

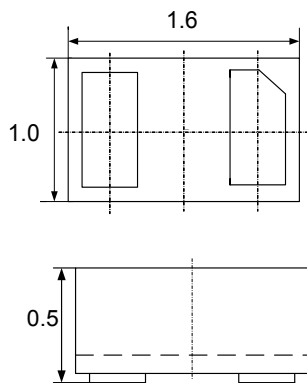
Description

The DL2421P6 is a bi-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 DL2421P6 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2(ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make DL2421P6 an ideal choice to protect cell phone, digital interfaces, HDMI, DVI, USB2.0, USB3.0 and other high speed ports.

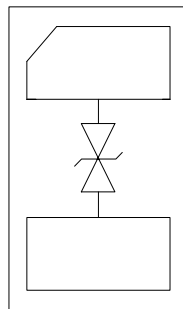
Mechanical Characteristics

- ◆ Package: DFN1610-2 (1.6x1.0x0.5mm)
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

Features

- ◆ Ultra small package: 1.6x1.0x0.5mm
- ◆ Ultra low capacitance: 0.3pF typical
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 24V
- ◆ Low clamping voltage
- ◆ 2-pin leadless package
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 15\text{kV}$
Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-5 (Lightning) 1.5A (8/20 μs)
- ◆ RoHS Compliant

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Display Ports
- ◆ MDDI Ports
- ◆ USB Ports
- ◆ Digital Visual Interface(DVI)
- ◆ PCI Express and Serial SATA Ports

Marking Information



24R = Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DL2421P6	24R	10000/Tape & Reel	7 inch

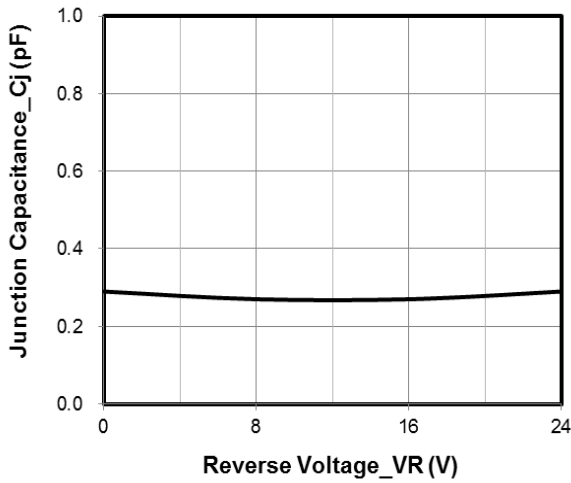
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μs)	Ppk	80	W
Peak Pulse Current(8/20 μs)	I _{PP}	1.5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 8	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

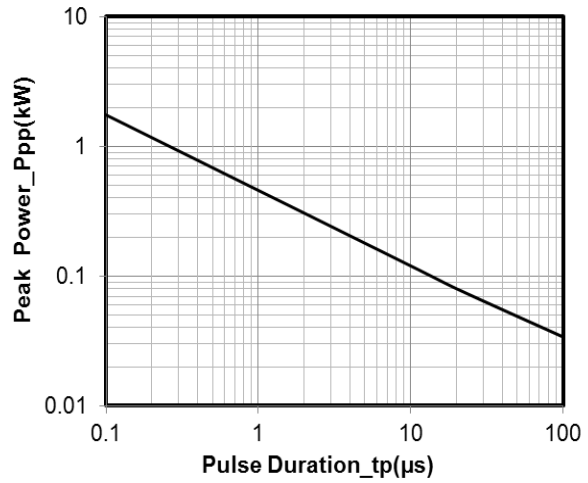
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			24	V	
Breakdown Voltage	V _{BR}	26.5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 24V
Clamping Voltage	V _C			40	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			53	V	I _{PP} = 1.5A (8 x 20 μs pulse)
Junction Capacitance	C _J		0.3		pF	V _R = 0V, f = 1MHz

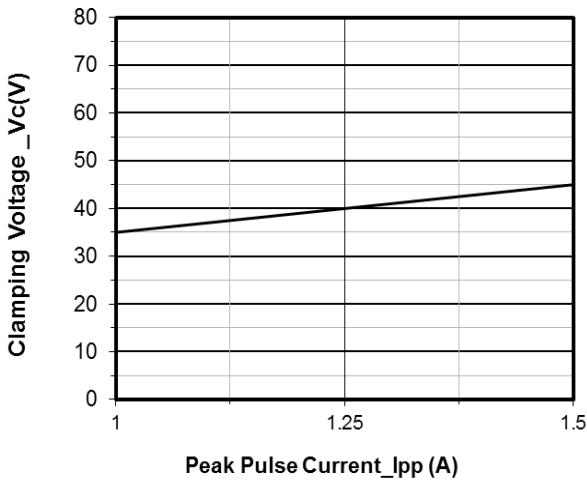
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



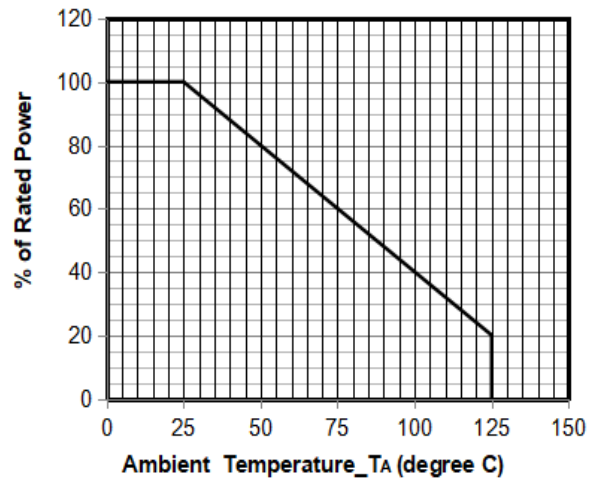
Junction Capacitance vs. Reverse Voltage



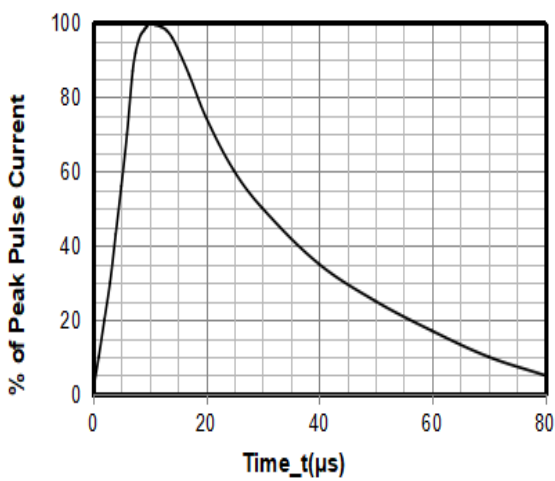
Peak Pulse Power vs. Pulse Time



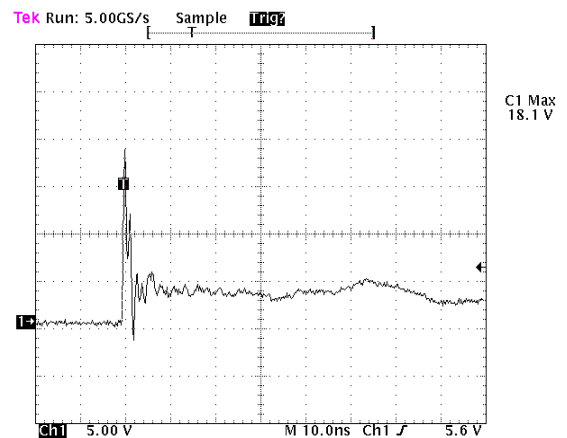
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

