



## SSCE3V342N1

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

### ● Description

The SSCE3V342N1 is a bi-directional TVS diode. It is designed with AF 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 overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

### ● Feature

- ◇ 80W 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) 8A (8/20 $\mu s$ )

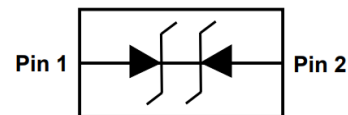
### ● Applications

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

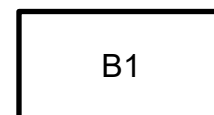
### ● PIN configuration



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



**Circuit Diagram**



**Marking**

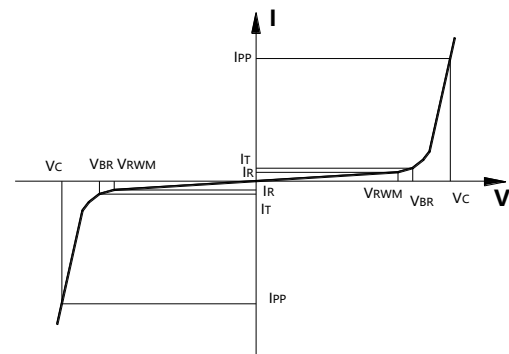
### ● Mechanical data

- ◇ Package: DFN1006-2L(1.0x0.6x0.5mm)
- ◇ Lead finish: 100% matte Sn (Tin)
- ◇ Device meets MSL 3 requirements
- ◇ Case Material: "Green" Molding Compound
- ◇ RoHS Compliant
- ◇ 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
$C_J$	Junction Capacitance



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

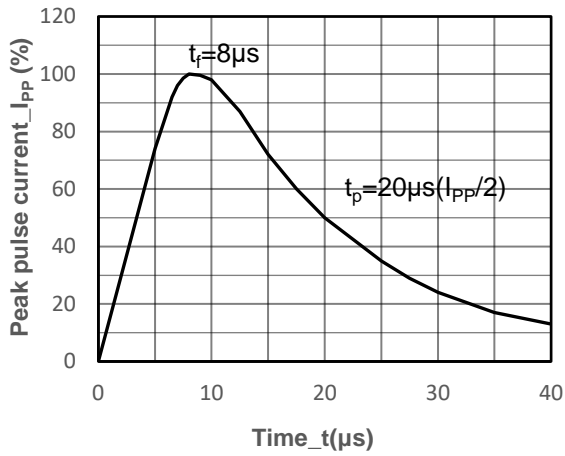
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu$ s)	$P_{PP}$	80	W
Peak Pulse Current (8/20 $\mu$ s)	$I_{PP}$	8	A
ESD Rating per IEC61000-4-2:			
Contact	$V_{ESD}$	$\pm 30$	kV
Air		$\pm 30$	
Storage Temperature	$T_{STG}$	-55/+150	$^{\circ}C$
Operating Temperature	$T_J$	-55/+125	$^{\circ}C$

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

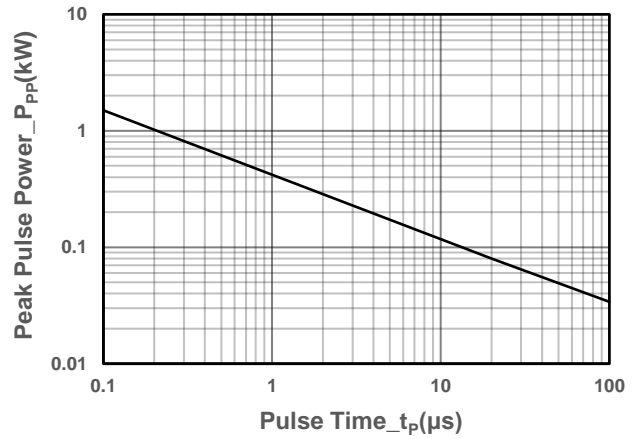
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				3.3	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	3.8		6.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 3.3V$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_P = 8/20\mu s$		6		V
Clamping Voltage	$V_C$	$I_{PP} = 8A, t_P = 8/20\mu s$		8	10	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		13	20	pF



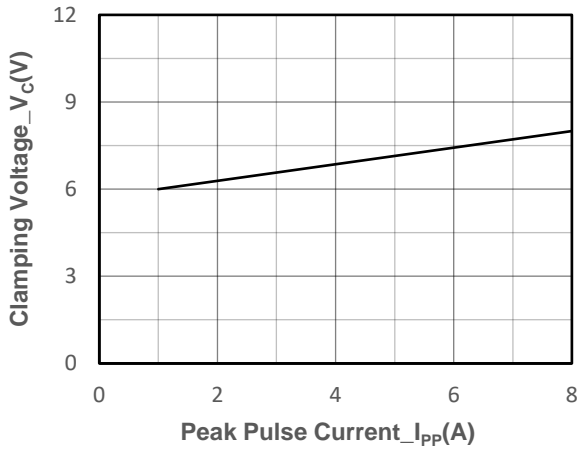
● Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



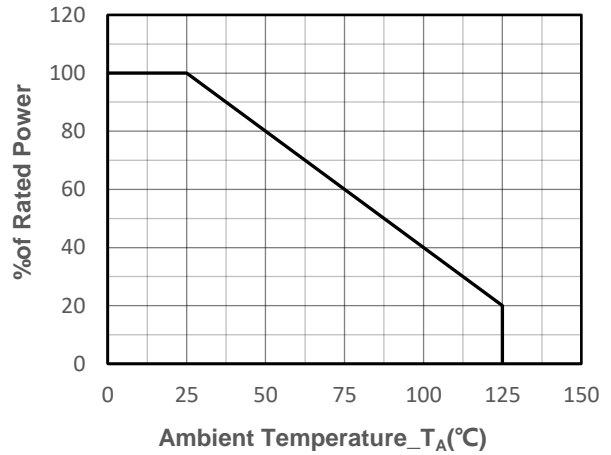
8/20µs Pulse Waveform



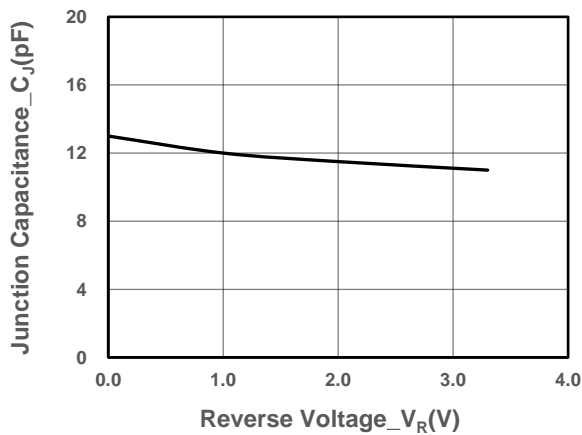
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



Junction Capacitance vs. Reverse Voltage



- **Package Information**

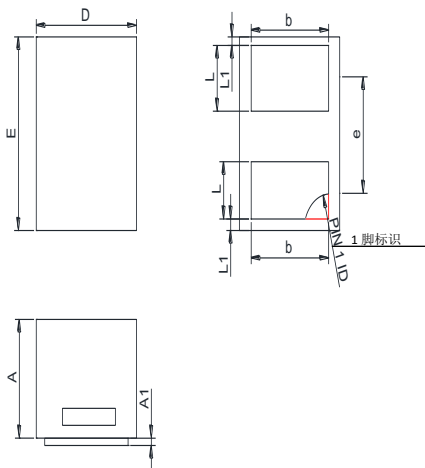
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE3V342N1	DFN1006-2L	10000	7 Inch

### Mechanical Data

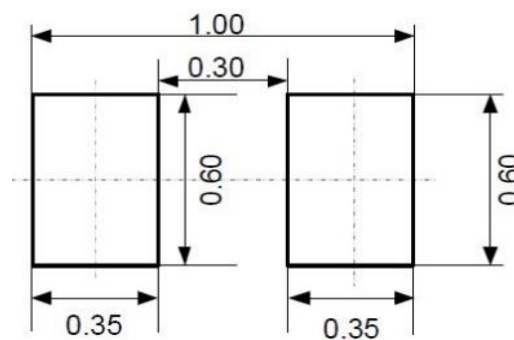
Case: DFN1006-2L

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)





## DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.