AR3302PN
2-Line Ultra Low Capacitance TVS Diode

Description

The AR3302PN 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 AR3302PN has an ultra-low capacitance with a typical value at 0.15pF, and complies with the IEC 61000-4-2 (ESD) with ±20kV air and ±15kV contact discharge. The small size, ultra-low capacitance and high ESD surge protection make AR3302PN 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
- 6-pin leadless package
- Up to 2-line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±20kV
    - Contact discharge: ±15kV
  - IEC61000-4-5 (Lightning) 3A (8/20μs)
- RoHS Compliant

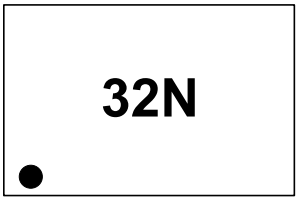
Mechanical Characteristics

- Package: DFN1210-6
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

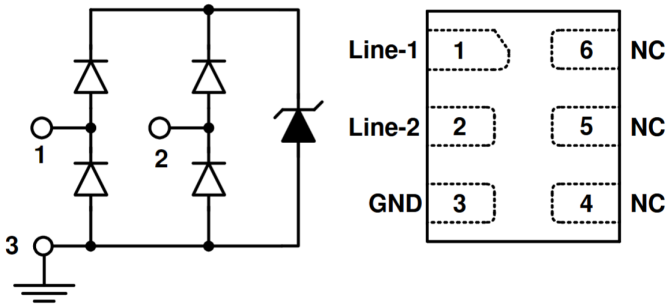
- Cellular Handsets and Accessories
- USB Ports
- Digital Visual Interface
- MMC/SD Ports

Marking Information



32N = Device Marking Code
Dot denotes Pin1

Dimensions and Pin Configuration



Ordering Information

Part Number	Packaging	Reel Size
AR3302PN	3000/Tape & Reel	7 inch

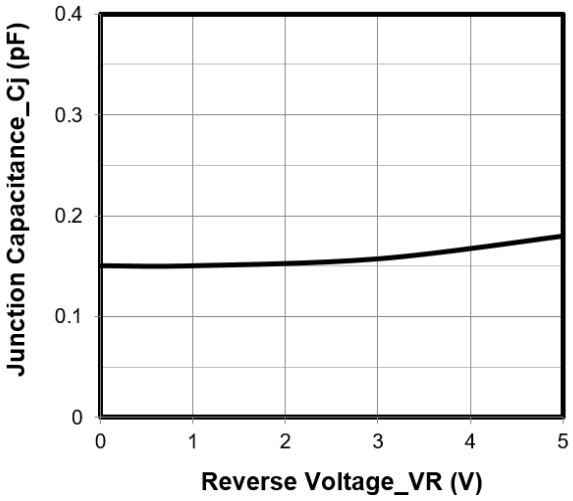
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	50	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 ±15	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

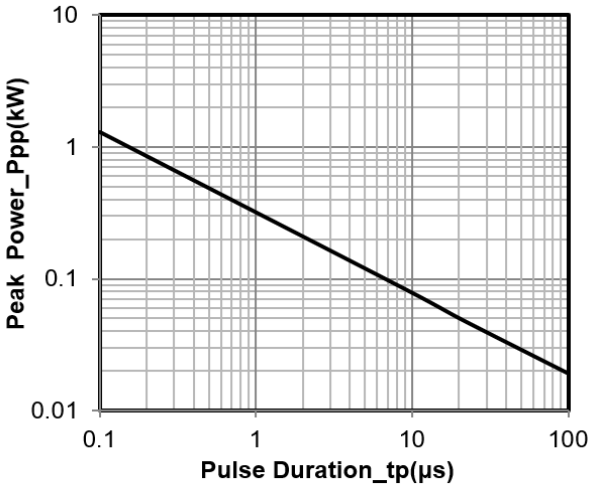
Electrical Characteristics (T_A=25°C unless otherwise specified)

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			17	V	I_{PP} = 3A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.15	0.25	pF	VR = 0V, f = 1MHz, any I/O pin to ground

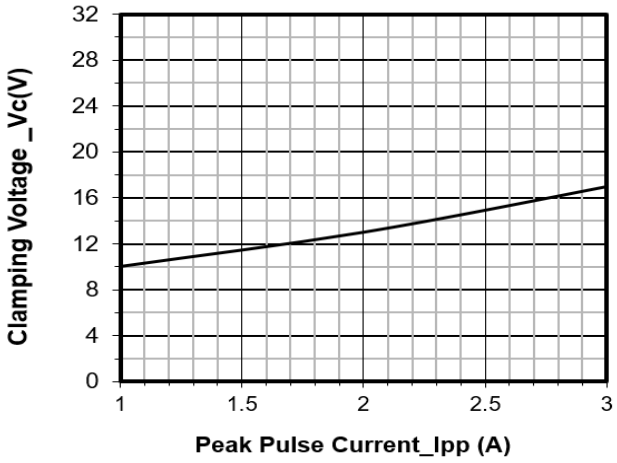
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



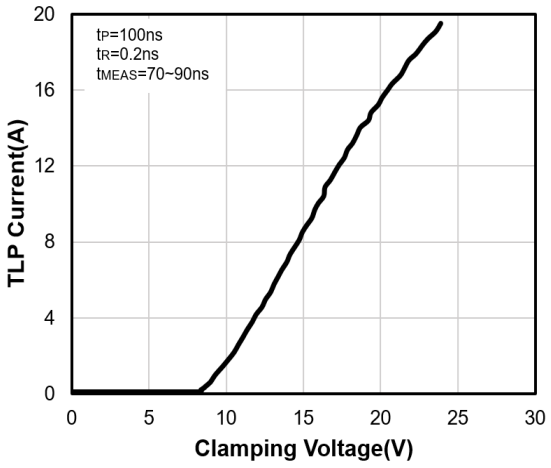
Junction Capacitance vs. Reverse Voltage



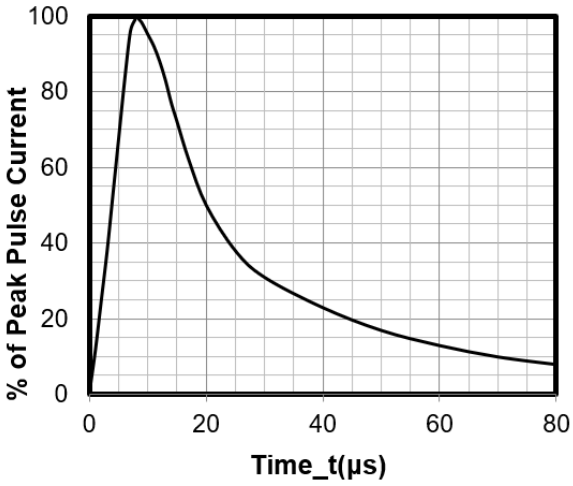
Peak Pulse Power vs. Pulse Time



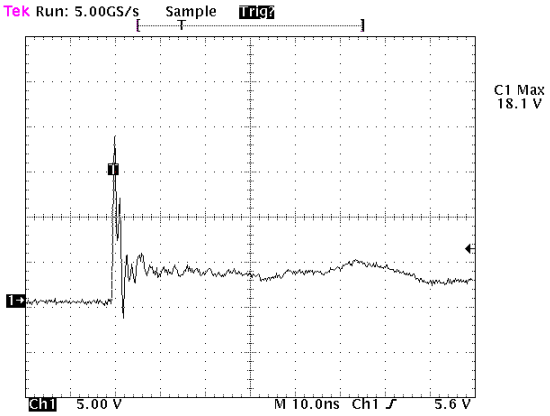
Clamping Voltage vs. Peak Pulse Current



TLP Curve



8 X 20μs Pulse Waveform

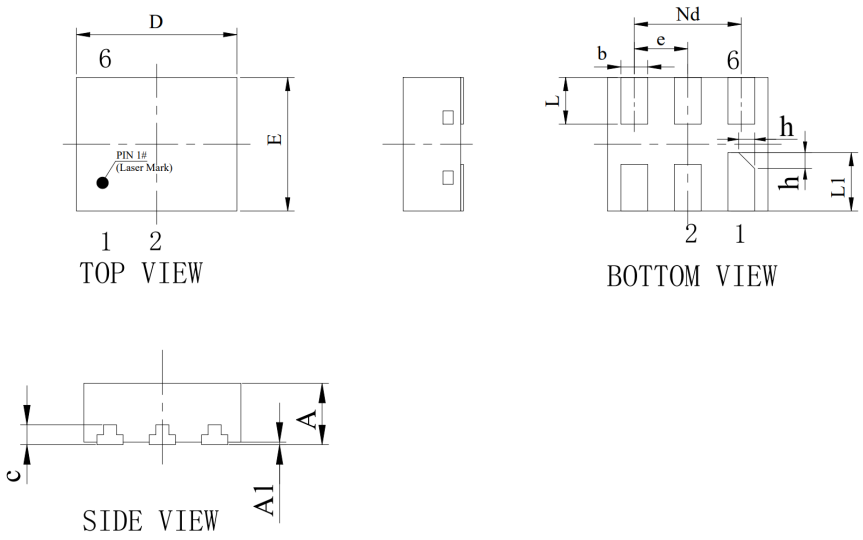


Note：Data is taken with a 10x attenuator

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

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