

Low Capacitance TVS Diode Array

Features

- Ultra low leakage: nA level
- Low operating voltage: 5.5/6.5 V
- Low clamping voltage
- 6-pin leadless package
- Protects two I/O lines and a power line
- 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) 3A (8/20 μs)
- RoHS Compliant

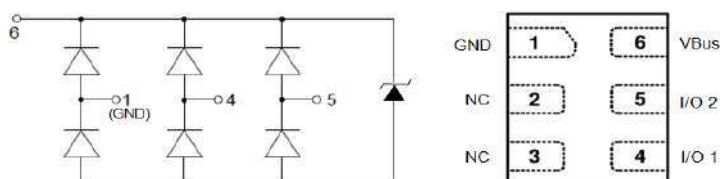
Dimensions DFN1210-6



Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

Pin Configuration



Mechanical Characteristics

- Package: DFN1210-6
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: 53N

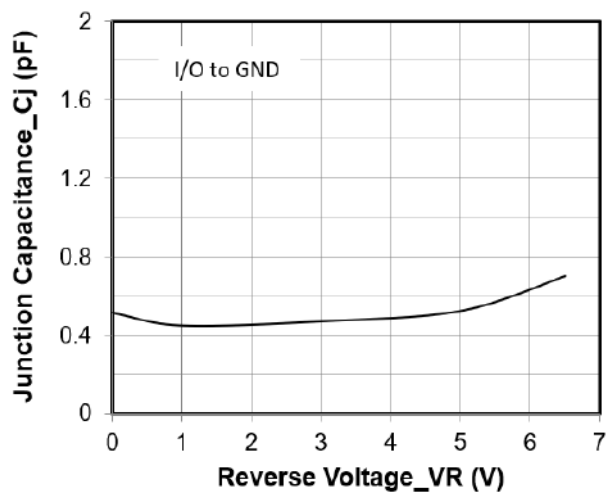
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	50	W
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	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

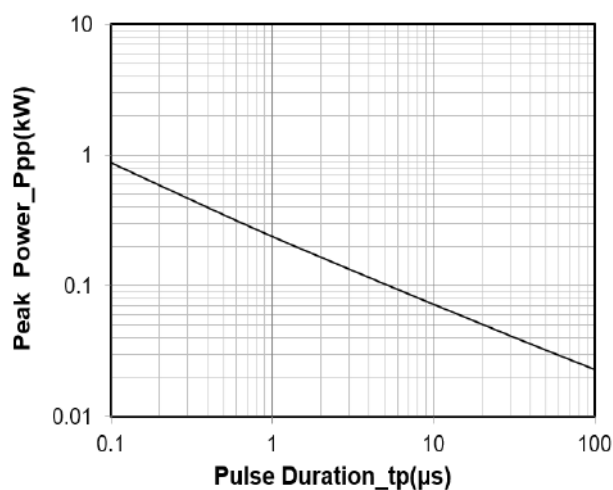
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 6 to GND			6.5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, Pin 6 to GND	7		12	V
Reverse Leakage Current	I_R	$V_{RWM} = 6.5\text{V}$, Pin 6 to GND			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse) any I/O pin to ground			12	V
Clamping Voltage	V_C	$I_{PP} = 3\text{A}$ (8 x 20 μs pulse) any I/O pin to ground			17	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ any I/O pin to ground		0.5		pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ between I/O pins		0.25	0.5	pF

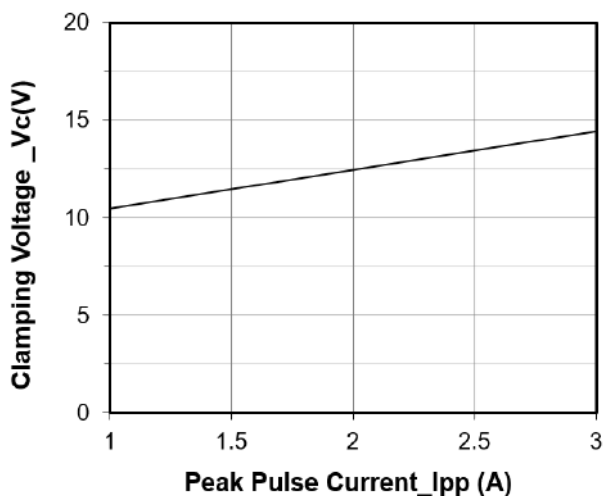
Typical Performance Characteristics(TA=25°C unless otherwise specified)



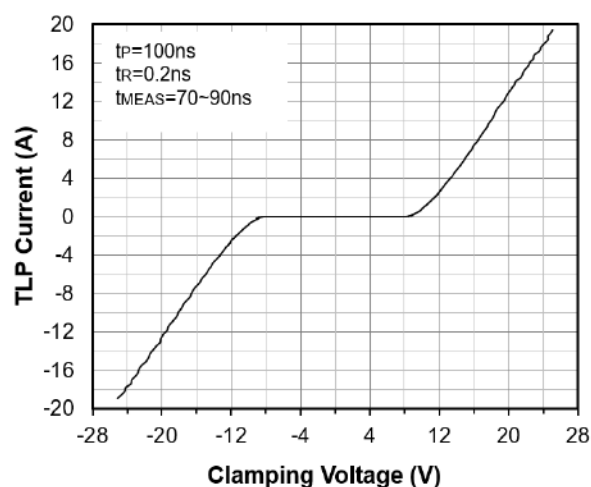
Junction Capacitance vs. Reverse Voltage



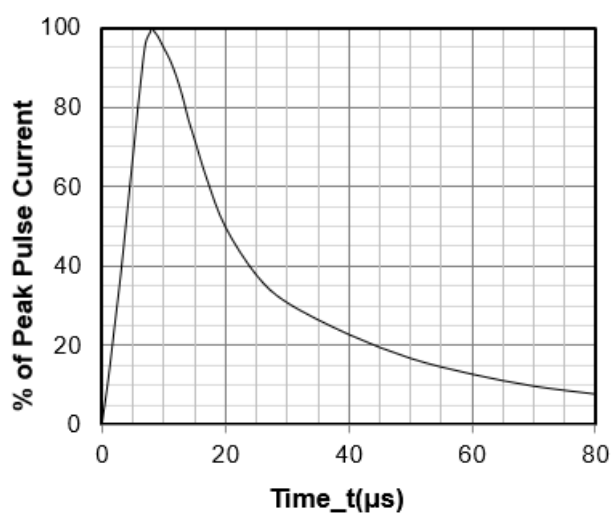
Peak Pulse Power vs. Pulse Time



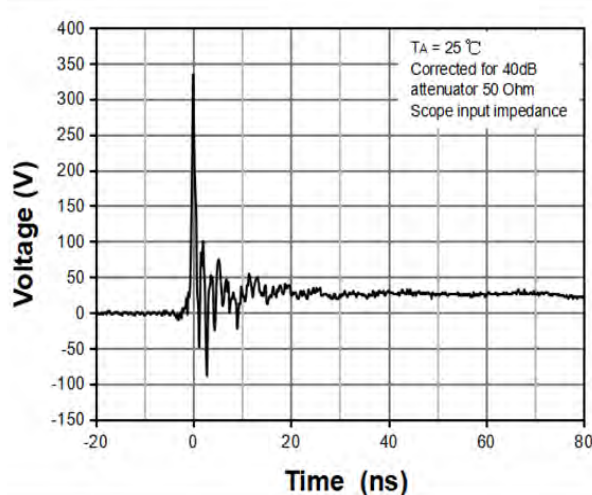
Clamping Voltage vs. Peak Pulse Current



TLP Measurement



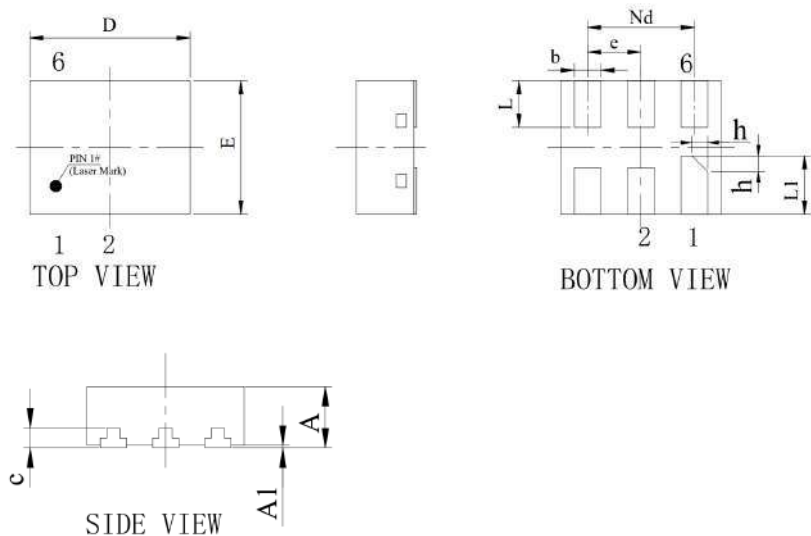
8 X 20 μ s Pulse Waveform



ESD Clamping Voltage

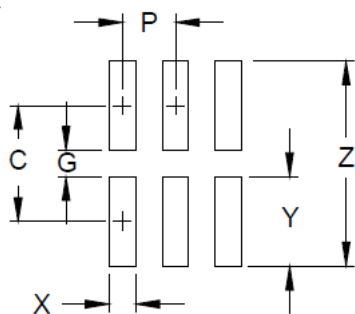
8 kV Contact per IEC61000-4-2

DFN1210-6 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.40	0.45	0.50
A1	0	0.02	0.05
b	0.15	0.20	0.25
c	0.152REF		
D	1.15	1.20	1.25
e	0.40BSC		
Nd	0.80BSC		
E	0.95	1.00	1.05
L	0.25	0.35	0.45
L1	0.338	0.438	0.538
h	0.07	0.12	0.17

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	0.875	0.034
G	0.20	0.008
P	0.40	0.016
X	0.20	0.008
Y	0.675	0.027
Z	1.55	0.061