

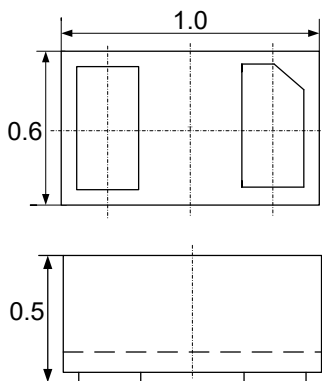
Description

The AR1811P1A 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 AR1811P1A has an ultra-low capacitance with a typical value at 0.15pF, and complies with the IEC 61000-4-2 (ESD) with $\pm 10\text{kV}$ air and $\pm 10\text{kV}$ contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make AR1811P1A an ideal choice to protect cell phone and high-power USB.

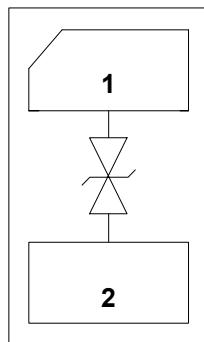
Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.15pF typical
- Ultra low leakage: nA level
- Operating voltage: 18V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 10\text{kV}$
 - Contact discharge: $\pm 10\text{kV}$
- RoHS Compliant

Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

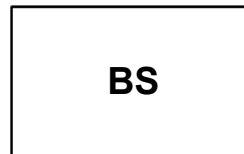
Mechanical Characteristics

- Package: DFN1006-2 (1.0x0.6x0.5mm)
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Serial ATA
- MDDI Ports
- USB Ports
- PCI Express and Serial SATA Ports

Marking Information



Ordering Information

Part Number	Packaging	Reel Size
AR1811P1A	10000/Tape & Reel	7 inch

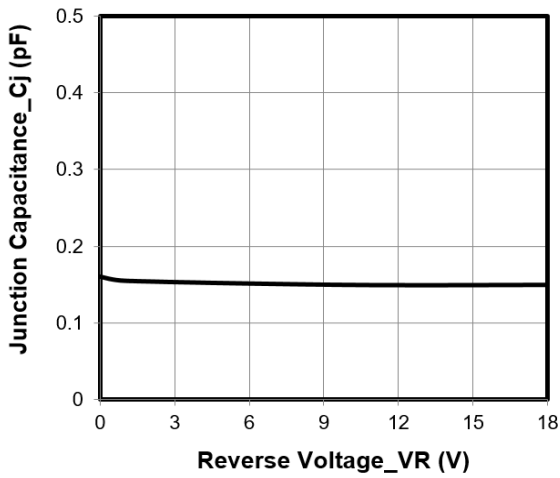
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 10	kV
ESD per IEC 61000-4-2 (Contact)		± 10	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

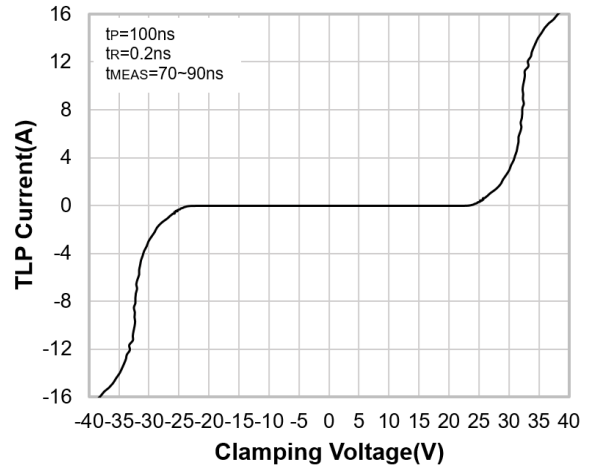
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			18	V	
Breakdown Voltage	VBR	19			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			0.2	μA	VRWM = 18V
TLP Clamping Voltage	Vc		26		V	$I_{TLP} = 1\text{A}$
TLP Clamping Voltage	Vc		32		V	$I_{TLP} = 8\text{A}$
TLP Clamping Voltage	Vc		38		V	$I_{TLP} = 16\text{A}$
Junction Capacitance	CJ		0.15		pF	VR = 0V, f = 1MHz

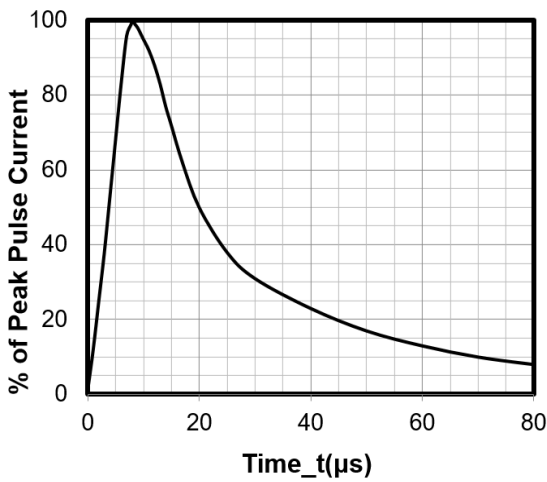
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



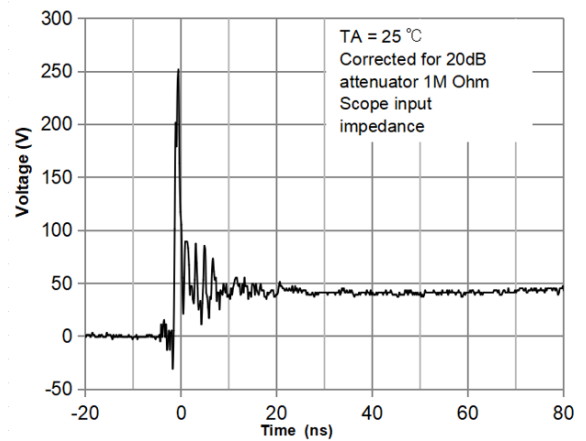
Junction Capacitance vs. Reverse Voltage



TLP Curve

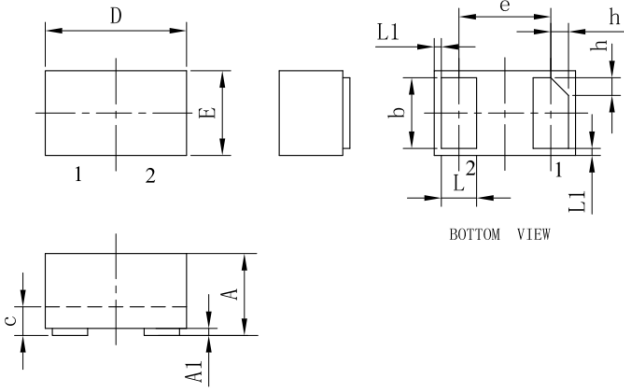


8 X 20μs Pulse Waveform

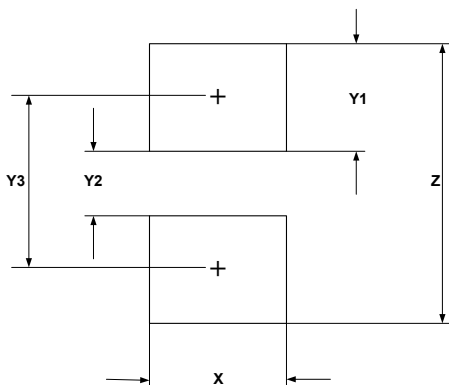


ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

DFN1006-2 Package Outline Drawing


SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05REF			0.002REF		
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern


SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

Contact Information

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