



SSCE05241N7

Ultra Low Capacitance Array for ESD Protection

● Description

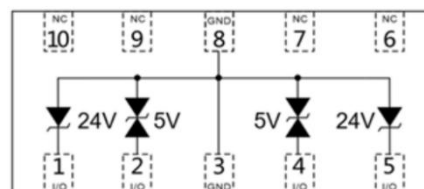
SSCE05241N7 is a four channels low capacitance ESD protection array, SSCE05241N7 is designed for asymmetrical (5V and 24V) protection in multi-point data transmission standard PD (Power Delivery) applications.

SSCE05241N7 uses ultra-small DFN2510-10L package. Each SSCE05241N7 device can protect four high-speed data lines. The combined features of low capacitance, ultra-small size and high ESD robustness make SSCE05241N7 ideal for high-speed data ports and high frequency line applications. The low clamping voltage of the SSCE05241N7 guarantees a minimum stress on the protected IC.

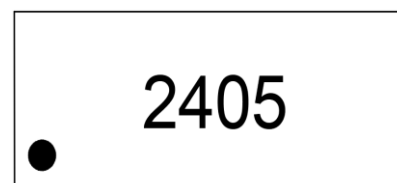
● Feature

- ✧ 150W/70W peak pulse power ($t_P = 8/20\mu s$)
- ✧ DFN2510-10L Package
- ✧ Working voltage: 24V/5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high-speed data
- ✧ Complies with following standards:
 - Pin2 or Pin4 to Pin3&8
 - IEC61000-4-2(ESD) $\pm 30kV$ (air),
 - IEC61000-4-2(ESD) $\pm 30kV$ (contact)
 - Pin1 or Pin5 to Pin3&8
 - IEC61000-4-2(ESD) $\pm 15kV$ (air),
 - IEC61000-4-2(ESD) $\pm 10kV$ (contact)

● PIN configuration



Top View



Marking

● Applications

- ✧ PD Charger or Adapter
- ✧ High-speed data lines
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB Type-C

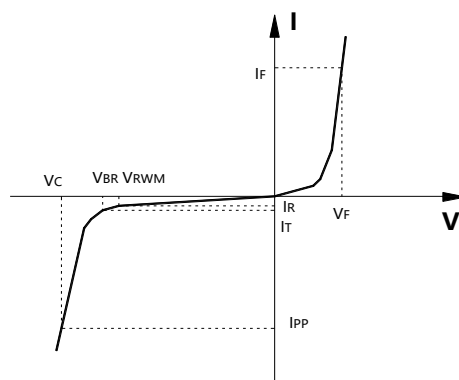
● Mechanical data

- ✧ 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: $\leq 3mil$



- **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 @ $T_A=25^{\circ}\text{C}$**

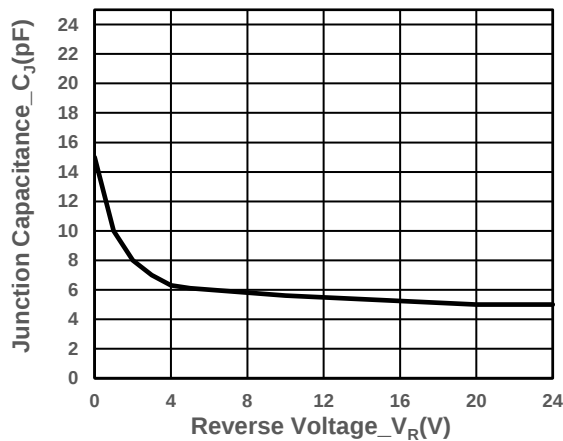
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 μs)	P_{PP}	150/70	W
Peak Pulse Current (8/20 μs)	I_{PP}	3/6	A
Storage Temperature	T_{STG}	-40/+125	$^{\circ}\text{C}$
Operating Temperature	T_J	-55/+150	$^{\circ}\text{C}$

- **Electrical Characteristics @ $T_A=25^{\circ}\text{C}$**

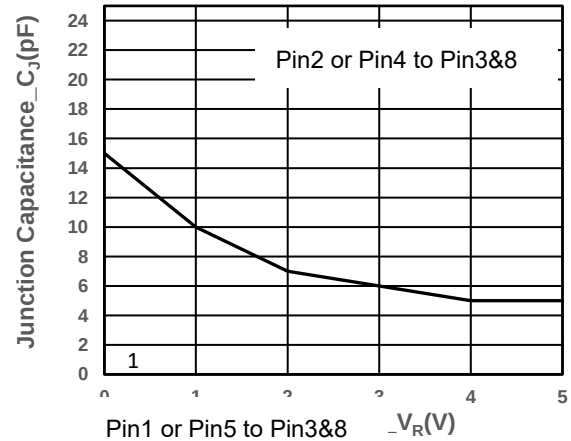
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Pin1 or Pin5 to Pin3&8			24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ Pin1 or Pin5 to Pin3&8	27			V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$ Pin1 or Pin5 to Pin3&8			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 3\text{A}$, $t_p = 8/20\mu\text{s}$ Pin1 or Pin5 to Pin3&8		42	50	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Pin1 or Pin5 to Pin3&8		15	25	pF
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Pin1 or Pin5 to Pin3&8			5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ Pin2 or Pin4 to Pin3&8	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$ Pin2 or Pin4 to Pin3&8			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 6\text{A}$, $t_p = 8/20\mu\text{s}$ Pin2 or Pin4 to Pin3&8		9	12	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Pin2 or Pin4 to Pin3&8		15	25	pF



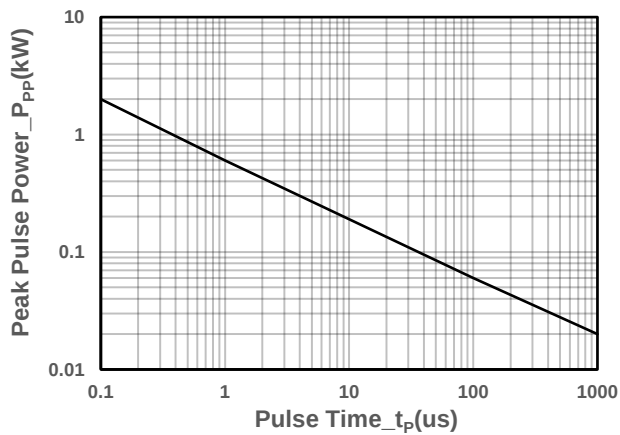
Typical Performance Characteristics



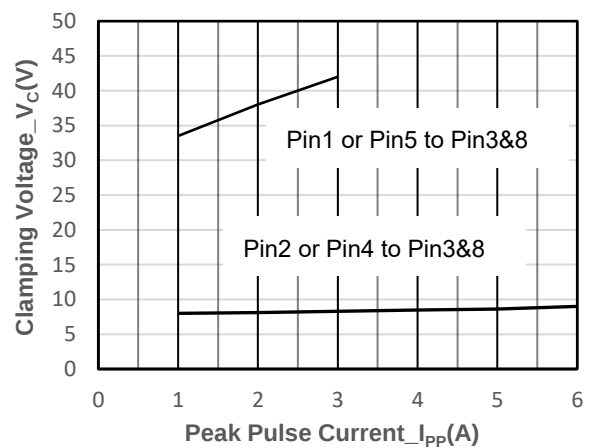
Junction Capacitance vs. Reverse Voltage



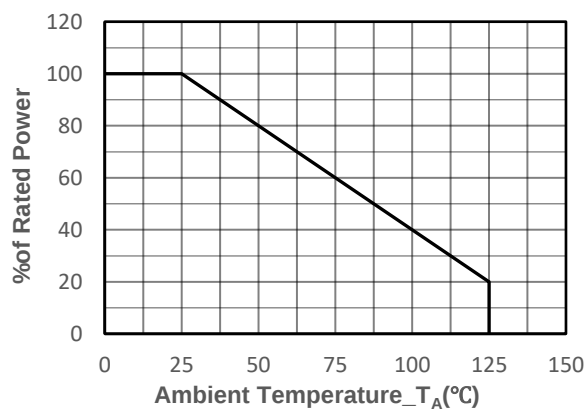
Junction Capacitance vs. Reverse Voltage



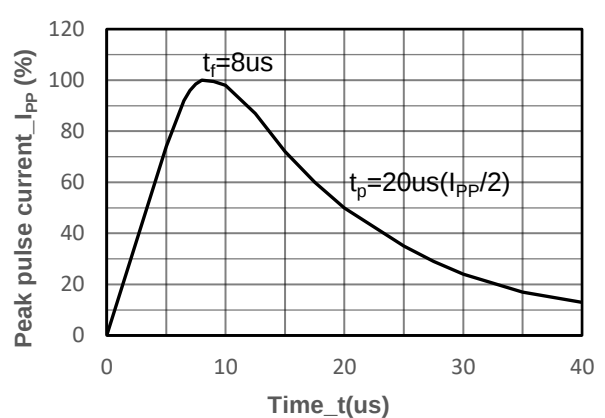
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20us Pulse Waveform



● Package Information

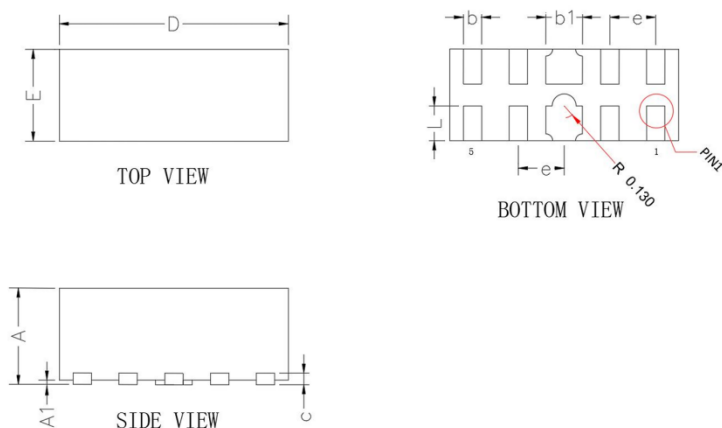
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE05241N7	DFN2510-10L	3000	7 Inch

Mechanical Data

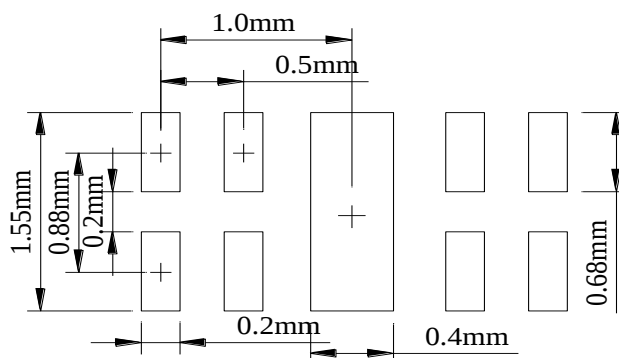
Case: DFN2510-10L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.65
A1	0.05REF	
A2	0.15	0.25
b	0.30	0.50
b1	0.15REF	
D	2.40	2.60
E	0.90	1.10
e	0.50BSC	
L	0.30	0.45

Recommended Pad outline





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