



## SSCE3V322N1

1-Line Bidirectional Micro Packaged TVS Diodes for ESD Protection

### ● Description

The SSCE3V322N1 is designed with 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.

The small size and high ESD surge protection make SSCE3V322N1 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.

### ● Feature

- ✧ 60W peak pulse power ( $t_P = 8/20\mu s$ )
- ✧ DFN1006-2L Package
- ✧ Working voltage: 3.3V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
  - Air discharge:  $\pm 30kV$
  - Contact discharge:  $\pm 30kV$
  - IEC61000-4-5 (Lightning) 6A (8/20 $\mu s$ )

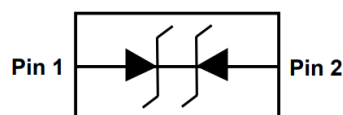
### ● Applications

- ✧ Cellular Handsets and Accessories
- ✧ Personal Digital Assistants
- ✧ Notebooks and Handhelds
- ✧ Portable Instrumentation
- ✧ Digital Cameras
- ✧ Peripherals
- ✧ Audio Players
- ✧ Keypads, Side Keys, LCD Displays

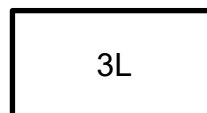
### ● PIN configuration



**DFN1006-2L (Bottom View)**



**Circuit Diagram**



**Marking**

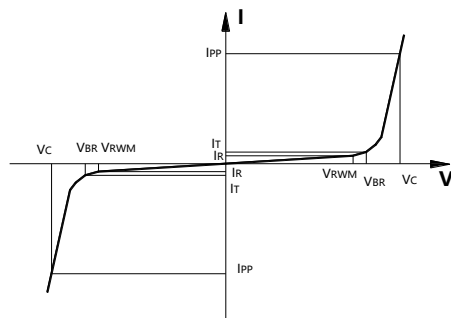
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ Pin flatness:  $\leq 3mil$



## ● 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



## ● Absolute maximum rating ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

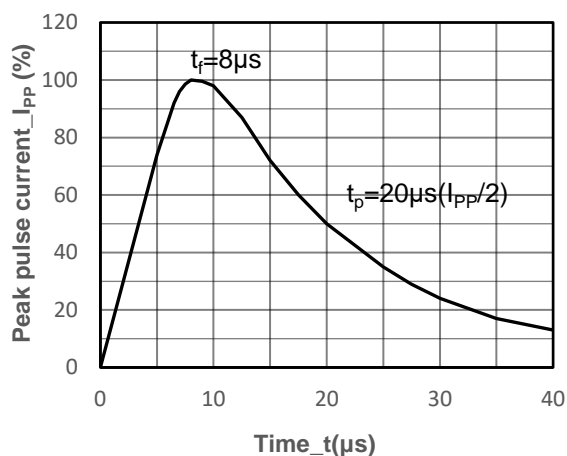
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	60	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	6	A
ESD Rating per IEC61000-4-2:	$V_{ESD}$	30	kV
Contact Air		30	
Storage Temperature	$T_{STG}$	-55/+150	$^{\circ}\text{C}$
Operating Temperature	$T_J$	-55/+125	$^{\circ}\text{C}$

## ● Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

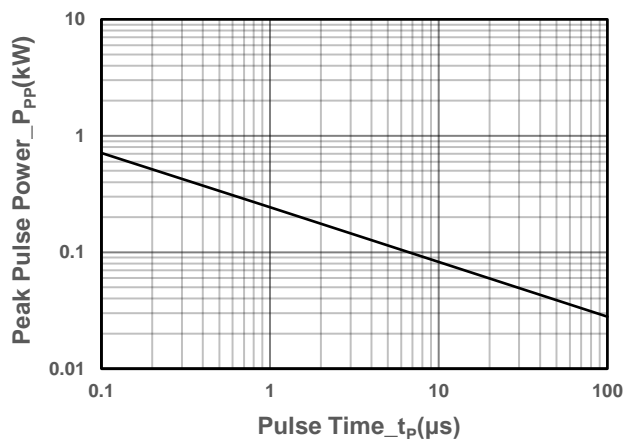
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				3.3	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	3.8		6.2	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 3.3\text{V}$			0.1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$		5.6		V
Clamping Voltage	$V_C$	$I_{PP} = 6\text{A}$ , $t_P = 8/20\mu\text{s}$		7.6	10	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		10	15	pF



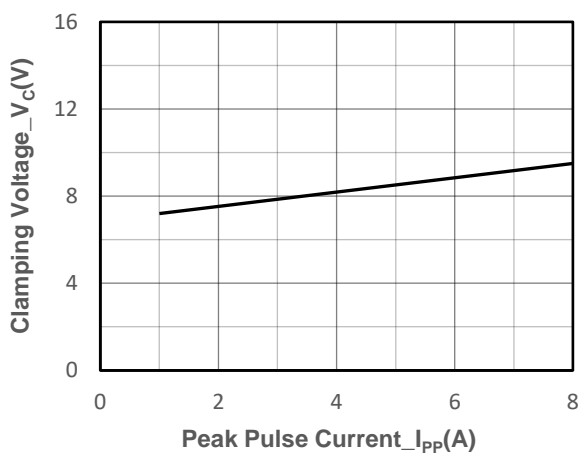
● Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)



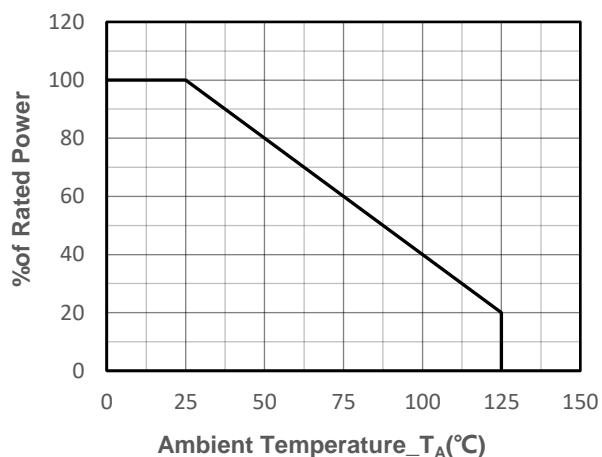
8/20 $\mu\text{s}$  Pulse Waveform



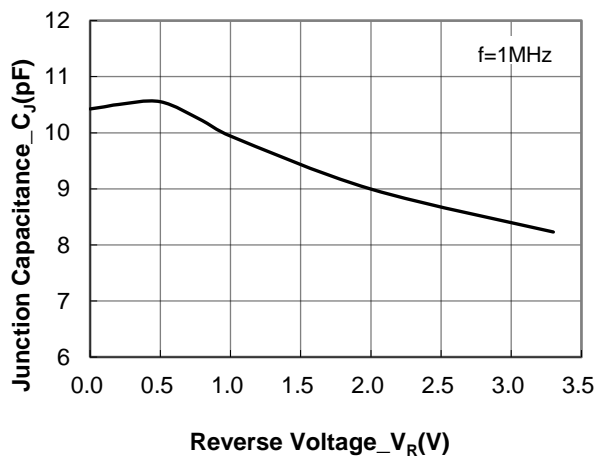
Peak Pulse Power vs. Pulse Time



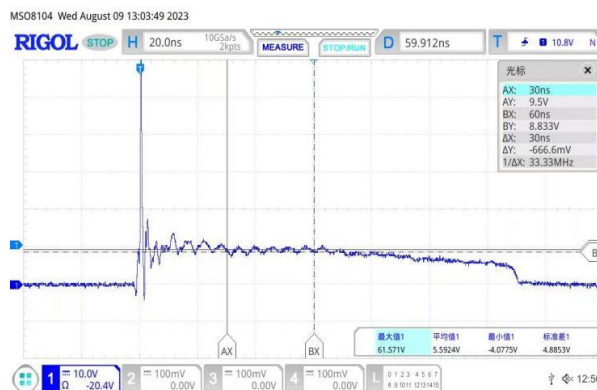
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



Junction Capacitance vs. Reverse Voltage



Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8kV Contact per IEC61000-4-2



## ● Package Information

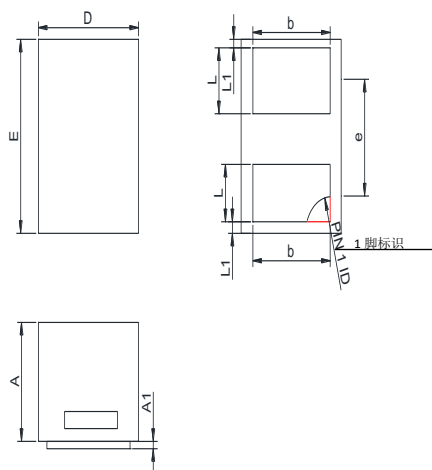
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE3V322N1	DFN1006-2L	10000	7 Inch

### Mechanical Data

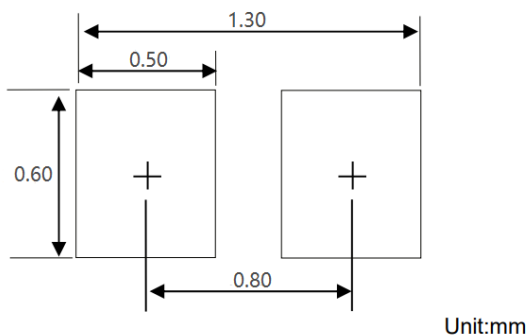
Case: DFN1006-2L

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





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