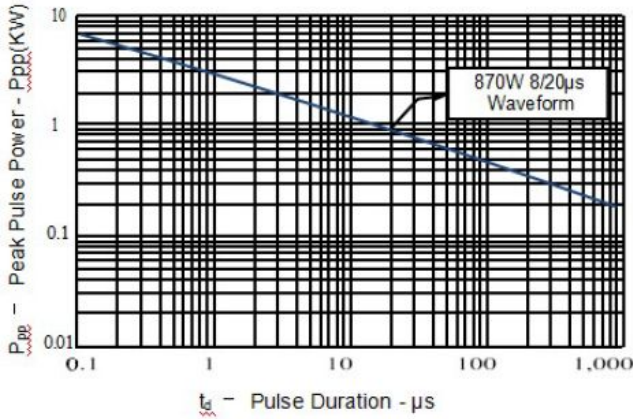


Figure 2: Power Derating Curve

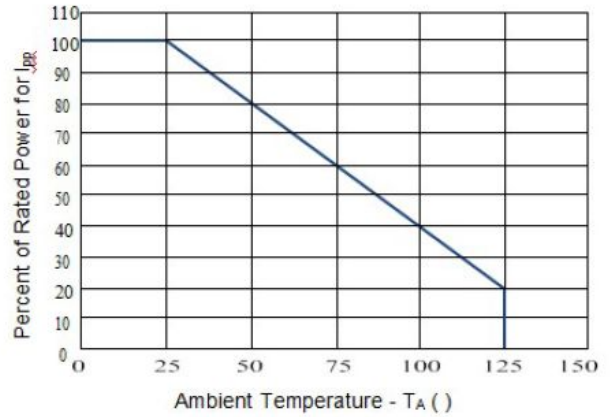


Figure 3: Clamping Voltage vs. Peak Pulse Current

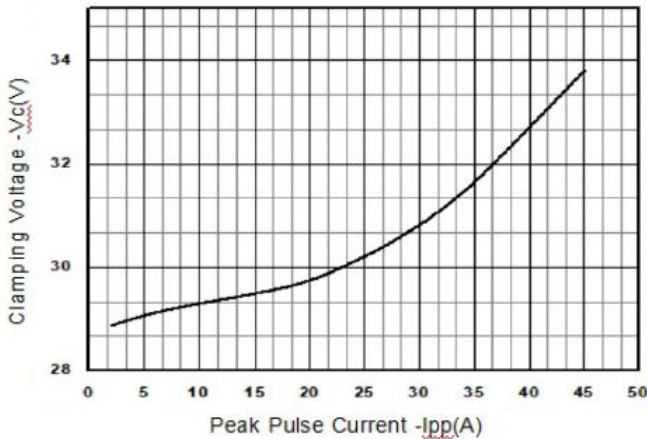


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

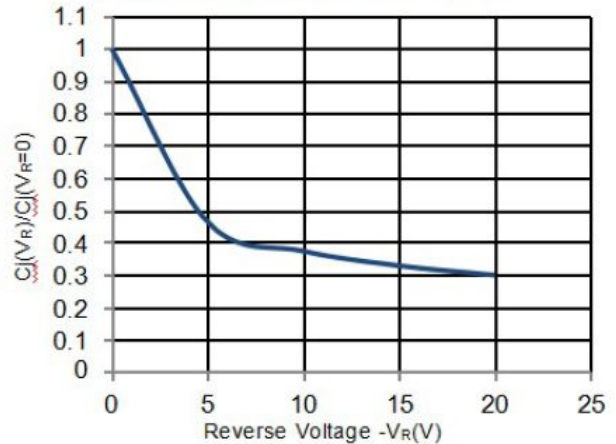


Figure 5: 8/20μs Pulse Waveform

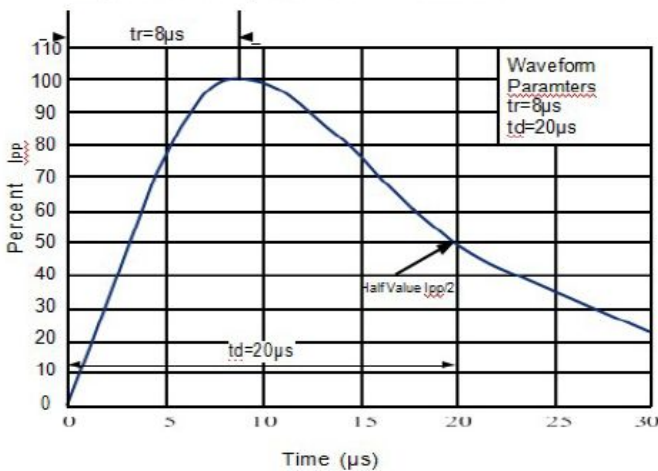
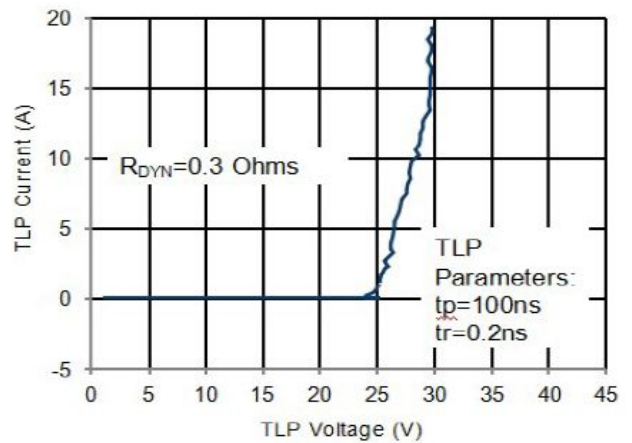


Figure 6: TLP Curve





- **Package Information**

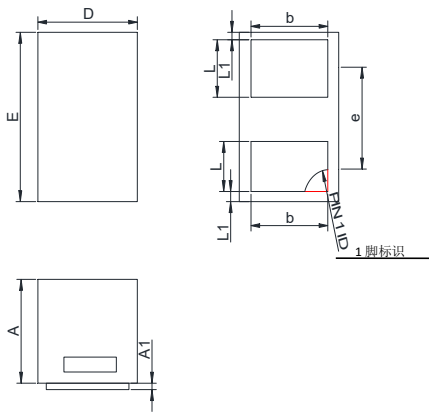
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V21N1	DFN1006-2L	10000	7 Inch

Mechanical Data

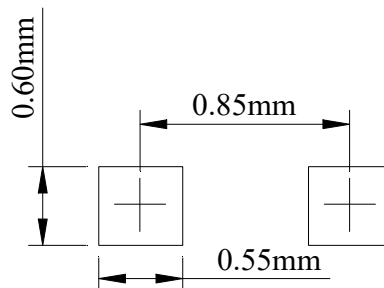
Case:DFN1006-2L

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	0.55
e	0.65TYP	
L	0.20	0.30
L1	0.05REF	

Recommended Pad outline





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