



SSCE3V311N7

Ultra Low Capacitance Array for ESD Protection

● Description

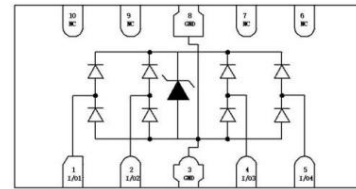
The SSCE3V311N7 provides a typical line to line capacitance of 0.3pF between I/O pins and low insertion loss up to 3.0GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE(Cable Discharge Events),and EFT (electrical fast transients).

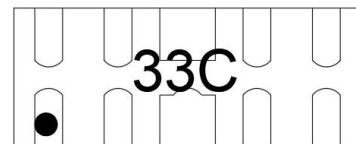
● Feature

- ✧ 50W peak pulse power ($t_P = 8/20\mu s$)
- ✧ DFN2510-10L Package
- ✧ Working voltage: 3.3V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high-speed data
- ✧ Complies with following standards:
 - IEC61000-4-2(ESD) $\pm 20kV$ (air),
 - IEC61000-4-2(ESD) $\pm 15kV$ (contact)

● PIN configuration



Top view



Marking

● Applications

- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

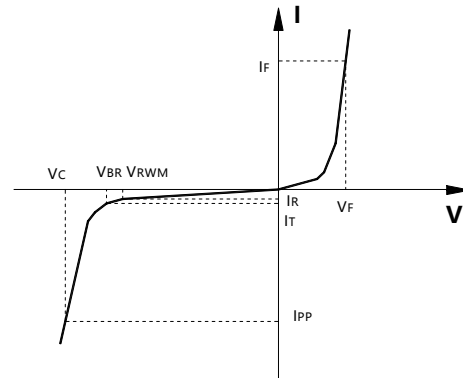
● Mechanical data

- ✧ 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 um
- ✧ 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 @TA=25°C

Parameter	Symbol	Value	Units
Peak Pulse Power (8/20μs)	P_{PP}	50	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
Storage Temperature	T_{STG}	-55/+150	°C
Operating Temperature	T_J	-55/+150	°C

● Electrical Characteristics @TA=25°C

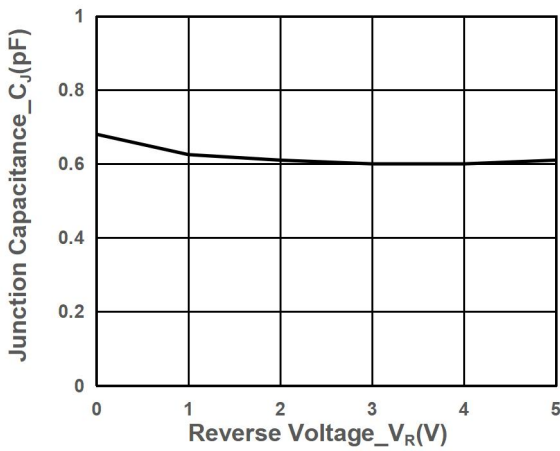
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to GND			3.3	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ Any I/O to GND	3.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3\text{V}$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$			6.5	V
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$, $t_P = 8/20\mu\text{s}$			10	V
ESD Clamping Voltage(Note1)	V_{CL-ESD}	IEC 61000-4-2+ 8kV($I_{TLP} = 16\text{A}$), contact mode, $T = 25^\circ\text{C}$, any I/O pin to GND		22		V
Dynamic resistance	R_{DYN}			0.75		Ω
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins		0.3	0.4	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to GND			0.8	pF

Note 1: ESD Clamping Voltage was measured by Transmission Line Pulsing (TLP) System.

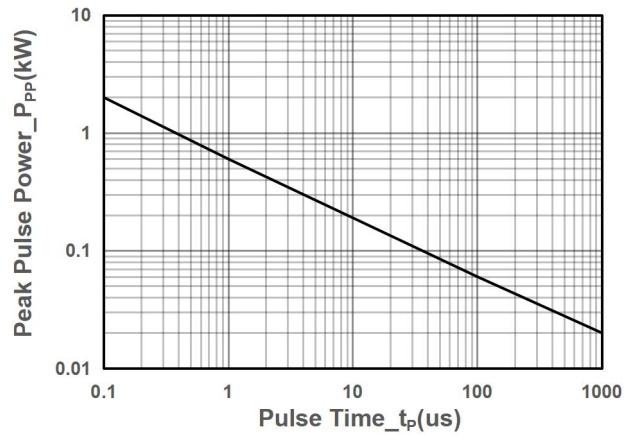
TLP conditions: $Z_0 = 50\ \Omega$, $t_p = 100\text{ns}$, $t_r = 1\text{ns}$.



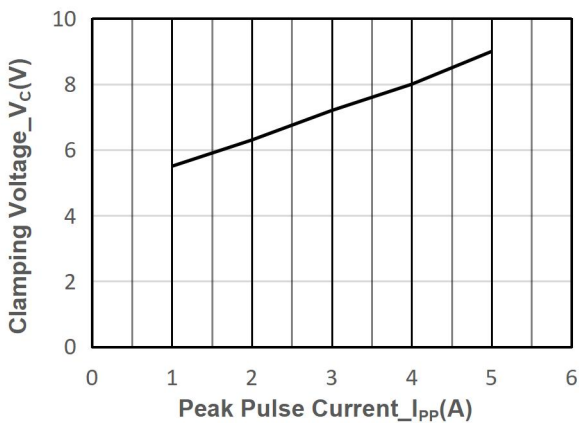
● Typical Performance Characteristics



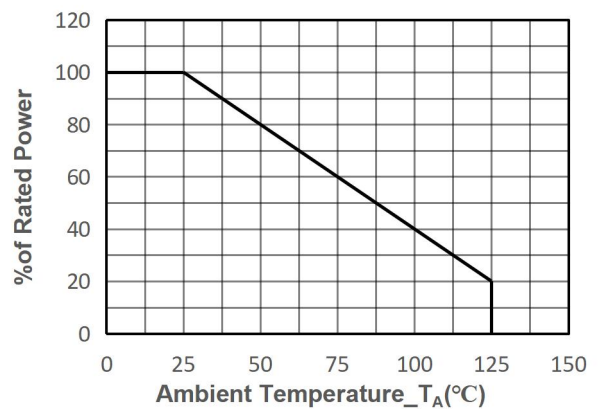
Junction Capacitance vs. Reverse Voltage



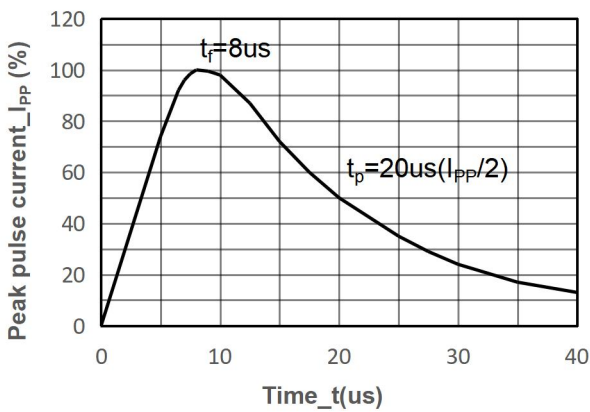
Peak Pulse Power vs. Pulse Time



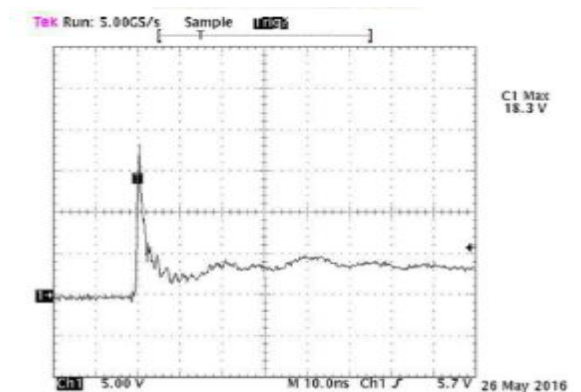
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20us Pulse Waveform



Note: Data is taken with a 10x attenuator

Contact discharge current waveform

per IEC61000-4-2



● Package Information

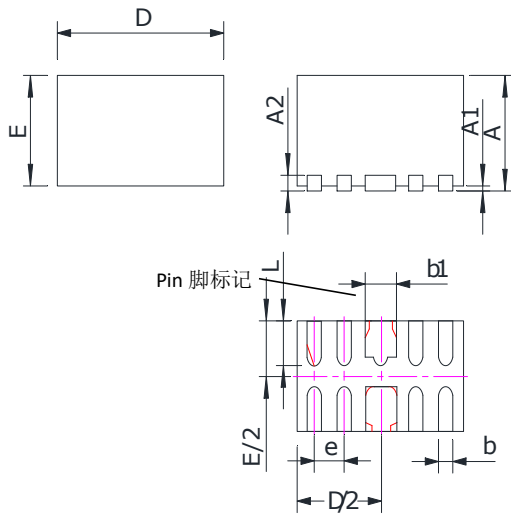
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE3V311N7	DFN2510-10L	3000	7 Inch

Mechanical Data

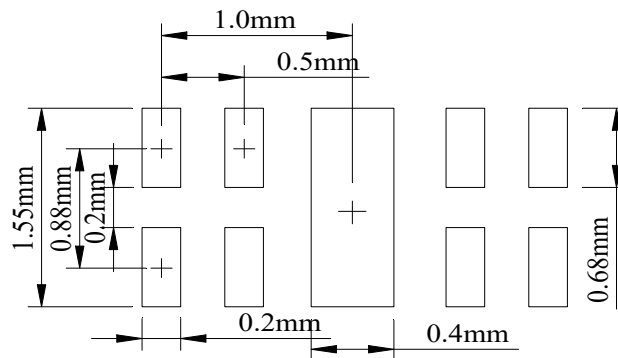
Case: DFN2510-10L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.65
A1	0.05REF	
A2	0.15REF	
b	0.15	0.25
b1	0.30	0.50
D	2.424	2.576
E	0.924	1.076
e	0.50REF	
L	0.30	0.45

Recommended Pad outline





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