



SSCE5V082N1

1-Line Bidirectional Micro Packaged TVS Diodes for ESD Protection

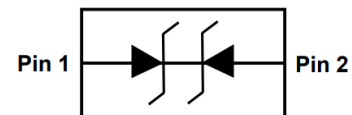
● Description

The SSCE5V0B2N1 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 SSCE5V0B2N1 complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV 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 SSCE5V0B2N1 an ideal choice to protect cell phone, digital cameras, and many other portable applications.

● Feature

- ◇ 210W peak pulse power ($t_P = 8/20\mu s$)
- ◇ DFN1006-2L Package
- ◇ Working voltage: 5.0V
- ◇ Low clamping voltage
- ◇ Low capacitance (Max value:1.55pF)
- ◇ Low clamping voltage
- ◇ RoHS compliant
- ◇ Complies with following standards:
 - IEC61000-4-2(ESD) ± 30 kV(contact),
 ± 30 kV(air)
 - IEC61000-4-5 (Lightning) 15A (8/20 μs)

● PIN configuration



Top View



Marking

● Applications

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

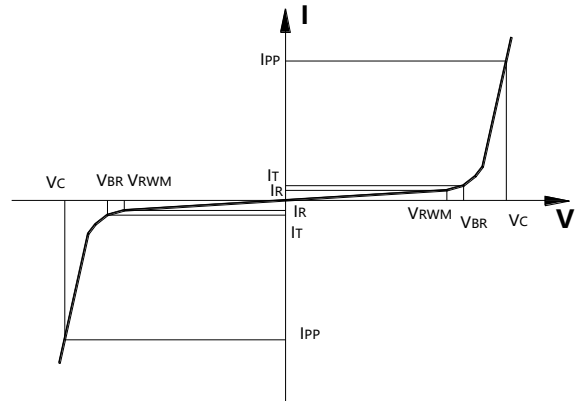
● Mechanical data

- ◇ 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 μm
- ◇ Pin flatness: ≤ 3 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



● Absolute maximum rating @ $T_A=25^{\circ}C$

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μ s)	P_{PP}	210	W
Peak Pulse Current (8/20 μ s)	I_{PP}	15	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Storage Temperature	T_{STG}	-55/+150	$^{\circ}C$
Operating Temperature	T_J	-55/+125	$^{\circ}C$
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}C$

● Electrical Characteristics @ $T_A=25^{\circ}C$

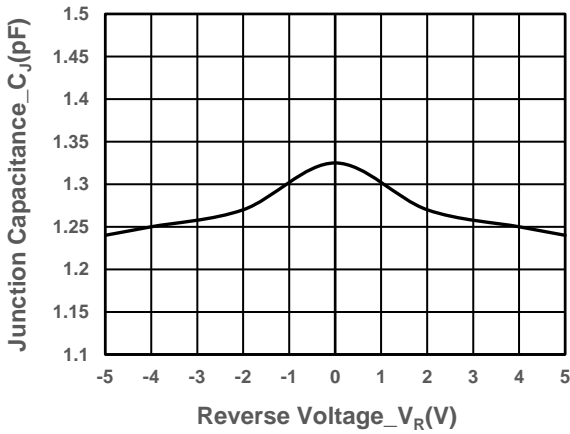
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	6	7.5		V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$		1	50	nA
Clamping Voltage ³⁾	V_{CL}	$I_{PP} = 1A, t_P = 8/20\mu s$		8		V
		$I_{PP} = 15A, t_P = 8/20\mu s$		12	14	V
Clamping Voltage ¹⁾	V_{CL}	$I_{PP} = 16A, t_P = 100ns$		12		V
Dynamic resistance ¹⁾	R_{DYN}			0.3		Ω
Clamping Voltage ²⁾	V_{CL}	$V_{ESD} = 8kV$		9		V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		1.35	1.55	pF

Notes:

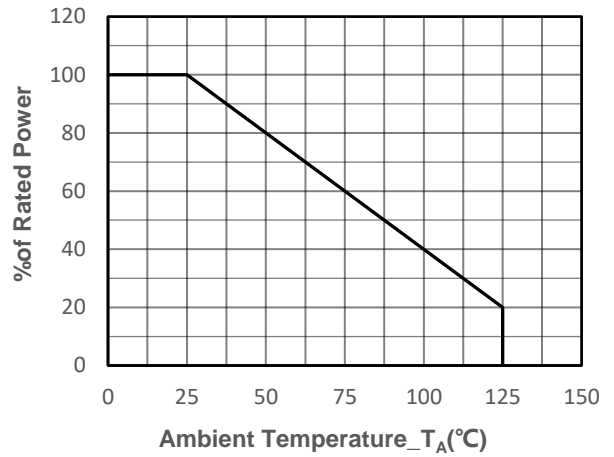
- 1) TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
- 2) Contact discharge mode, according to IEC61000-4-2.
- 3) Non-repetitive current pulse, according to IEC61000-4-5.



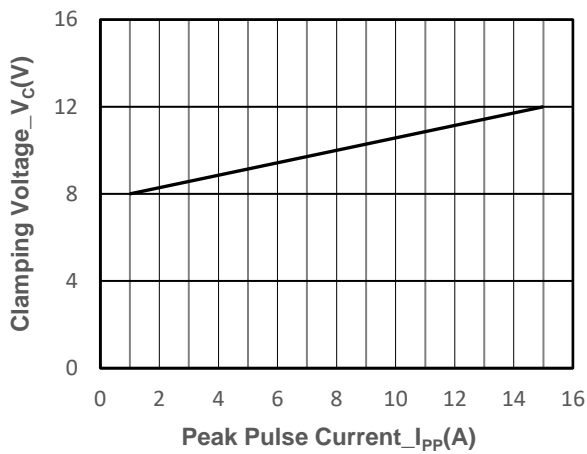
● Typical Performance Characteristics



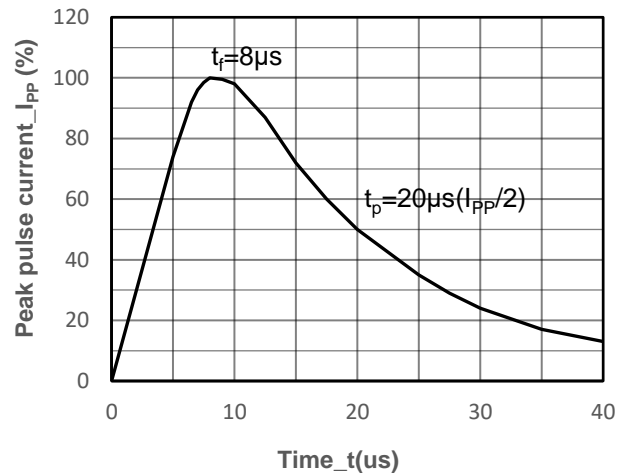
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



8/20µs Pulse Waveform



● Package Information

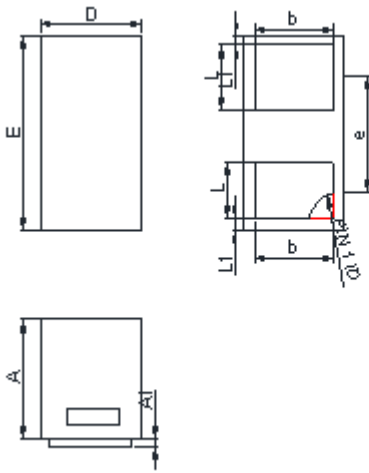
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V0B2N1	DFN1006-2L	10000	7 Inch

Mechanical Data

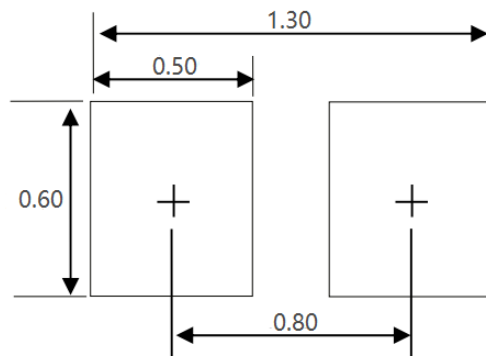
Case: DFN1006-2L

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)



Unit:mm



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