Description

The AR1811P0A 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 AR1811P0A has an ultra-low capacitance with a typical value at 0.15pF, and complies with the IEC 61000-4-2 (ESD) with ±10kV air and ±10kV contact discharge. The small size, ultra-low capacitance and high ESD surge protection make AR1811P0A an ideal choice to protect cell phone and high-power USB.

Features

- 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: ±10kV
    - Contact discharge: ±10kV
- RoHS Compliant

Mechanical Characteristics

- Package: DFN0603-2
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

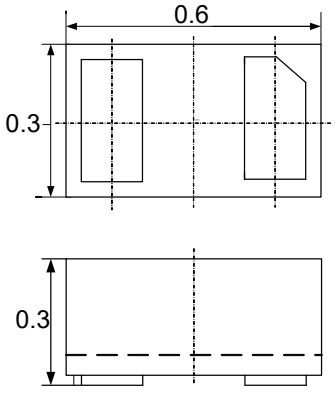
Applications

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

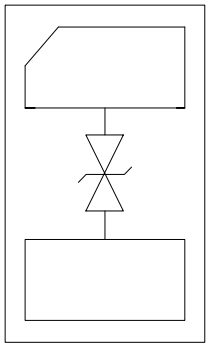
Marking Information

BW

Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AR1811P0A	10000/Tape & Reel	7 inch

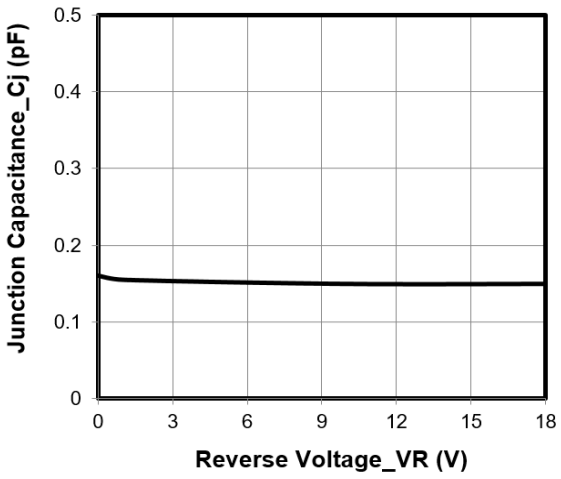
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±10 ±10	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

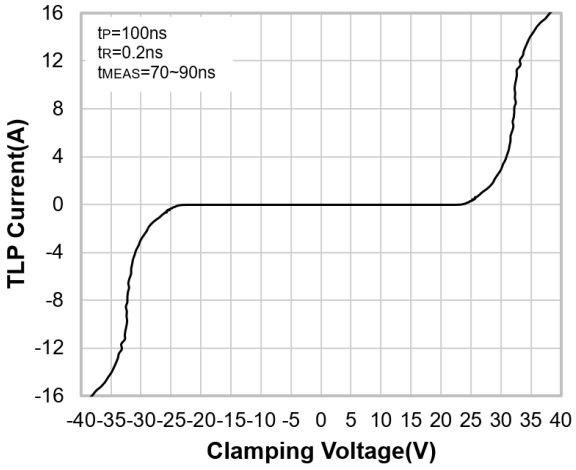
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			18	V	
Breakdown Voltage	V_{BR}	19			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 18V
TLP Clamping Voltage	V_C		26		V	I_{TLP} = 1A
TLP Clamping Voltage	V_C		32		V	I_{TLP} = 8A
TLP Clamping Voltage	V_C		38		V	I_{TLP} = 16A
Junction Capacitance	C_J		0.15		pF	VR = 0V, f = 1MHz

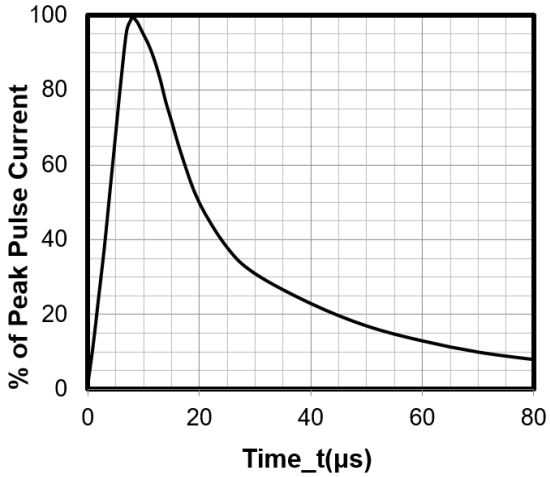
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



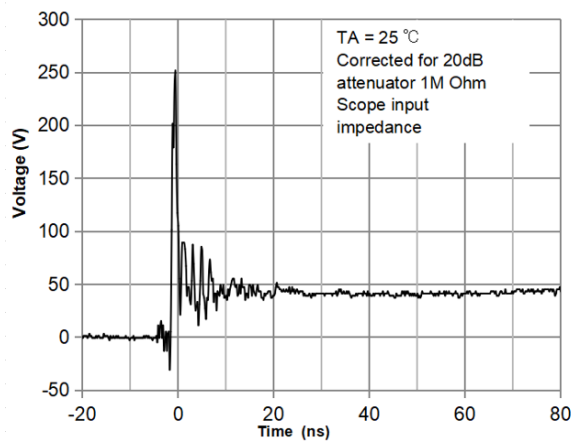
Junction Capacitance vs. Reverse Voltage



TLP Curve



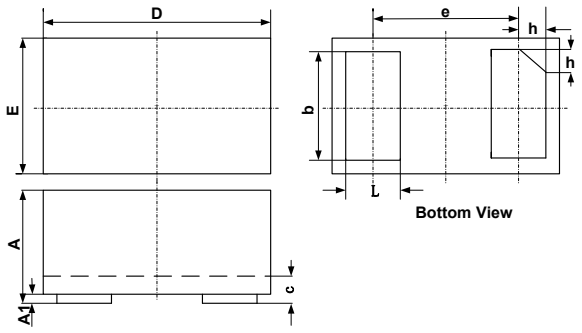
8 X 20μs Pulse Waveform



ESD Clamping Voltage

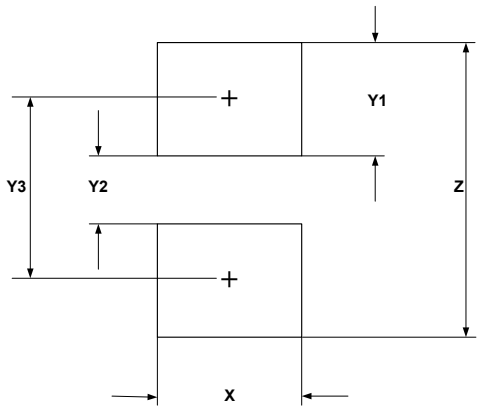
8 kV Contact per IEC61000−4−2

DFN0608-2 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026

Contact Information

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