

## Description

The AU0501P0 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 data and power line. The AU0501P0 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small  $0.6 \times 0.6 \times 0.3\text{mm}$  lead-free DFN package. The small size and high ESD surge protection make AU0501P0 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

## Features

- Ultra small package:  $0.6 \times 0.6 \times 0.3\text{mm}$
- Protects one data or power line
- 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:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 8A (8/20 $\mu\text{s}$ )
- RoHS Compliant

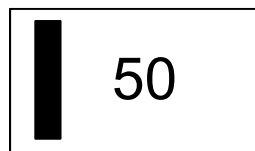
## Mechanical Characteristics

- Package: DFN0603-2 ( $0.6 \times 0.3 \times 0.3\text{mm}$ )
- 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, LCD Displays

## Marking Information

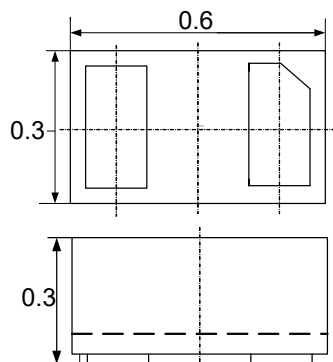


50 = Device Marking Code  
Bar denotes Pin1

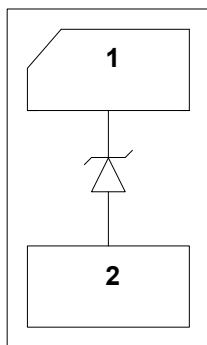
## Ordering Information

Part Number	Packaging	Reel Size
AU0501P0	10000/Tape & Reel	7 inch

## Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

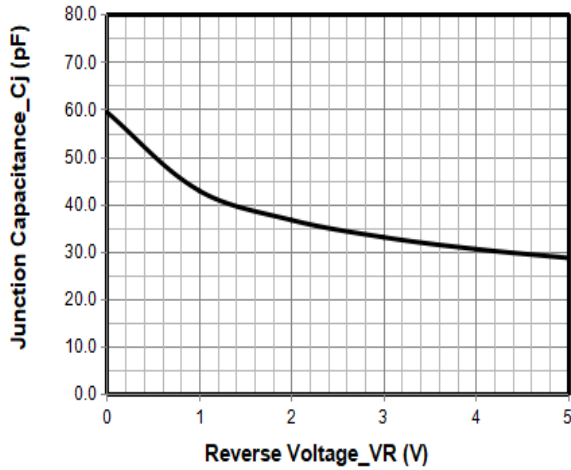
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	100	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	8	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	$\pm 30$ $\pm 30$	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

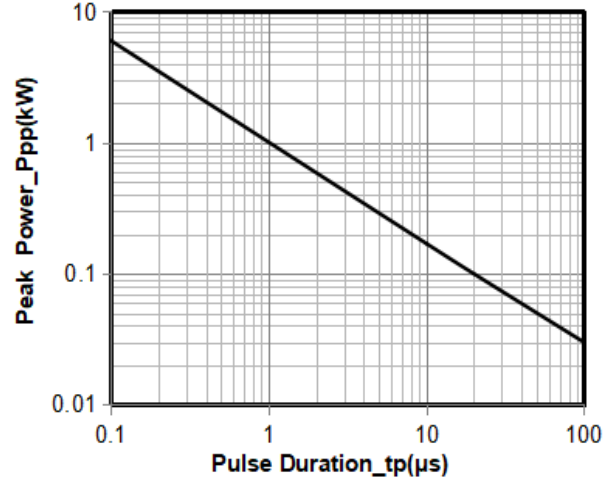
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	Pin 1 to Pin 2
Breakdown Voltage	VBR	6		8.5	V	IT = 1mA, Pin 1 to Pin 2
Reverse Leakage Current	IR			0.2	$\mu\text{A}$	VRWM = 5V, Pin 1 to Pin 2
Forward Voltage	VF		1.0	1.2	V	IF = 10mA, Pin 2 to Pin 1
Clamping Voltage	VC			12	V	Ipp = 8A (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2
Junction Capacitance	CJ		60		pF	VR = 0V, f = 1MHz

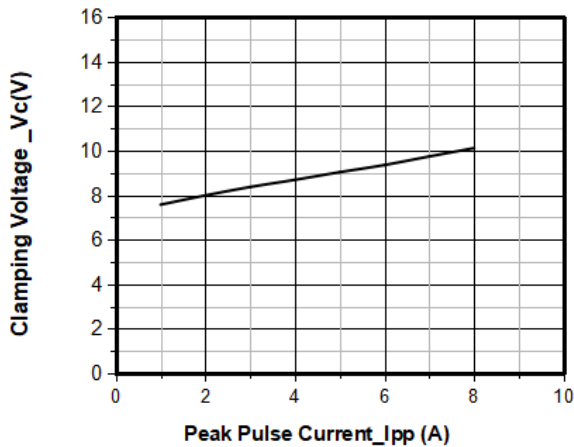
**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**



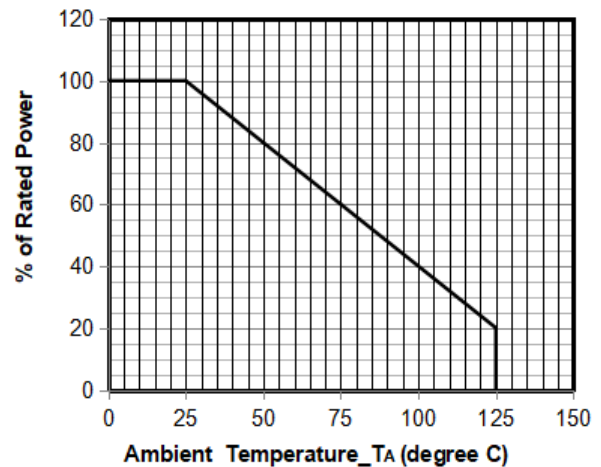
**Junction Capacitance vs. Reverse Voltage**



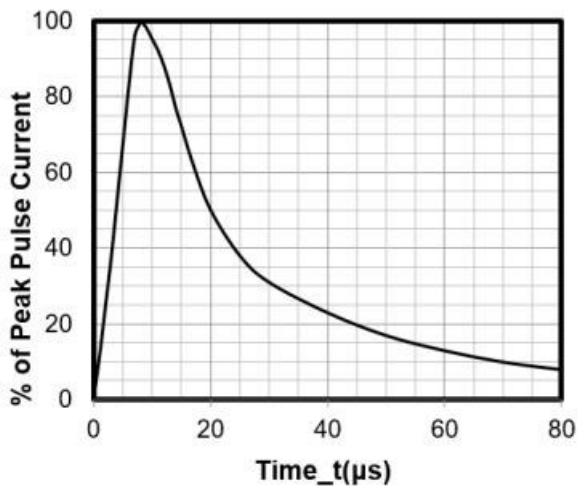
**Peak Pulse Power vs. Pulse Time**



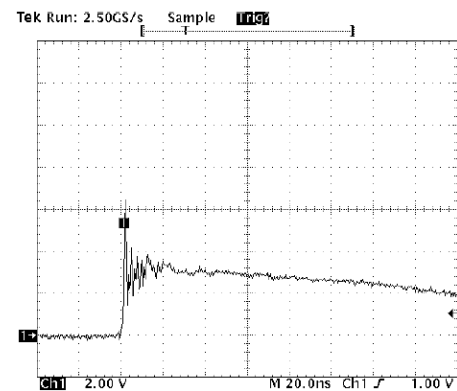
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



**8 X 20μs Pulse Waveform**

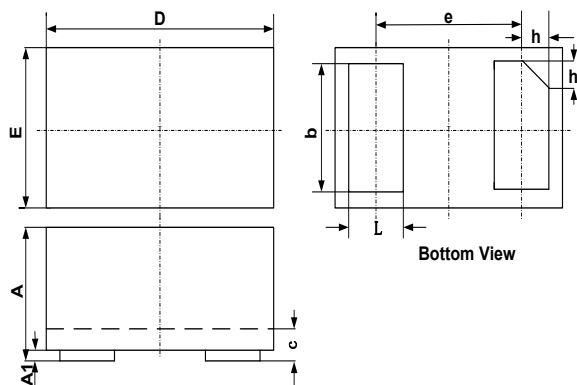


**Note: Data is taken with a 10x attenuator**

**ESD Clamping Voltage**

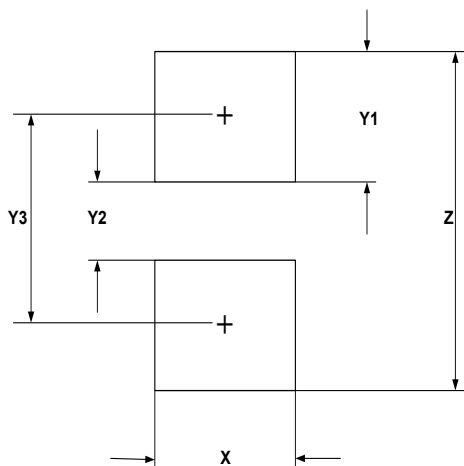
**8 kV Contact per IEC61000-4-2**

## 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

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