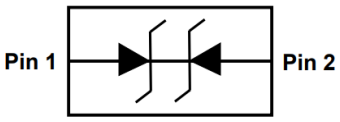
SSCE8V032N1

Ultra-low Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

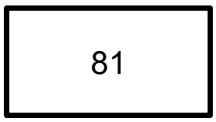
Description

The SSCE8V032N1 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 high-speed data lines. The SSCE8V032N1 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) with ±25kV air and ±20kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, USB 3.0 super speed, VGA, DVI, HDMI,SDI and other high speed line applications.

PIN configuration



Top view



Marking

Feature

- 90W peak pulse power (t_P = 8/20μs)
- DFN1006-2L Package
- Working voltage: 8V
- Low clamping voltage
- Low capacitance
- Low leakage current
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±20kV
  - IEC61000-4-5 (Lightning) 3.5A (8/20μs)
- RoHS Compliant

Applications

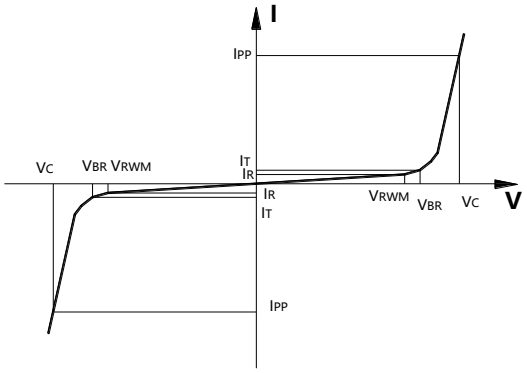
- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

Mechanical data

- Lead finish:100% matte Sn (Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 3 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤3mil

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



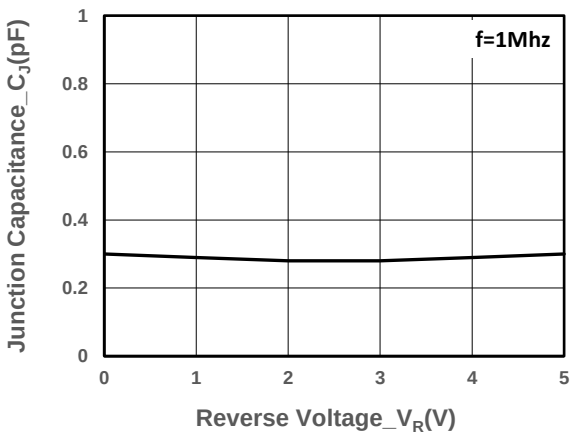
Absolute maximum rating @T_A=25℃

Parameter		Symbol	Value	Unit
Peak Pulse Power（8/20μs）		P_{PP}	90	W
Peak Pulse Current（8/20μs）		I_{PP}	3.5	A
ESD Rating per IEC61000-4-2：	Contact Air	V_{ESD}	20 25	kV
Storage Temperature		T_{STG}	-55/+150	℃
Operating Temperature		T_J	-55/+125	℃

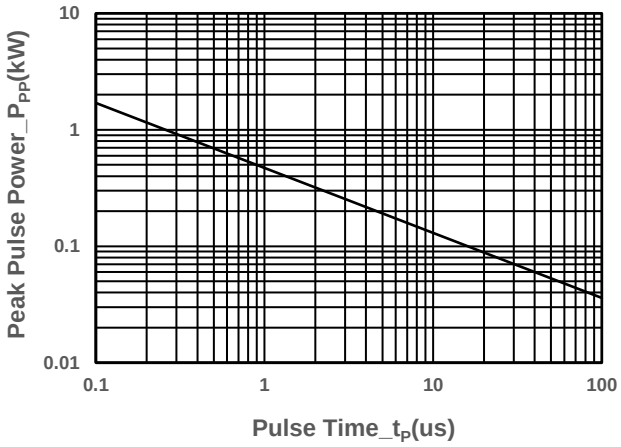
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				8	V
Breakdown Voltage	V_{BR}	I_T = 1mA	9.5			V
Reverse Leakage Current	I_R	V_{RWM} = 8V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			18	V
Clamping Voltage	V_C	I_{PP} = 3.5A, t_P = 8/20μs			26	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		0.3	0.5	pF

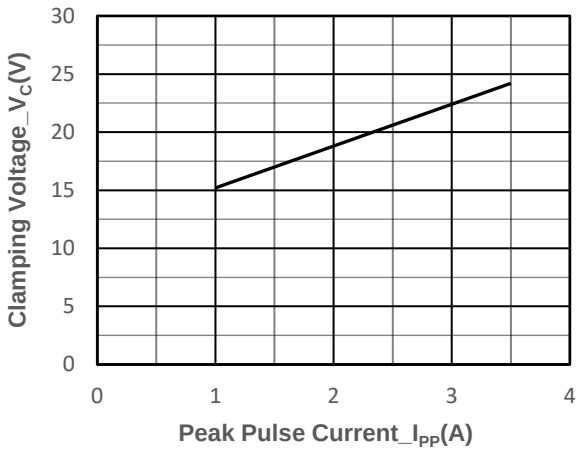
- **Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)**



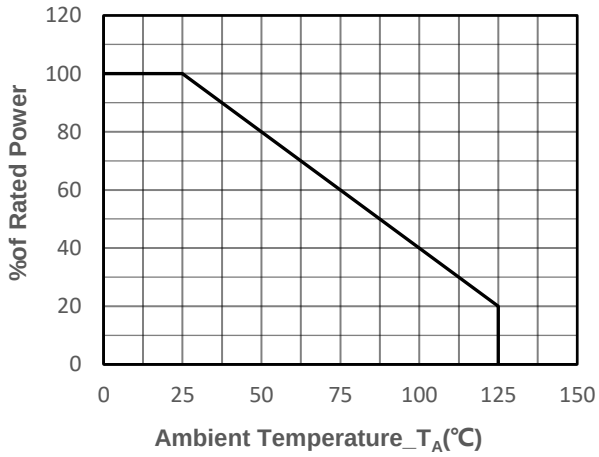
Junction Capacitance vs. Reverse Voltage



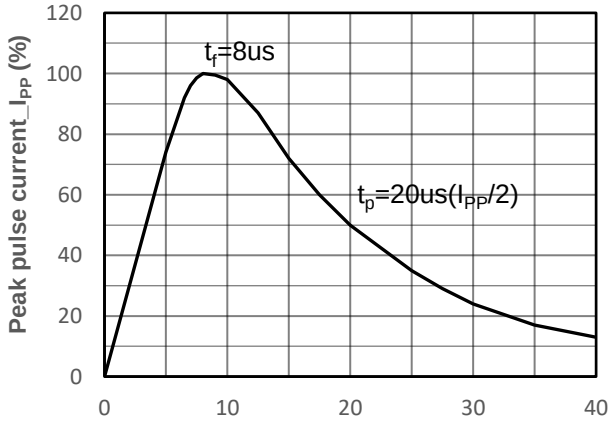
Peak Pulse Power vs. Pulse Time



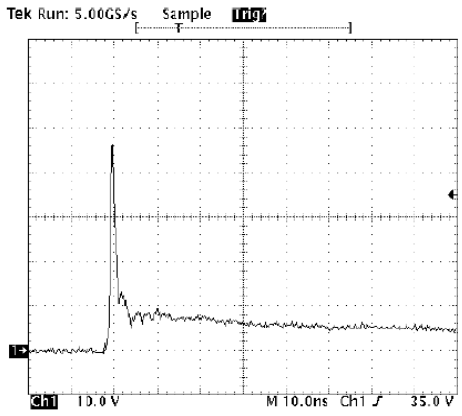
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20us Pulse Waveform



Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000−4−2

Package Information

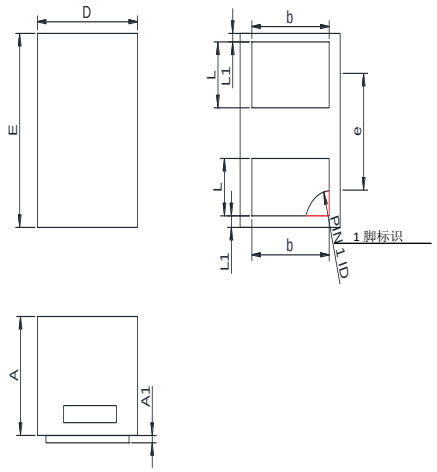
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE8V032N1	DFN1006-2L	10000	7 Inch

Mechanical Data

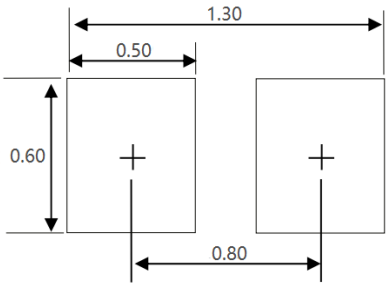
Case: DFN1006-2L

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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