

Description

The AU3381P0 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time, low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The AU3381P0 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 lead-free package. The small size make AU3381P0 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
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- 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: $\pm 30\text{kV}$
 - EC61000-4-5 (Lightning) 16A (8/20 μs)
- 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

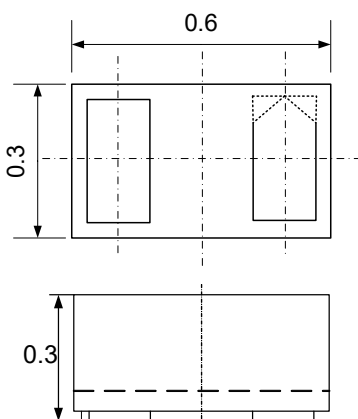
Applications

- 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

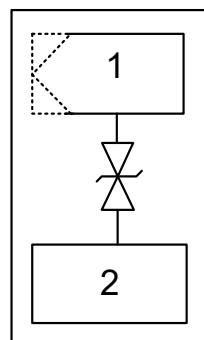
Marking Information



Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU3381P0	10000/Tape & Reel	7 inch

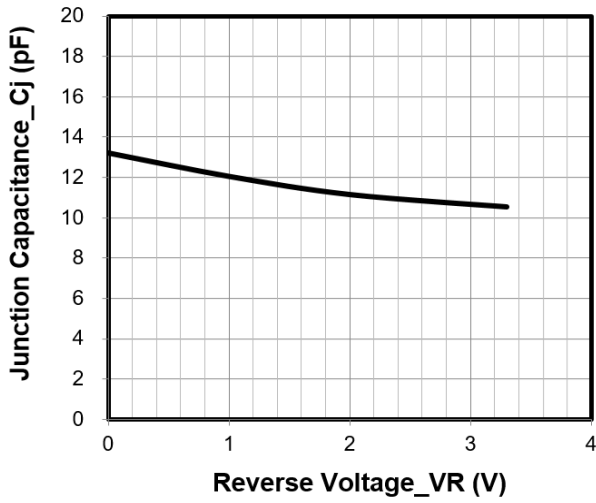
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Peak Pulse Power (8/20 μs)	PPK	240	W
Peak Pulse Current	I _{PP}	16	A
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

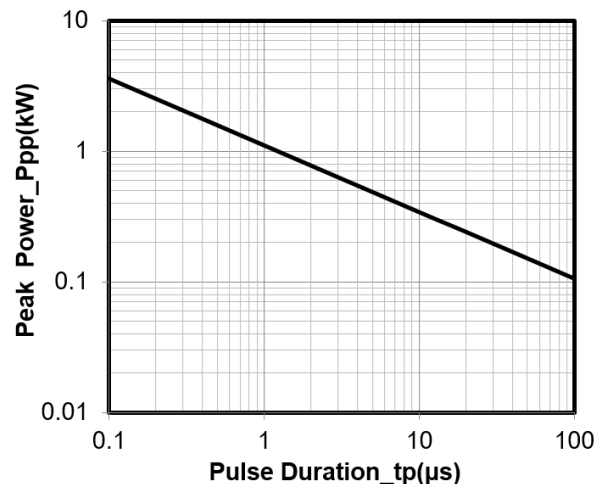
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	Pin 1 to Pin 2 or Pin 2 to Pin 1
Breakdown Voltage	V _{BR}	3.5			V	I _T = 1mA, Pin 1 to Pin 2 or Pin 1 to Pin 2
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 3.3V, Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	V _C			7	V	I _{PP} = 1A (8 x 20 μs pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Clamping Voltage	V _C			15	V	I _{PP} = 16A (8 x 20 μs pulse), Pin 1 to Pin 2 or Pin 1 to Pin 2
Junction Capacitance	C _J		13		pF	V _R = 0V, f = 1MHz

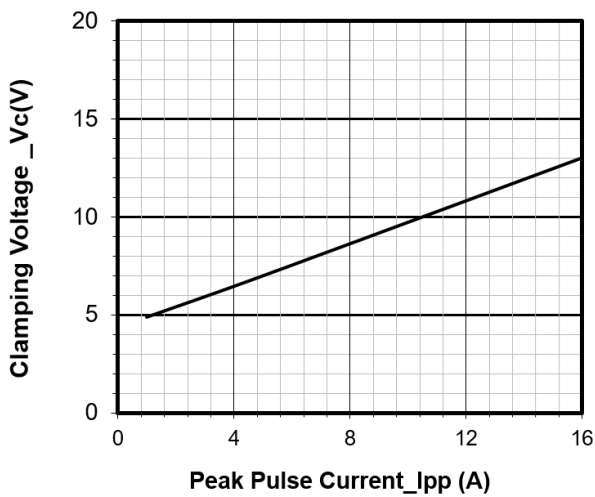
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



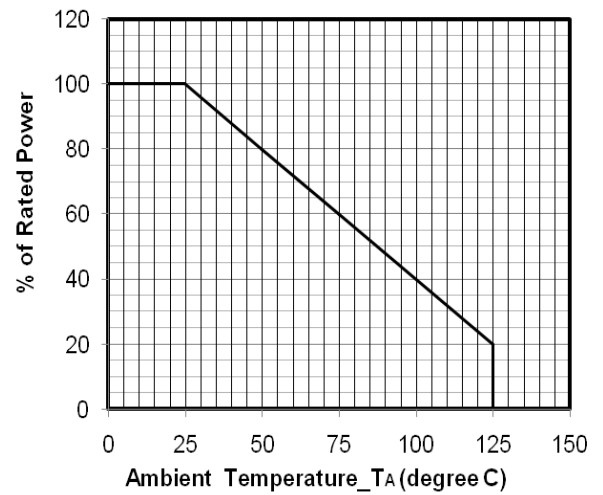
Junction Capacitance vs. Reverse Voltage



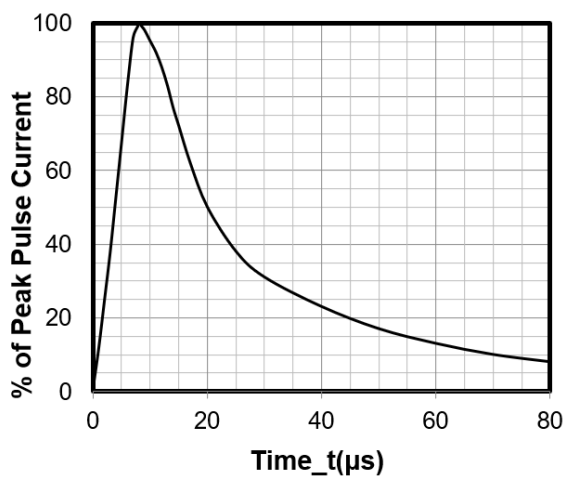
Peak Pulse Power vs. Pulse Time



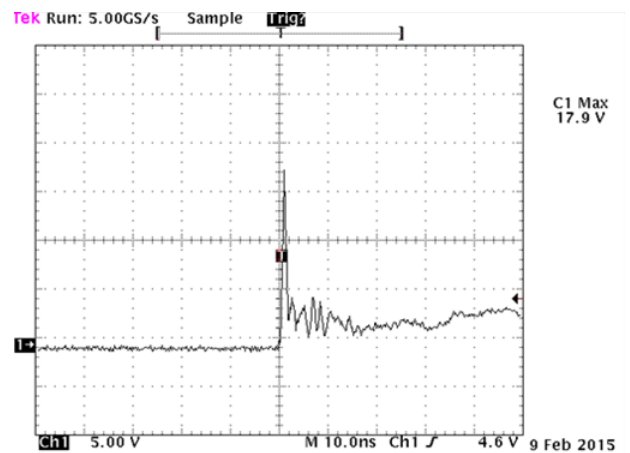
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu\text{s}$)



Power Derating Curve



8 X 20μs Pulse Waveform

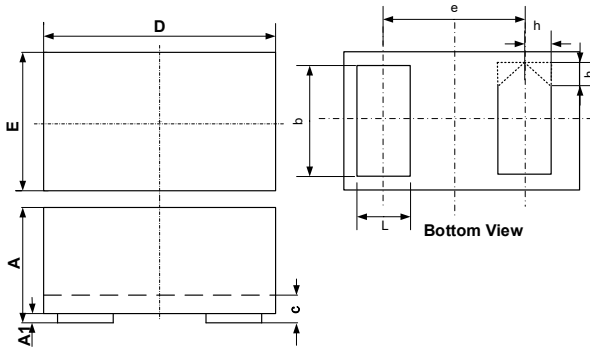


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

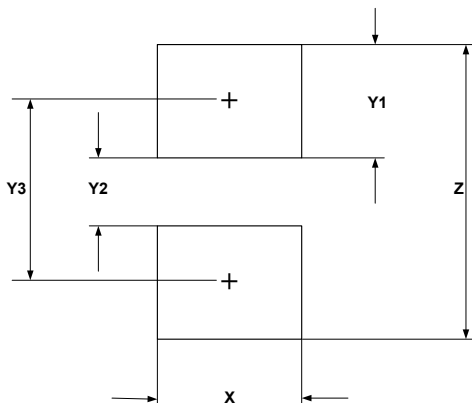
+8 kV Contact per IEC61000-4-2

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

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