SSCT12V32N1

1-Line Bi-directional TVS Diodes for ESD Protection

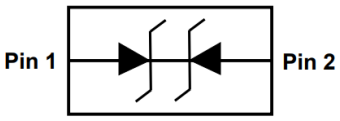
● Description

The SSCT12V32N1 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 SSCT12V32N1 complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ± 30kV 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 SSCT12V32N1 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

● PIN configuration

DFN1006-2L (Bottom View)



Circuit Diagram

● Feature

- ✧ 1200W peak pulse power (t_P = 8/20μs)
- ✧ DFN1006-2L Package
- ✧ Working voltage: 12V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 35A (8/20μs)
- ✧ RoHS compliant

Marking

● Mechanical data

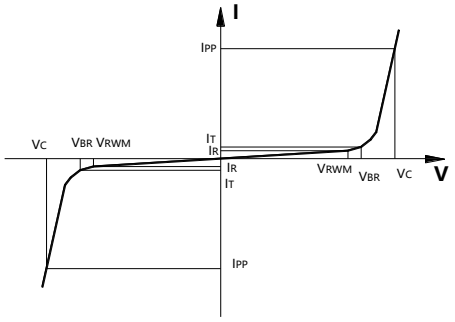
- ✧ Lead finish:100% matte Sn (Tin)
- ✧ Case Material: “Green” Molding Compound
- ✧ Qualified max reflow temperature:260℃
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 um
- ✧ Pin flatness: ≤3mil

● Applications

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

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



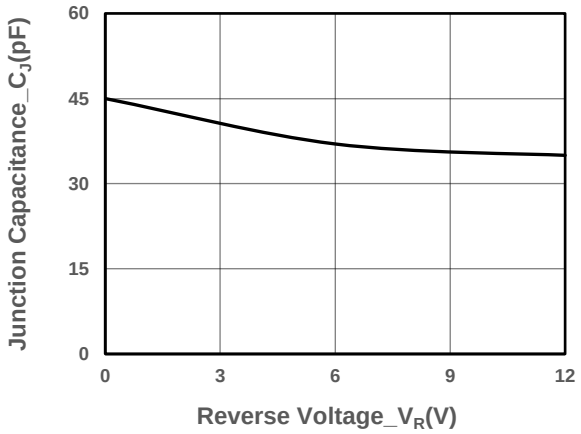
Absolute maximum rating (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20μs）	P_{PP}	1200	W
Peak Pulse Current（8/20μs）	I_{PP}	35	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	30 30	kV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

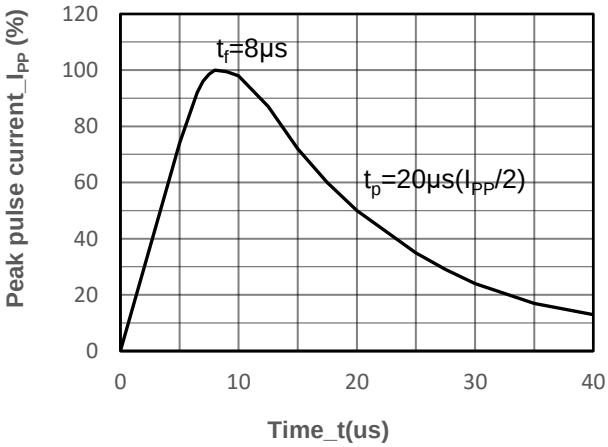
Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				12	V
Breakdown Voltage	V_{BR}	I_T = 1mA	13.3		16.5	V
Reverse Leakage Current	I_R	V_{RWM} = 12V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 15A, t_P = 8/20μs			25	V
Clamping Voltage	V_C	I_{PP} = 35A, t_P = 8/20μs		26	34	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		45		pF

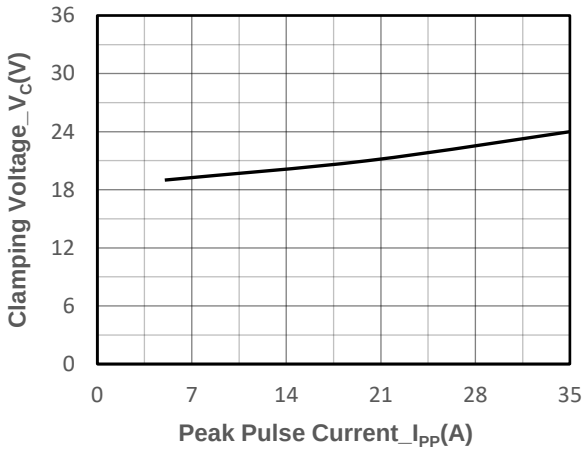
- **Typical Performance Characteristics (T_A=25℃ unless otherwise noted)**



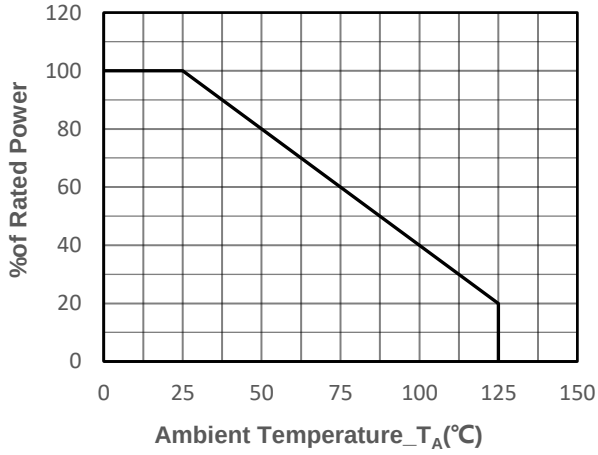
Junction Capacitance vs. Reverse Voltage



8/20μs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature

Package Information

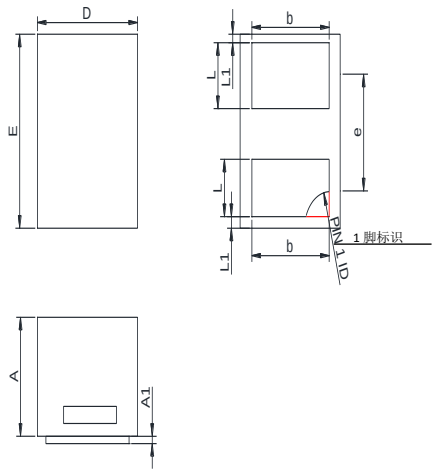
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT12V32N1	DFN1006-2L	10000	7 Inch

Mechanical Data

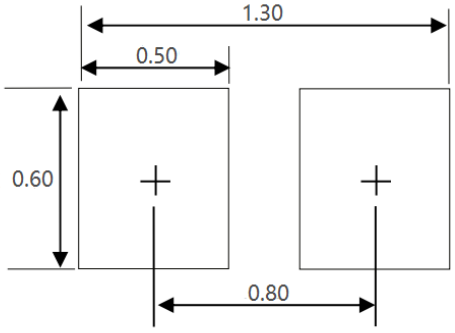
Case: DFN1006-2L

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	

Recommended Pad outline



Unit:mm

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