

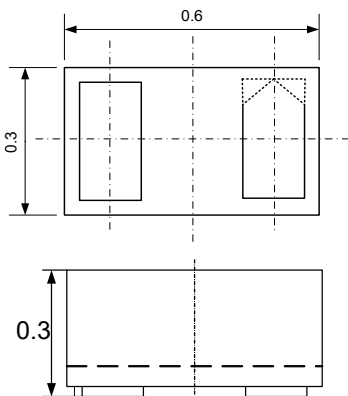
### Description

The AR0801P0 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 AR0801P0 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) standard with  $\pm 20\text{kV}$  air and  $\pm 20\text{kV}$  contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make AR0801P0 an ideal choice to protect cell phone, digital video interfaces, HDMI, DVI, USB2.0, USB3.0, and other high speed ports.

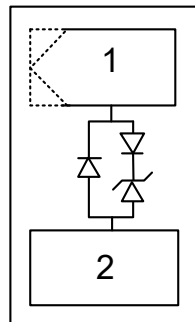
### Features

- Ultra small package: 0.6x0.3x0.3mm
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 8 V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 20\text{kV}$   
Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

### Mechanical Characteristics

- Package: DFN0603-2 (0.6x0.3x0.3mm)
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

### Applications

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

### Marking Information



### Ordering Information

Part Number	Packaging	Reel Size
AR0801P0	10000/Tape & Reel	7 inch

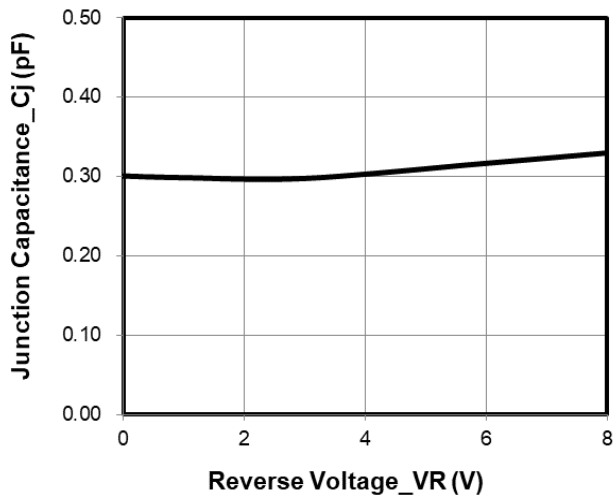
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P <sub>pk</sub>	100	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V <sub>ESD</sub>	±20 ±20	kV
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

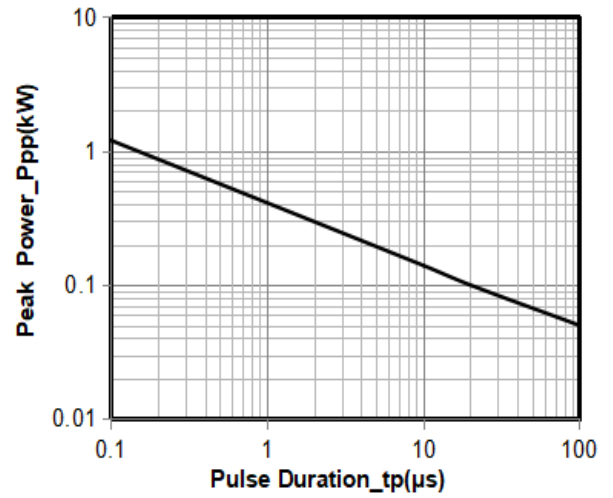
**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>		8		V	
Breakdown Voltage	V <sub>BR</sub>	8.5			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.2	μA	V <sub>RWM</sub> = 8V
Clamping Voltage	V <sub>C</sub>			14	V	I <sub>PP</sub> = 1A (8 x 20μs pulse)
Clamping Voltage	V <sub>C</sub>			25	V	I <sub>PP</sub> = 4A (8 x 20μs pulse)
Junction Capacitance	C <sub>J</sub>		0.3		pF	V <sub>R</sub> = 0V, f = 1MHz

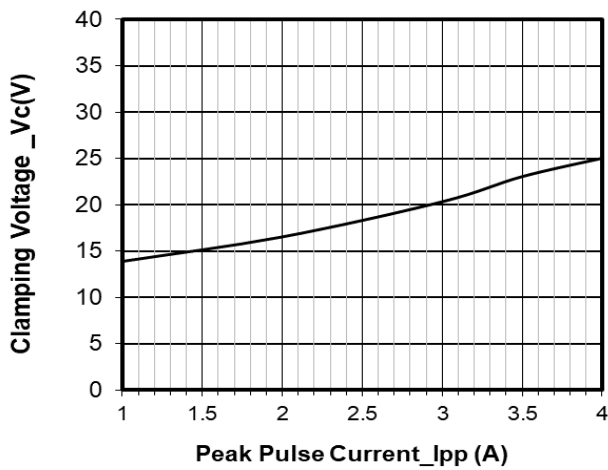
**Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)**



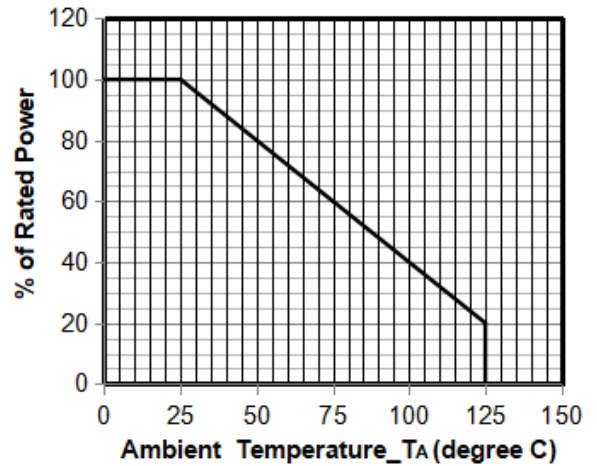
**Junction Capacitance vs. Reverse Voltage**



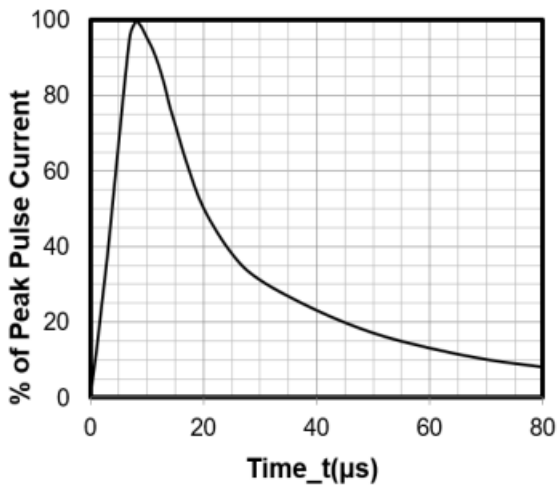
**Peak Pulse Power vs. Pulse Time**



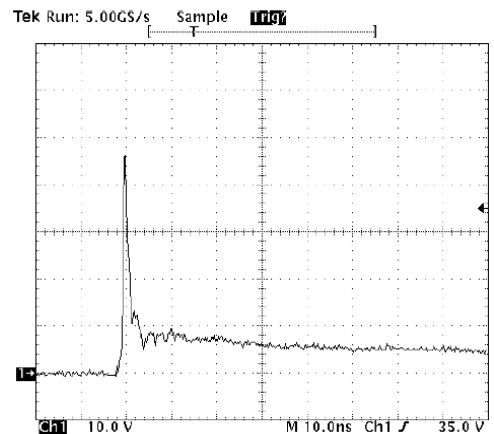
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



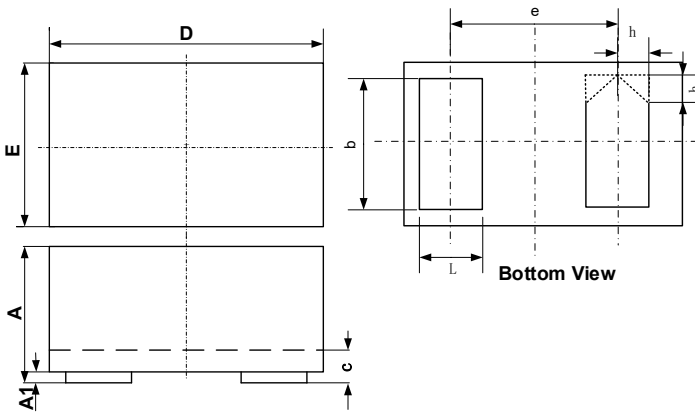
**8 X 20μs Pulse Waveform**



**ESD Clamping Voltage**

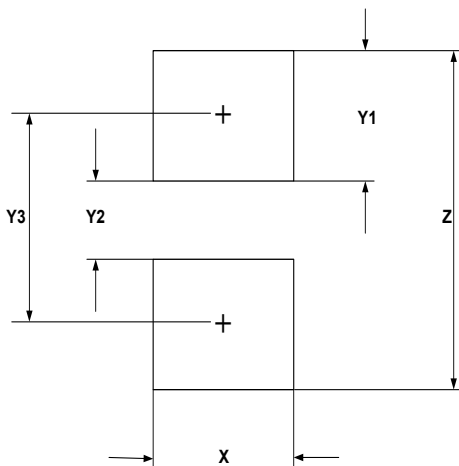
**8 kV Contact per IEC61000-4-2**

## DFN0603-2 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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