



SSCE3V332N1

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

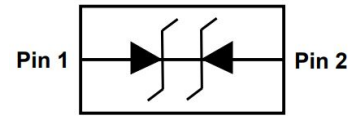
● Description

The SSCE3V332N1 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 SSCE3V332N1 has an ultra-low capacitance with a typical value at 0.2pF, and complies with the IEC 61000-4-2 (ESD) with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a DFN1006-2L leadfree package. The small size, ultra-low capacitance and high ESD surge protection make SSCE3V332N1 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

● Feature

- ✧ 84W peak pulse power ($t_p = 8/20\mu\text{s}$)
- ✧ DFN1006-2L Package
- ✧ Working voltage: 3.3V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 25\text{kV}$ (air), $\pm 20\text{kV}$ (contact)

● PIN configuration



Top view



Marking

● Applications

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

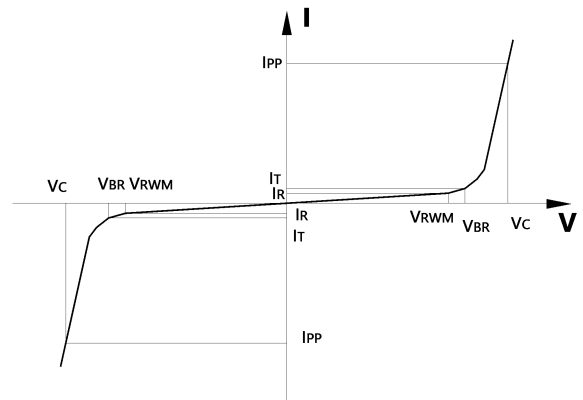
● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Package: DFN1006-2 (1.0×0.6×0.5mm)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17 μm
- ✧ Pin flatness: $\leq 3\text{mil}$



● 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 @TA=25°C

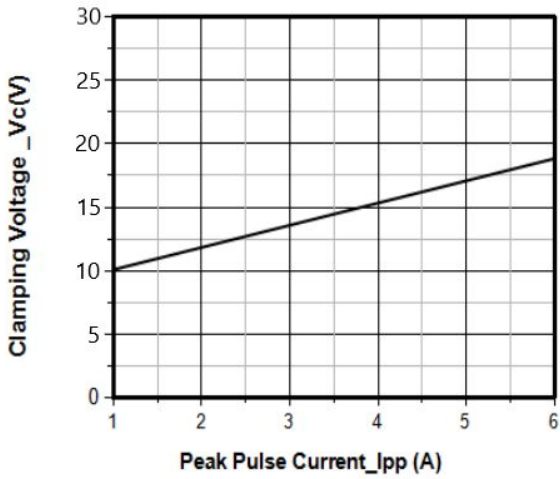
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	84	W
Peak Pulse Current (8/20μs)	I_{PP}	4	A
ESD Rating per IEC61000-4-2:	Contact	20	KV
	Air	25	
Storage Temperature	T_{STG}	-55/+150	°C
Operating Temperature	T_J	-55/+125	°C

● Electrical Characteristics @TA=25°C

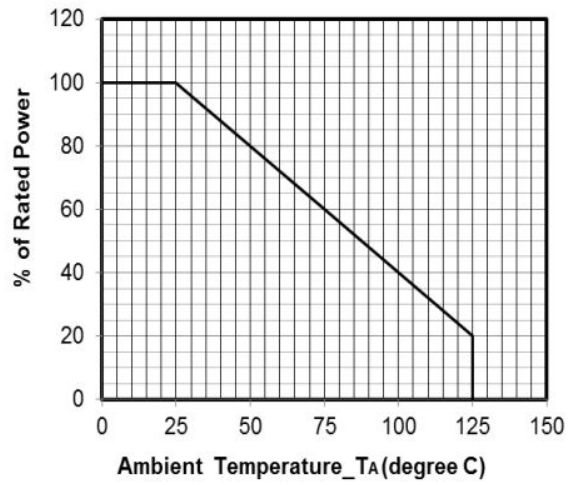
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	4.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3V$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$		10		V
Clamping Voltage	V_C	$I_{PP} = 4A, t_p = 8/20\mu s$		19	21	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		0.2	0.35	pF



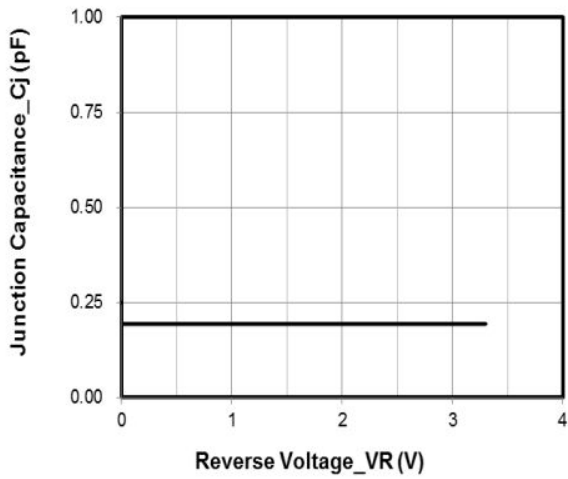
● Typical Performance Characteristics



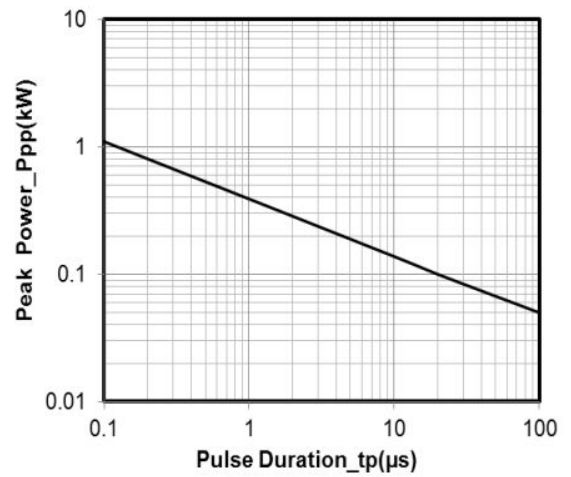
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time



● Package Information

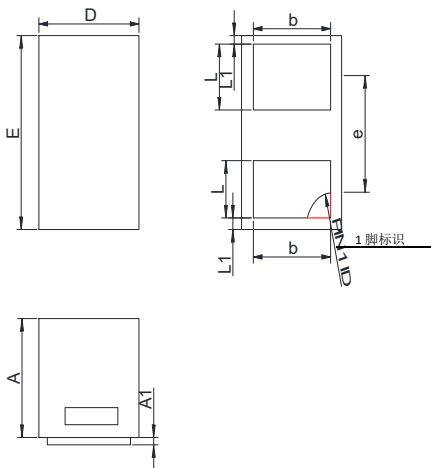
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE3V332N1	DFN1006-2L	10000	7 Inch

Mechanical Data

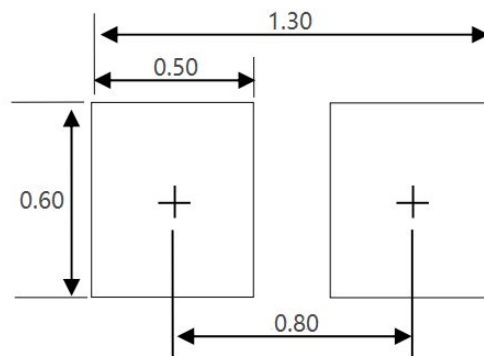
Case:DFN1006-2L

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



- **History Version**

V1.0	First edition	2021-09-07
V1.1	Update typical performance characteristics	2022-05-08

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