

Features

- Low capacitance for high speed interfaces
- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Ultra low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ±30kV
Contact discharge: ±30kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 80A (8/20µs)
- RoHS Compliant

Mechanical Characteristics

- Package: DFN2626-10
- 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

- T3/E3
- 10/100/1000 Ethernet
- Integrated Magnetics
- Carrier Class Equipment
- Customer Premise Equipment

Part Number Code

E	S	D	0	5	1	1	L	1
1	2	3	4	5	6	7	8	9

Product Type	
ESD	TSK Electrostatic suppressor ESD Type

Reverse Working Voltage (V)	
3V3	3.3V
05	5V
16	16V

Line	
1	1-Line
2	2-Line
3	3-Line

Capacitance Type	
L	Low
X	Normal

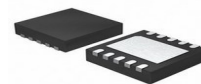
directional	
0	Bi
1	Uni

Size	
1	O201
2	O402
3	DFN0603
4	DFN1006

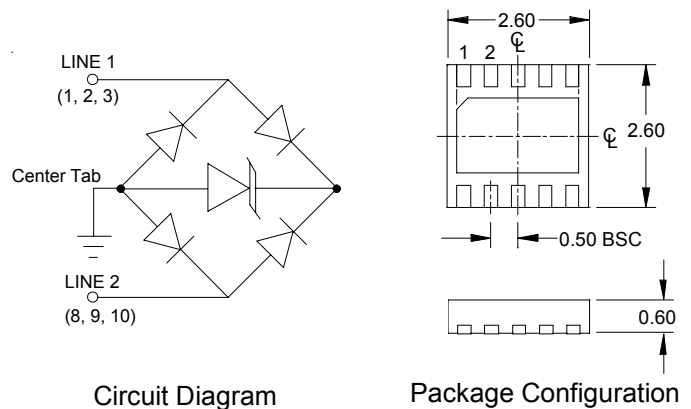
★ Code 4 to 9 is optional

Description

The ESD3V321LB is a low capacitance TVS array, integrating low capacitance, surge-rated compensation diodes with a high power transient voltage suppressor (TVS). The compensation diodes are arranged in a bridge pattern allowing the device to be connected in common mode and/or differential mode. The ESD3V321LB complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into a 10-pin lead-free DFN package, the ESD3V321LB is rated for GR-1089, intra-building transient immunity requirements for telecommunication installations and provide over voltage protection for applications such as 10/100/1000 BaseT Ethernet and T3/E3 interfaces.



Dimensions and Pin Configuration



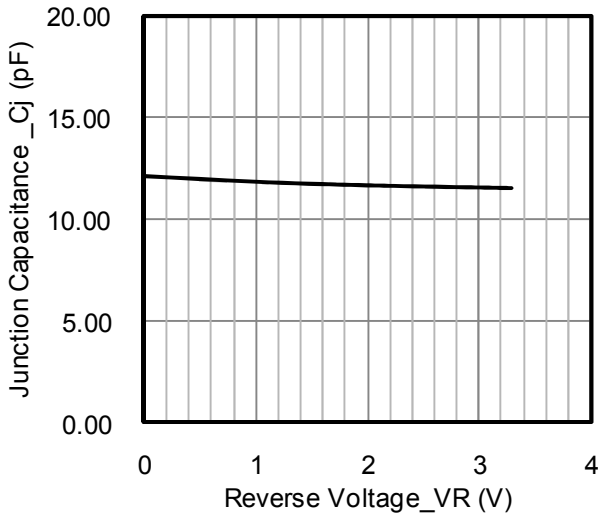
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (2/10 μs)	Ppk	2000	W
Peak Pulse Current (2/10 μs)	I _{PP}	100	A
Peak Pulse Current (8/20 μs)	I _{PP}	80	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-40 to +85	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

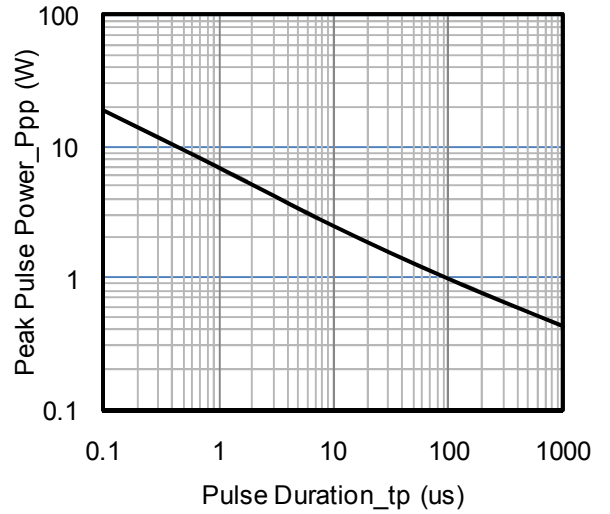
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Punch-Through Voltage	V _{PT}	3.5			V	I _T = 2 μA
Snap-Back Voltage	V _{SB}	2.8			V	I _{SB} = 50mA
Reverse Leakage Current	I _R			1	μA	V _{RWM} = 3.3V
Clamping Voltage	V _C			20	V	I _{PP} = 100A (2 x 10 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			23	V	I _{PP} = 100A (2 x 10 μs pulse), between I/O pins
Junction Capacitance	C _J			20	pF	V _R = 0V, f = 1MHz, between I/O pins and ground
Junction Capacitance	C _J			10	pF	V _R = 0V, f = 1MHz, between I/O pins

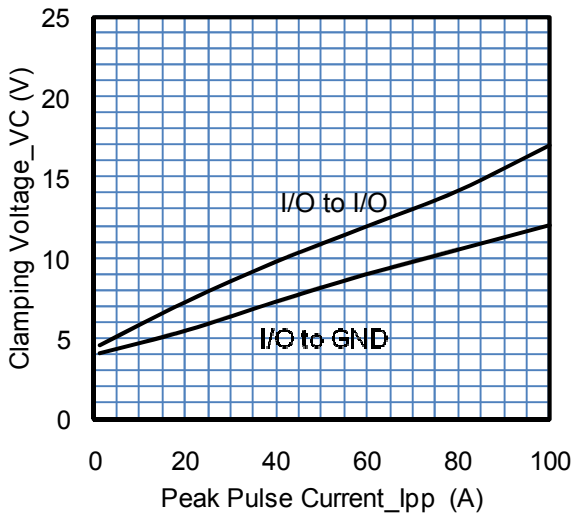
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



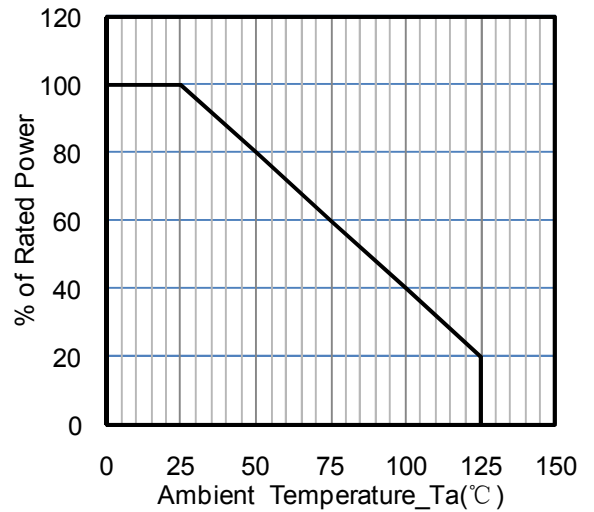
Junction Capacitance vs. Reverse Voltage



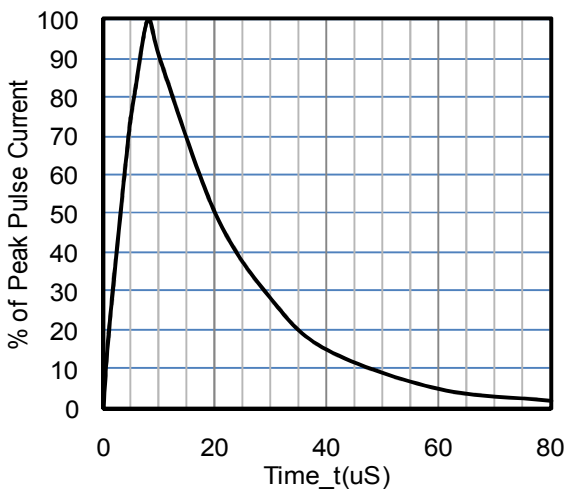
Peak Pulse Power vs. Pulse Time



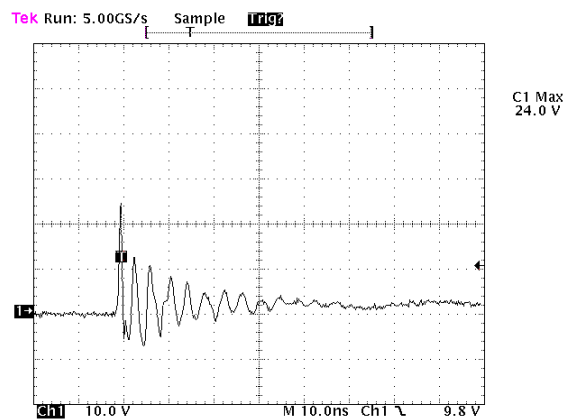
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

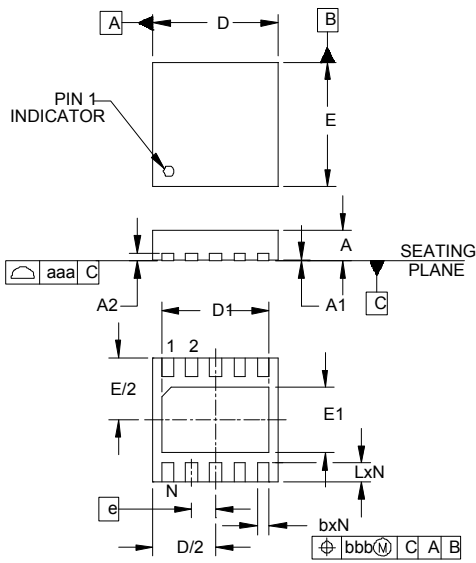


8 X 20us Pulse Waveform



ESD Clamping Voltage

DFN2626-10 Package Outline Drawing

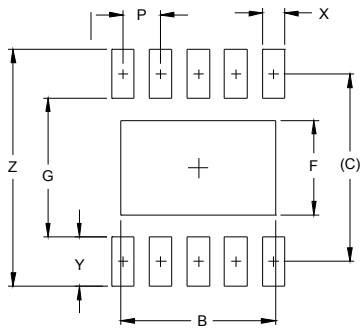


DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.020	.022	.024	0.50	0.55	0.60
A1	.000	.001	.002	0.00	0.03	0.05
A2	(.007)			(0.17)		
b	.007	.010	.012	0.20	0.25	0.30
D	.098	.102	.106	2.50	2.60	2.70
D1	.079	.085	.089	2.00	2.15	2.25
E	.098	.102	.106	2.50	2.60	2.70
E1	.044	.050	.054	1.11	1.26	1.36
e	.020 BSC			0.50 BSC		
L	.011	.014	.016	0.30	0.35	0.40
N	10			10		
aaa	.003			0.08		
bbb	.004			0.10		

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

Suggested Land Pattern



DIM	DIMENSIONS	
	INCHES	MILLIMETERS
B	.081	2.05
C	.100	2.50
F	.050	1.26
G	.073	1.85
P	.020	0.50
X	.012	0.30
Y	.025	0.65
Z	.124	3.15

NOTES:

1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

Ordering Information

Part Number	Packaging	Reel Size
ESD3V321LB	3000/Tape & Reel	7 inch