

Features

- Ultra small package: 1.2x1.0x0.5mm
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 6-pin leadless package
- Up to 2-line protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ±30kV
Contact discharge: ±25kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 5A (8/20µs)
- RoHS Compliant

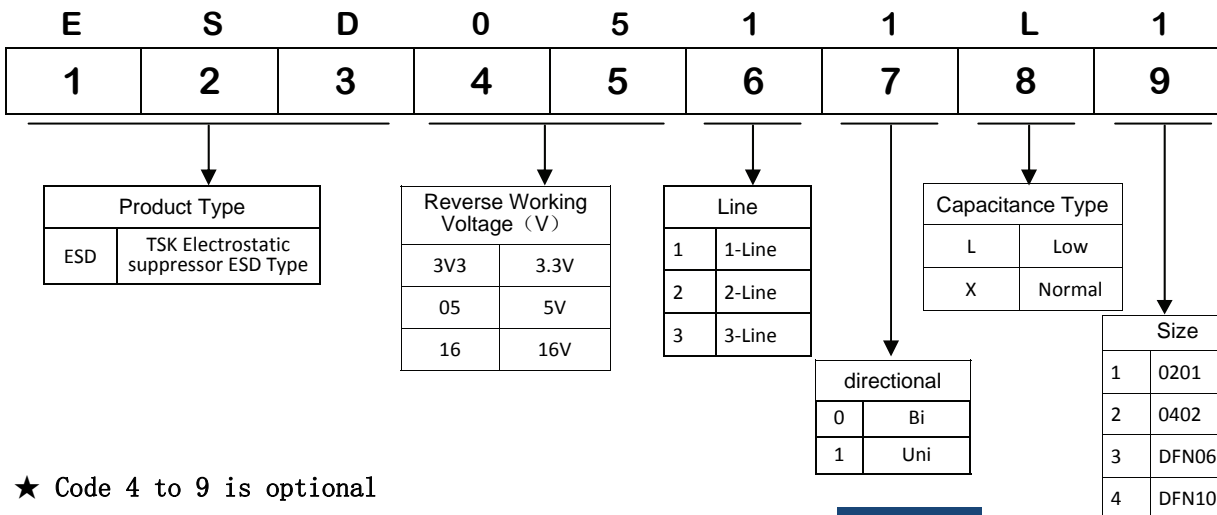
Mechanical Characteristics

- Package: DFN1210-6 (1.2x1.0x0.5mm)
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram

Applications

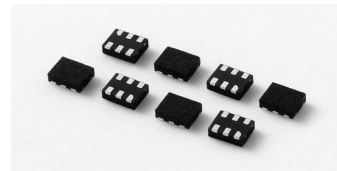
- Cellular Handsets and Accessories
- USB Ports
- Video Interface
- MMC/SD Ports

Part Number Code

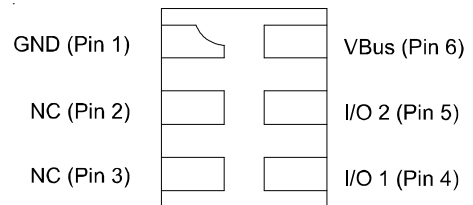


Description

The ESD0521L5 is an uni-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 high-speed data lines. The ESD0521L5 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into an ultra-small 1.2x1.0x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make ESD0521L5 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.



Dimensions and Pin Configuration



Pin Schematic

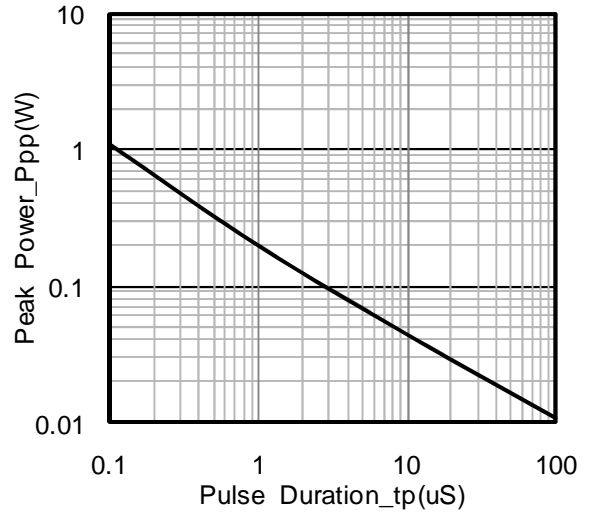
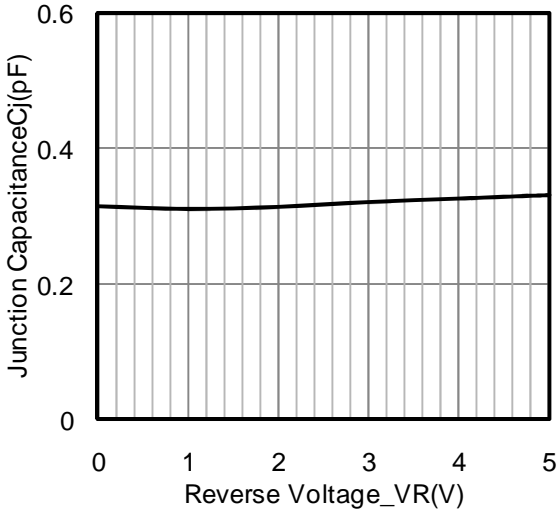
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	125	W
Peak Pulse Current (8/20 μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 25	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

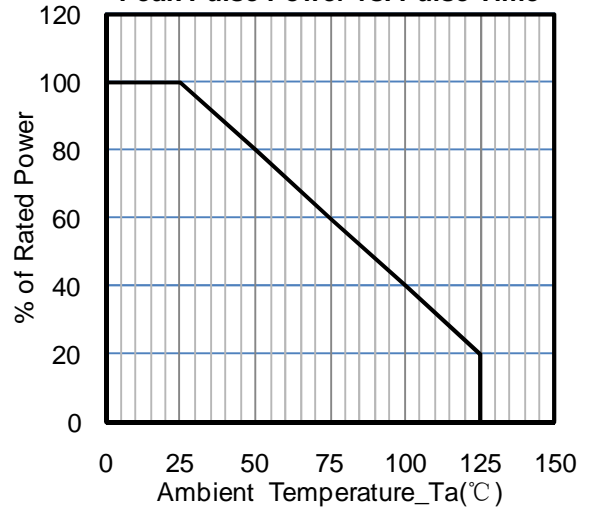
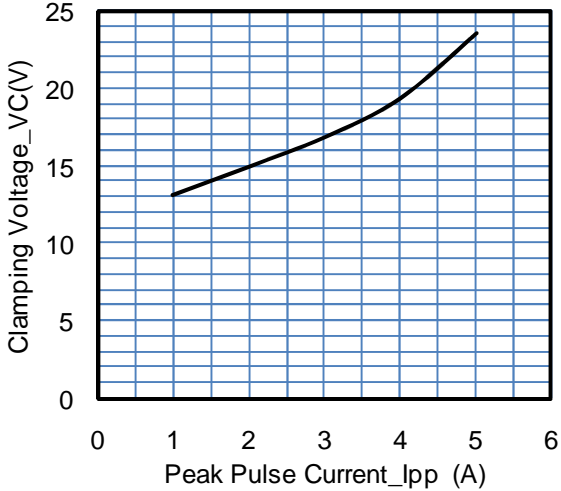
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 5V
Clamping Voltage	V _C			15	V	I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			25	V	I _{PP} = 5A (8 x 20 μs pulse), any I/O pin to ground
Junction Capacitance	C _J		0.3	0.5	pF	V _R = 0V, f = 1MHz, any I/O pin to ground

Typical Performance Characteristics (TA=25°C unless otherwise Specified)



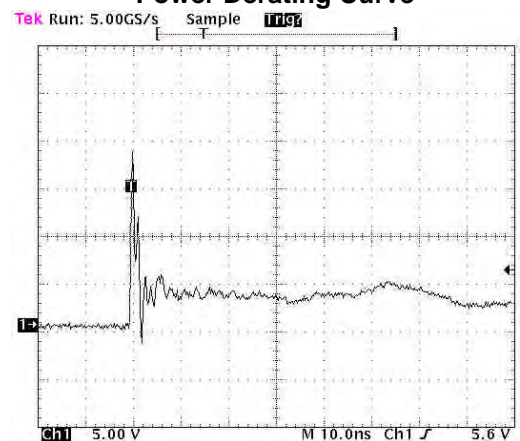
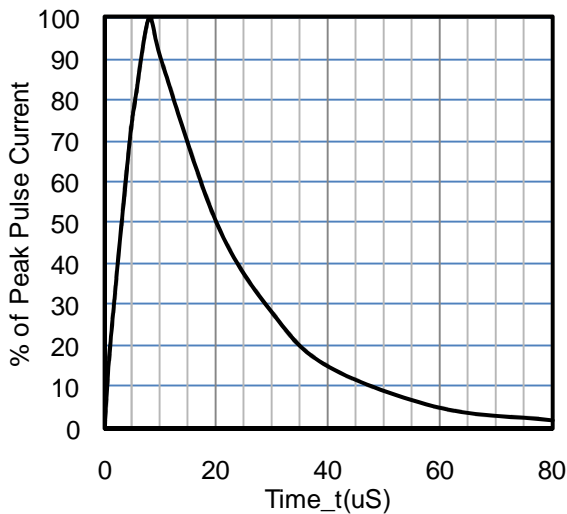
Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

Power Derating Curve

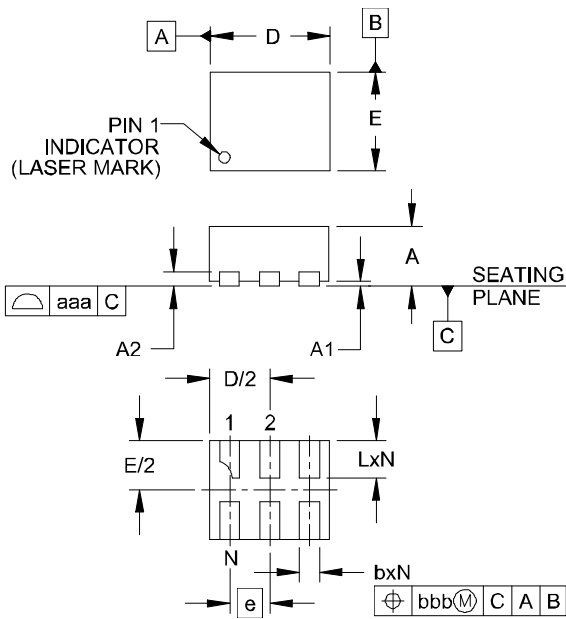


8 X 20us Pulse Waveform

ESD Clamping Voltage

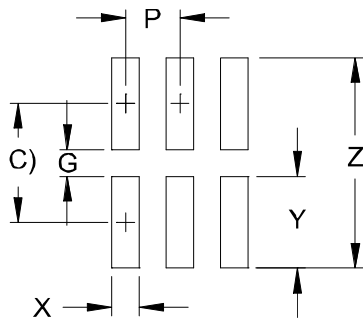
8 kV Contact per IEC61000-4-2

DFN1210-6 Package Outline Drawing



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.023	.026	0.50	0.58	0.65
A1	0.00	.001	.002	0.00	0.03	0.05
A2		(.005)			(0.13)	
b	.006	.008	.010	0.15	0.20	0.25
D	.043	.047	.051	1.10	1.20	1.30
E	.035	.039	.043	0.90	1.00	1.10
e	.016 BSC			0.40 BSC		
L	.012	.015	.017	0.30	0.38	0.425
N	6			6		
aaa	.003			0.08		
bbb	.004			0.10		

Suggested Land Pattern



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.034)	(0.875)
G	.008	0.20
P	.016	0.40
X	.008	0.20
Y	.027	0.675
Z	.061	1.55

Ordering Information

Part Number	Packaging	Reel Size
ESD0521L5	3000/Tape & Reel	7 inch