

Description

The AU2021P0LV is a 20V 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 data and power line. The AU2021P0LV complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV contact discharge. It is assembled into an ultra-small lead-free DFN0603-2 package. The small size and high ESD surge protection make AU2021P0LV an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 20V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC61000-4-5 (Lightning) 5A (8/20 μ s)
- RoHS Compliant

Mechanical Characteristics

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

Applications

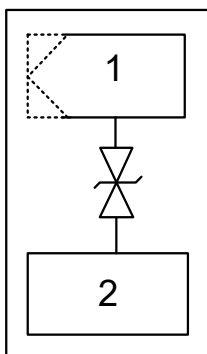
- Smartphones, mobile phones and accessories
- Notebooks and Handhelds
- Tablet, PC, netbooks and notebooks
- Digital cameras and camcorders
- Communication and highly integrated systems

Marking Information



DL = Device Marking Code

Equivalent Circuit and Pin Configuration



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU2021P0LV	10000/Tape & Reel	7 inch

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	160	W
Peak Pulse Current (8/20μs)	Ipp	5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±20	kV
Operating Temperature Range	TJ	-40 to +150	°C
Storage Temperature Range	Tstg	-65 to +150	°C

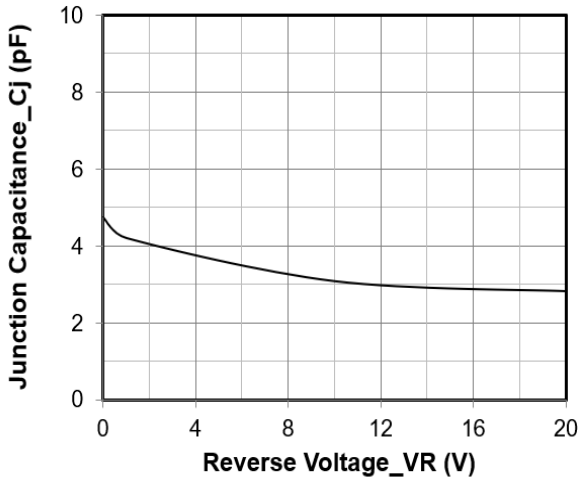
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			20	V	
Breakdown Voltage	VBR	22			V	IT = 1mA
Reverse Leakage Current	IR			0.5	μA	VRWM = 20V
Clamping Voltage	VC			32	V	IPP = 5A (8 x 20μs pulse)
ESD Clamping Voltage ⁽¹⁾	VC		25.6		V	IPP = 4A, tp = 0.2/100ns (TLP)
			29.1		V	IPP = 16A, tp = 0.2/100ns (TLP)
Dynamic Resistance ⁽²⁾	R _{DYN}		0.29		Ohm	tp = 0.2/100ns (TLP)
Junction Capacitance	CJ		5		pF	VR = 0V, f = 1MHz

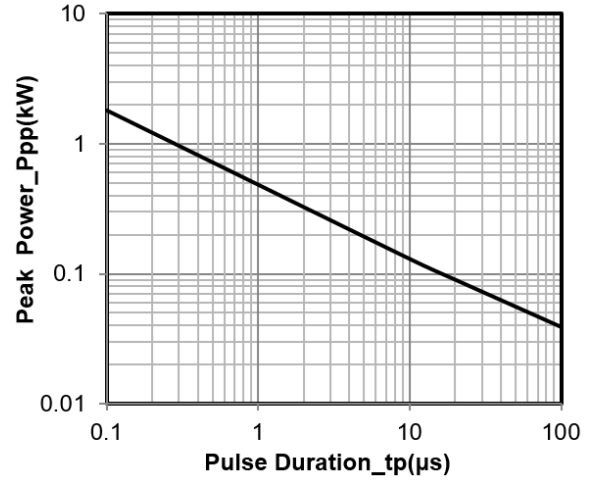
(1) Transmission Line Pulse Test (TLP) Settings: tp = 100ns, tr = 0.2ns.

(2) Dynamic resistance calculated from ITLP = 4A to ITLP = 16A.

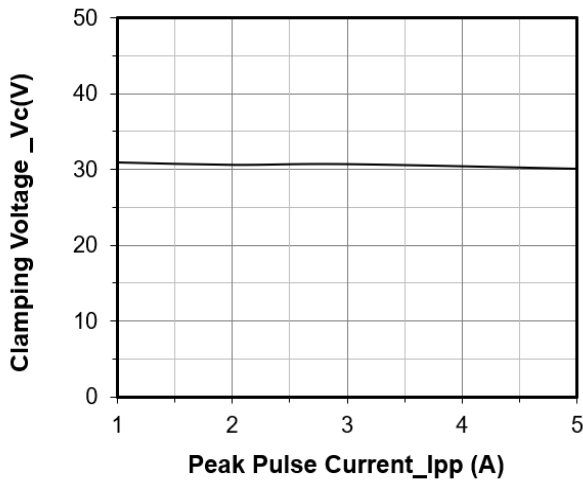
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



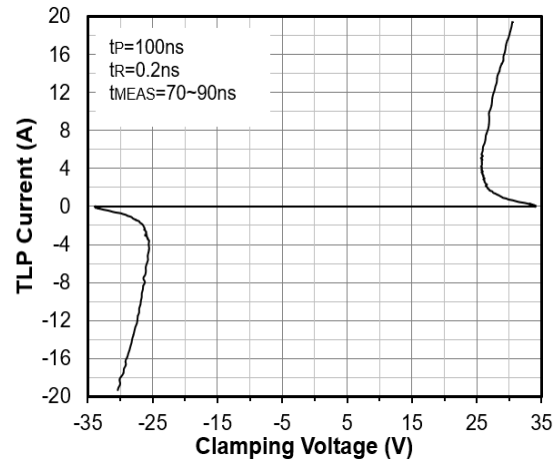
Junction Capacitance vs. Reverse Voltage



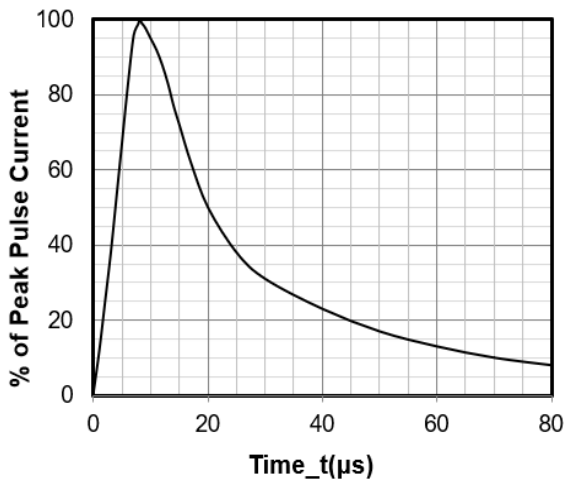
Peak Pulse Power vs. Pulse Time



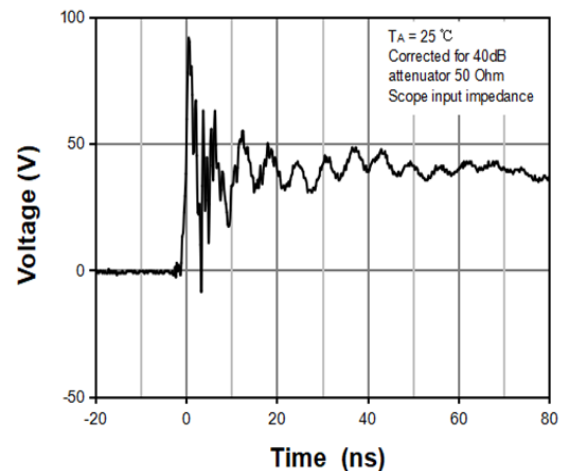
Clamping Voltage vs. Peak Pulse Current(tp = 8/20μs)



TLP Measurement



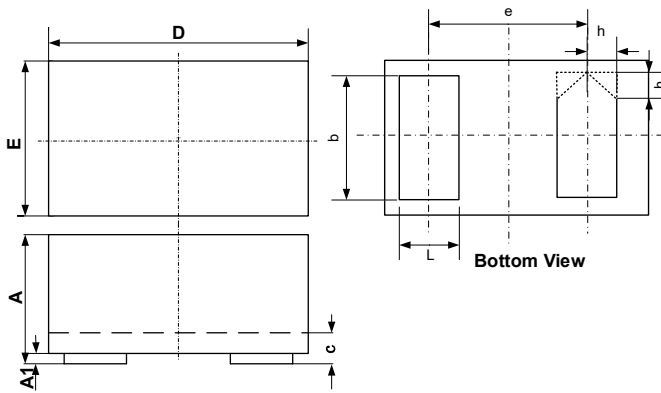
8 X 20μs Pulse Waveform



ESD Clamping Voltage

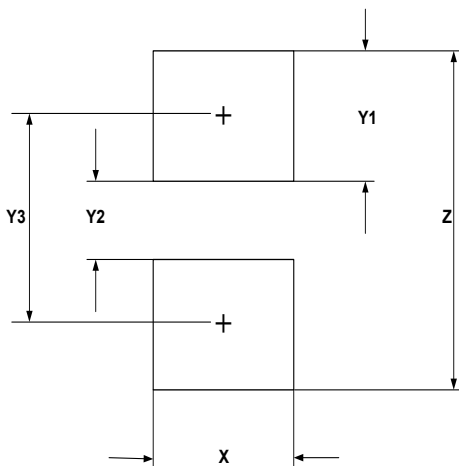
8 kV Contact per IEC61000-4-2

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

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