

### Description

The AU0561P0 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time, very low capacitance and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The AU0561P0 complies with the IEC 61000-4-2 (ESD) with  $\pm 15\text{kV}$  air and  $\pm 8\text{kV}$  contact discharge. It is assembled into an ultra-small lead-free package. The small size and very low capacitance make AU0561P0 an ideal choice to protect cell phone, digital cameras, audio players, data interface and many other portable applications.

### Features

- Ultra small package: 0.6x0.3x0.3mm
- Protects one data or power line
- Very low capacitance: 2.5pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 15\text{kV}$   
Contact discharge:  $\pm 8\text{kV}$
  - EC61000-4-5 (Lightning) 2A (8/20 $\mu\text{s}$ )
- RoHS compliant

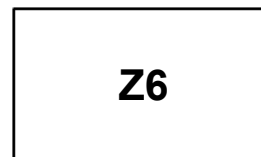
### Mechanical Characteristics

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

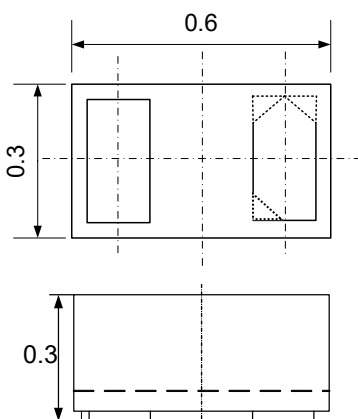
### Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, USB 2.0, LCD Displays

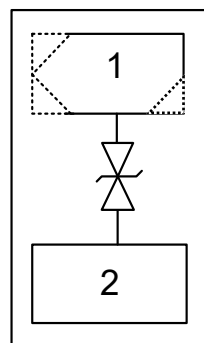
### Marking Information



### Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

### Ordering Information

Part Number	Packaging	Reel Size
AU0561P0	10000/Tape & Reel	7 inch

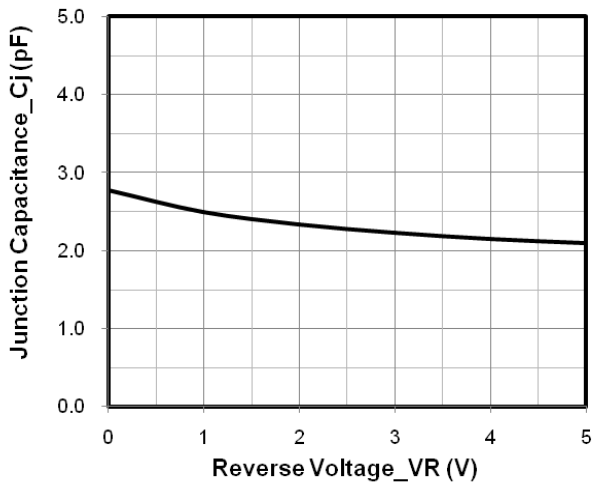
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 15$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 8$	
Peak Pulse Power (8/20 $\mu\text{s}$ )	PPK	25	W
Peak Pulse Current	I <sub>PP</sub>	2	A
Operating Temperature Range	T <sub>J</sub>	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	$^{\circ}\text{C}$

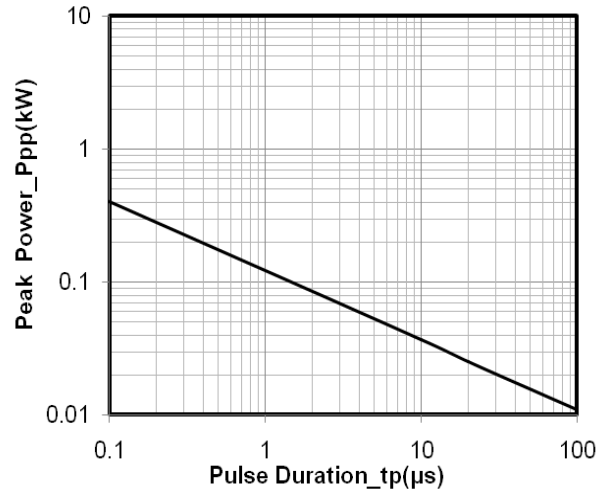
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	Pin 1 to Pin 2 or Pin 2 to Pin 1
Breakdown Voltage	V <sub>BR</sub>	6			V	I <sub>T</sub> = 1mA, Pin 1 to Pin 2 or Pin 1 to Pin 2
Reverse Leakage Current	I <sub>R</sub>			0.2	$\mu\text{A}$	V <sub>RWM</sub> = 5V, Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	V <sub>C</sub>			10	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	V <sub>C</sub>			12.5	V	I <sub>PP</sub> = 2A (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Junction Capacitance	C <sub>J</sub>		2.5	3.5	pF	V <sub>R</sub> = 0V, f = 1MHz

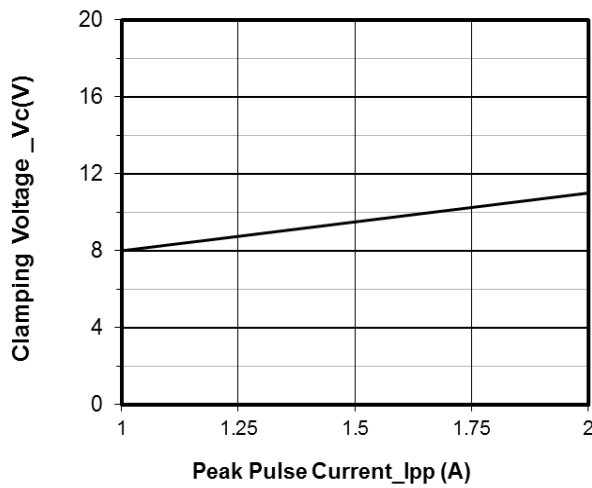
**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**



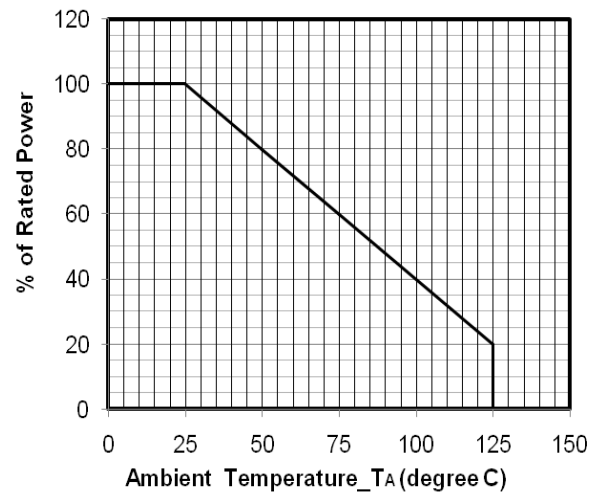
**Junction Capacitance vs. Reverse Voltage**



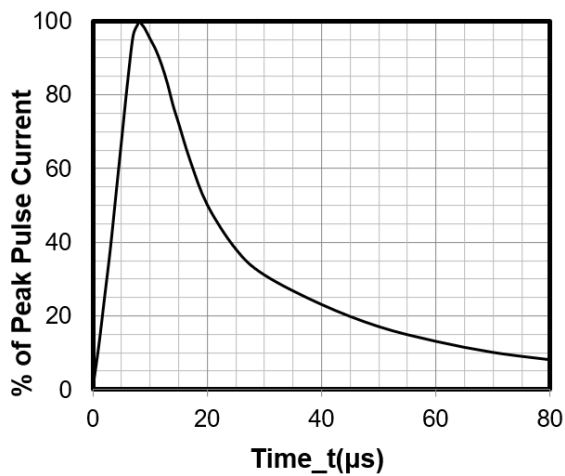
**Peak Pulse Power vs. Pulse Time**



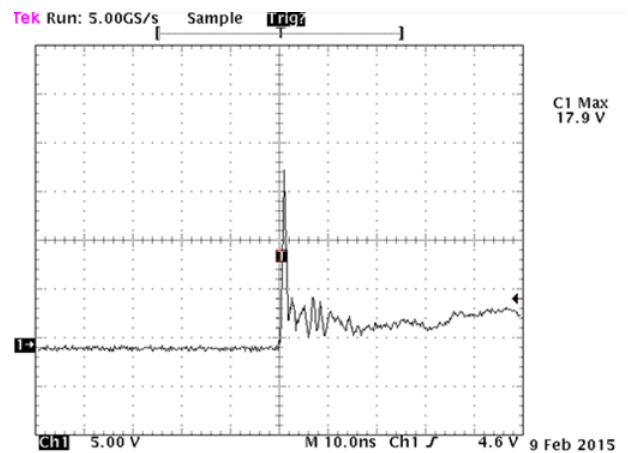
**Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )**



**Power Derating Curve**



**8 X 20μs Pulse Waveform**

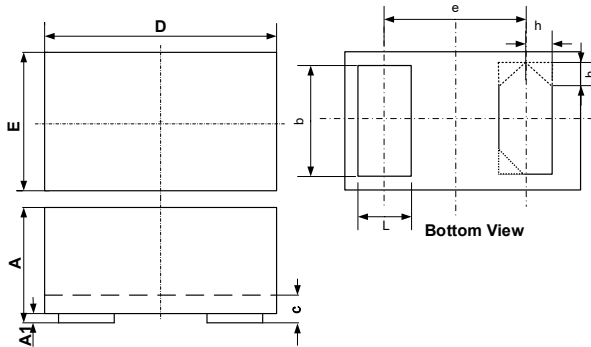


**Note: Data is taken with a 10x attenuator**

**ESD Clamping Voltage**

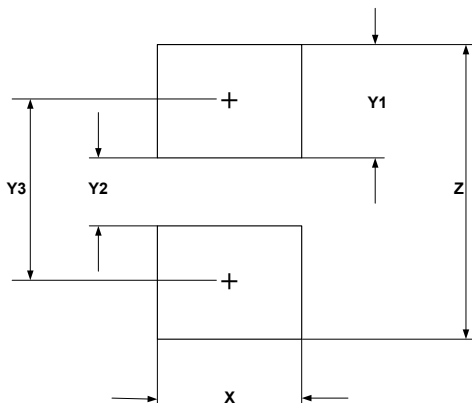
**+8 kV Contact per IEC61000-4-2**

### 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

Applied Power Microelectronics Inc.  
 Website: <http://www.appliedpowermicro.com>  
 Email: [sales@appliedpowermicro.com](mailto:sales@appliedpowermicro.com)  
 Phone: +86 (0519) 8399 3606