SSCE5V021N7

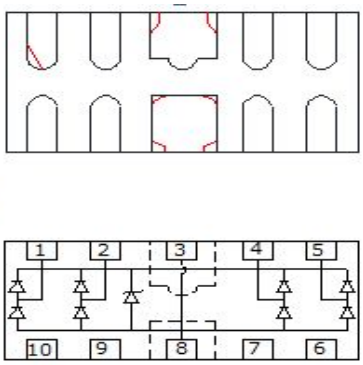
Ultra Low Capacitance Array for ESD Protection

Description

The SSCE5V021N7 provides a typical line to line capacitance of 0.6pF between I/O pins and low insertion loss up to 3GHz 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).

PIN configuration



Top view

Feature

- 60W peak pulse power (tP = 8/20μs)
- DFN2510 Package
- Working voltage: 5V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±25kV(air),±25kV(contact)

Applications

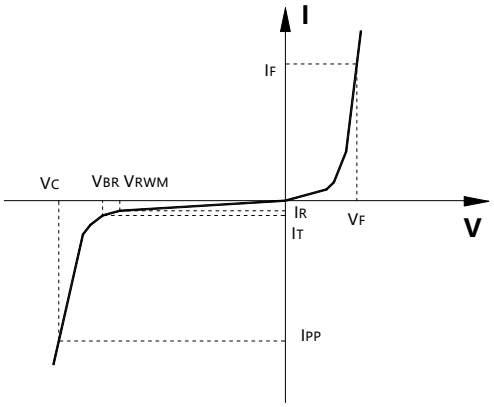
- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Projection TV
- Notebooks, Desktops, Server
- USB 1.1/2.0/3.0/3.1/OTG

Mechanical data

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤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	Junction Capacitance



Absolute maximum rating @TA=25℃

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power（8/20μS）	60	W
T_{STG}	Storage Temperature	-55/+150	℃
T_J	Operating Temperature	-55/+150	℃

Electrical Characteristics @TA=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground		5		V
Breakdown Voltage	V_{BR}	It = 1mA Any I/O to Ground	6			V
Reverse Leakage Current	I_R	VRWM =5.0V, T=25℃			1	μA
Diode Forward Voltage	VF	IF = 15mA		0.85	1.2	V
Clamping Voltage	V_C	IPP =1A, tP = 8/20μs		8.7		V
Clamping Voltage	V_C	IPP=3.4A, tP = 8/20μs		11.7		V
Junction Capacitance	C_J	VR = 0V, f = 1MHz, between I/O pins		*0.3*	0.4	pF
		VR = 0V, f = 1MHz, any I/O pin to Ground		0.6	0.8	pF

- **Typical Performance Characteristics**

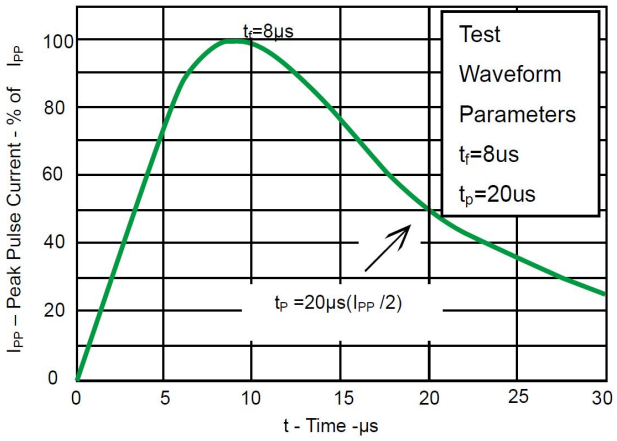


Fig 1.Pulse Waveform

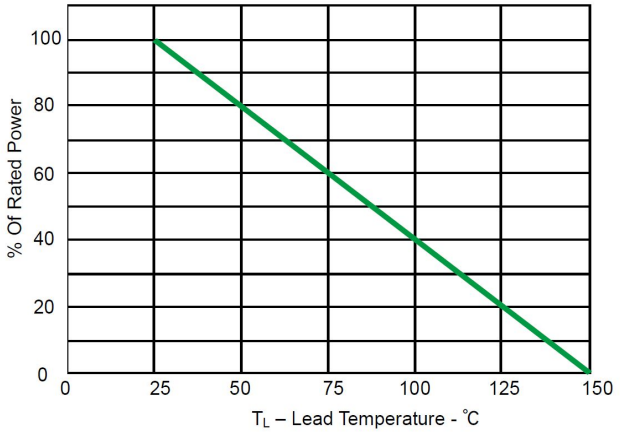
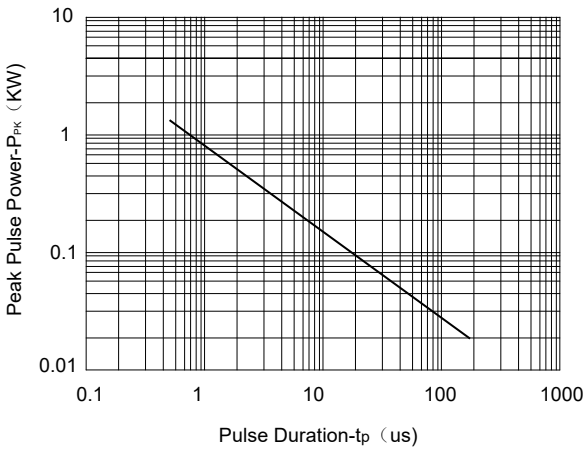
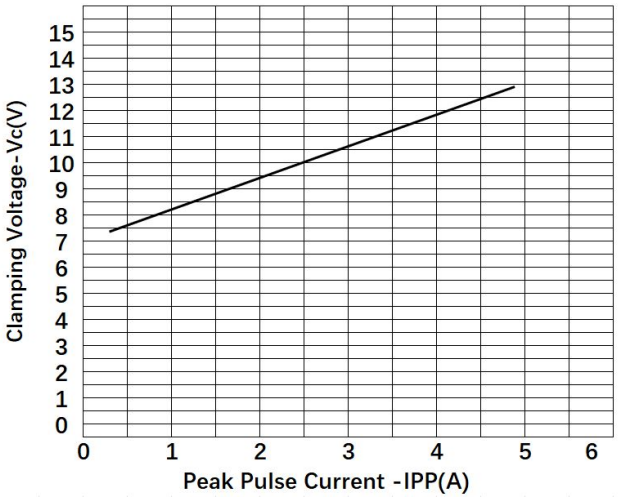


Fig 2.Power Derating Curve



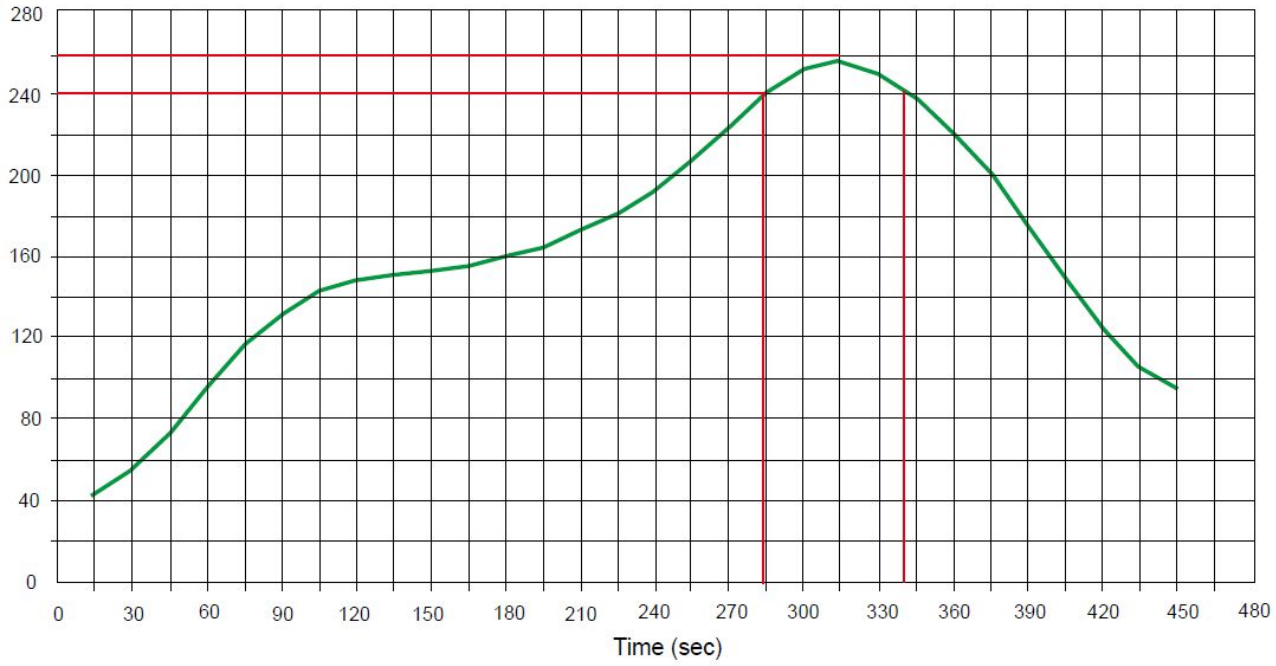
Non-Repetitive Peak Pulse Power vs. Pulse Time



Clamping Voltage vs Peak Pulse Current

- **Solder Reflow Recommendation**

Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec



● Package Information

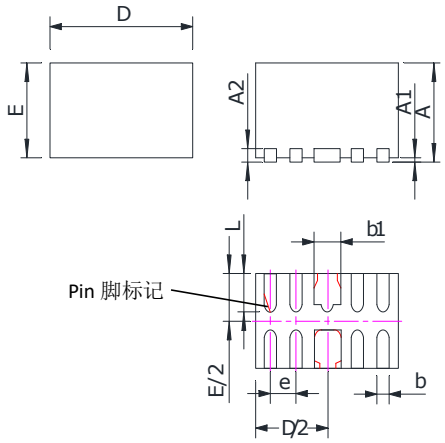
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V021N7	DFN2510	3000	7 Inch

Mechanical Data

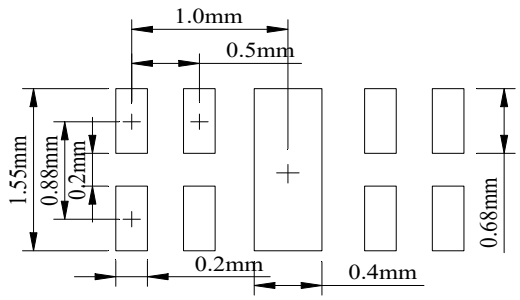
Case:DFN2510

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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