Description

The DL3318PR 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 DL3318PR has an ultra-low capacitance with a typical value at 0.25pF, and complies with the IEC 61000-4-2 (ESD) with ±20kV air and ±20kV contact discharge. The small size, ultra-low capacitance and high ESD surge protection make DL3318PR an ideal choice to protect cell phone, digital visual interfaces and other high speed ports.

Features

- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Low clamping voltage
- 8-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±20kV
    - Contact discharge: ±20kV
  - IEC61000-4-5 (Lightning) 3A (8/20μs)
- RoHS Compliant

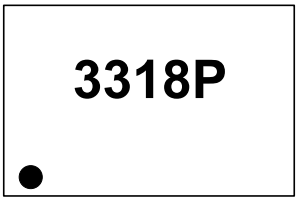
Mechanical Characteristics

- Package: DFN5515-18
- Case Material: “Green” Molding Compound
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

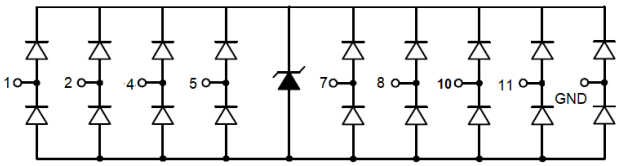
- Cellular Handsets and Accessories
- USB Ports
- Digital Visual Interface
- MMC/SD Ports

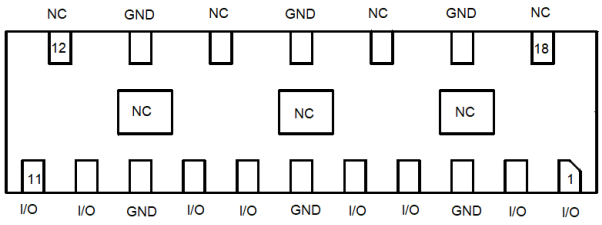
Marking Information



3318P = Device Marking Code

Equivalent Circuit and Pin Configuration





Bottom View

Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
DL3318PR	3000/Tape & Reel	7 inch

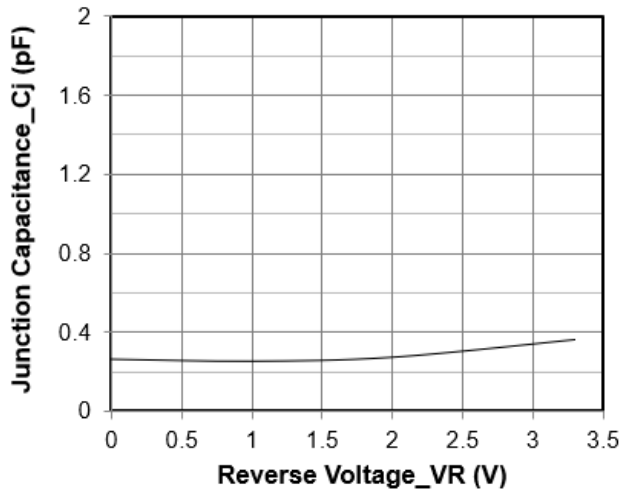
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	45	W
Peak Pulse Current (8/20μs)	I_{PP}	3	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±20 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

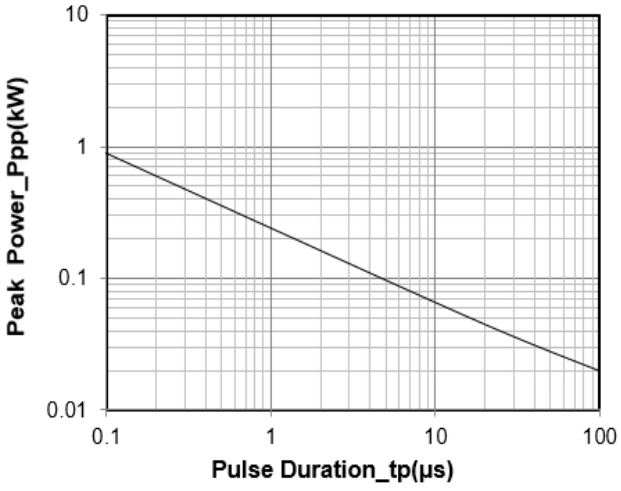
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	3.5			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 3.3V
Clamping Voltage	V_C			10	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			15	V	I_{PP} = 3A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.25		pF	VR = 0V, f = 1MHz, any I/O pin to ground

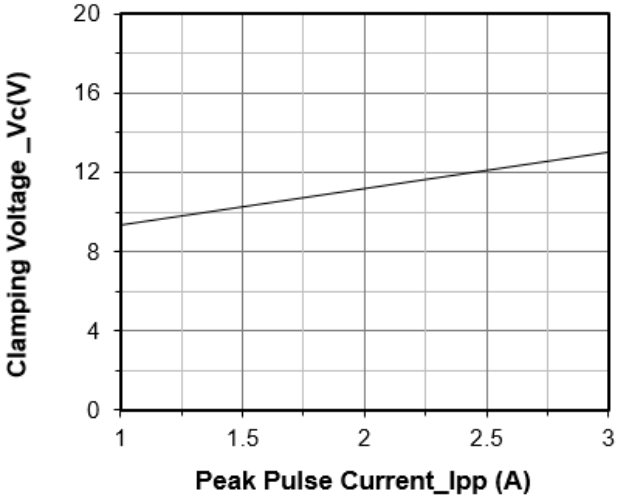
Typical Performance Characteristics (T_A=25℃ unless otherwise Specified)



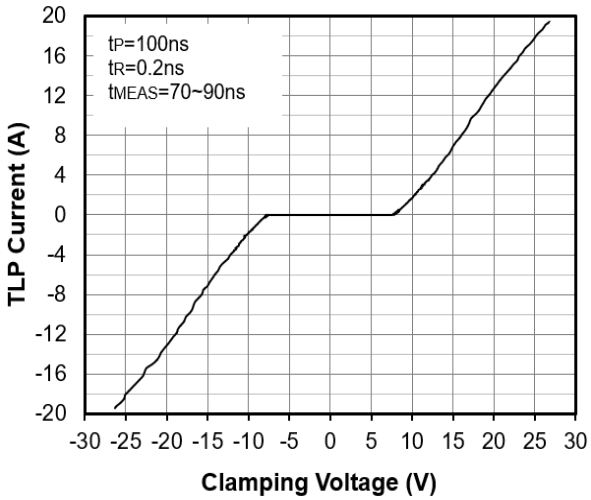
Junction Capacitance vs. Reverse Voltage



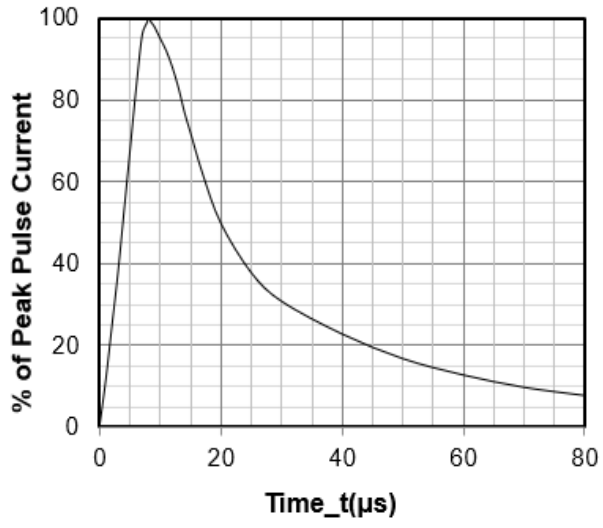
Peak Pulse Power vs. Pulse Time



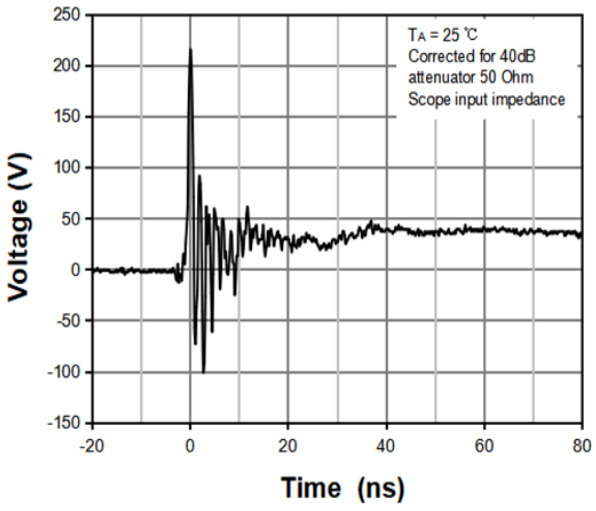
Clamping Voltage vs. Peak Pulse Current (tp = 8/20μs)



TLP Measurement



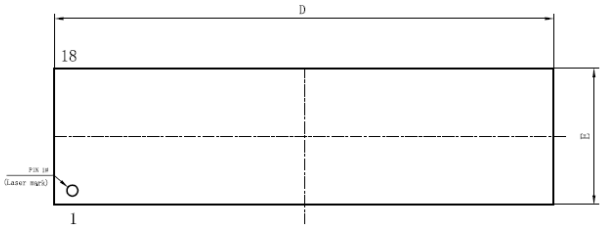
8 X 20μs Pulse Waveform



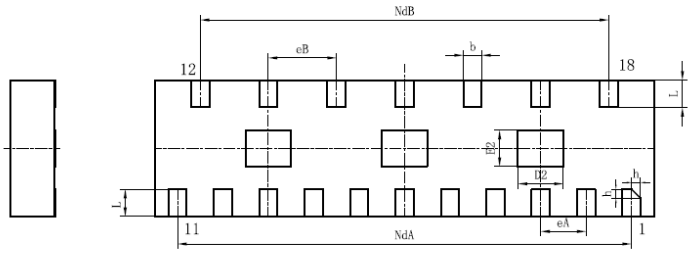
ESD Clamping Voltage

8 kV Contact per IEC61000−4−2

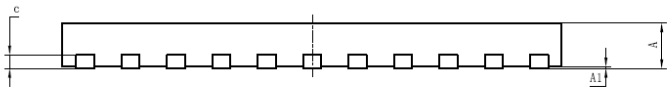
DFN5515-18 Package Outline Drawing



TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	-	0.02	0.05
b	0.15	0.20	0.25
c	0.10	0.15	0.20
D	5.45	5.50	5.55
D2	0.45	0.50	0.55
NdA	5.00BSC		
eA	0.50BSC		
eB	0.75BSC		
NdB	4.50BSC		
E	1.45	1.50	1.55
E2	0.35	0.40	0.45
L	0.20	0.30	0.40
h	0.05	0.10	0.15