

Description

The AU4521P4-3 is a high power TVS, 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 lines. The AU4521P4-3 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 a 3-pin DFN2020-3 lead-free package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

Features

- 6000W peak pulse power (8/20 μs)
- Low leakage: nA level
- Operating voltage: 4.5V
- Ultra low clamping voltage
- One power line protects
- 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) 300A (8/20 μs)
- RoHS Compliant

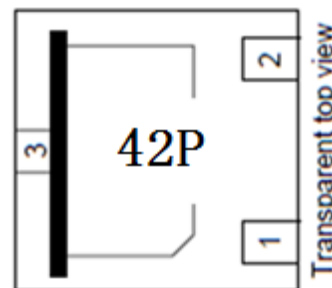
Mechanical Characteristics

- Package: DFN2020-3
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Power Management
- Industrial Application
- Power Supply Protection
- Notebooks, desktops, and servers

Marking Information

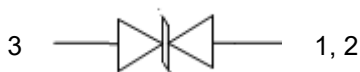


42P: Device Marking Code
Bar denotes cathode

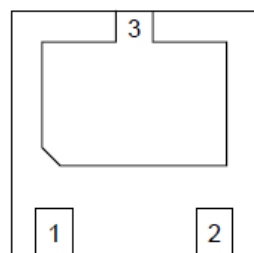
Ordering Information

Part Number	Packaging	Reel Size
AU4521P4-3	3000/Tape & Reel	7 inch

Dimensions and Pin Configuration



Circuit Diagram



Transparent top view

Pin Schematic

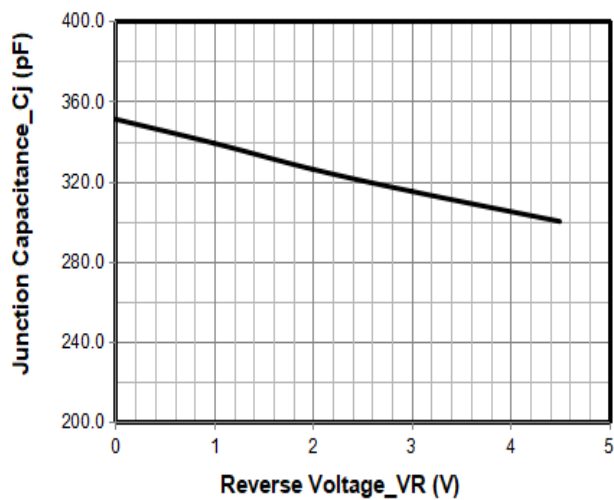
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	6000	W
Peak Pulse Current (8/20 μs)	I _{PP}	300	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	± 30 ± 30	kV
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

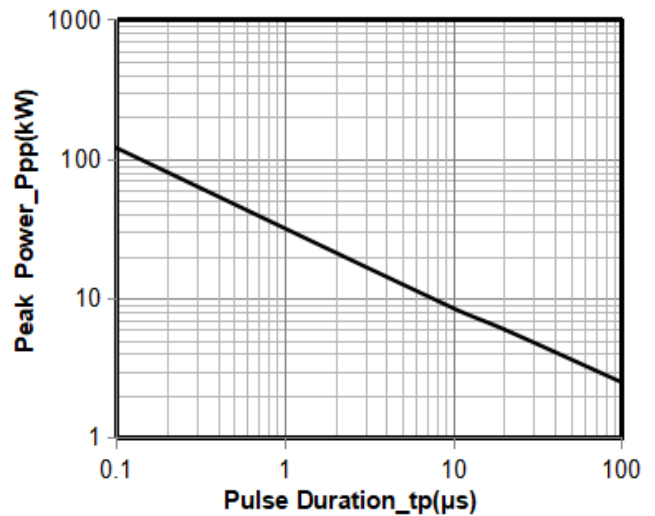
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			4.5	V	
Breakdown Voltage	V _{BR}	4.8			V	I _T = 1mA
Reverse Leakage Current	I _R			1.0	μA	V _{RWM} = 4.5V
Clamping Voltage	V _C			8.5	V	I _{PP} = 50A (8 x 20 μs pulse)
Clamping Voltage	V _C			20	V	I _{PP} = 300A (8 x 20 μs pulse)
Junction Capacitance	C _J		350		pF	V _R = 0V, f = 1MHz

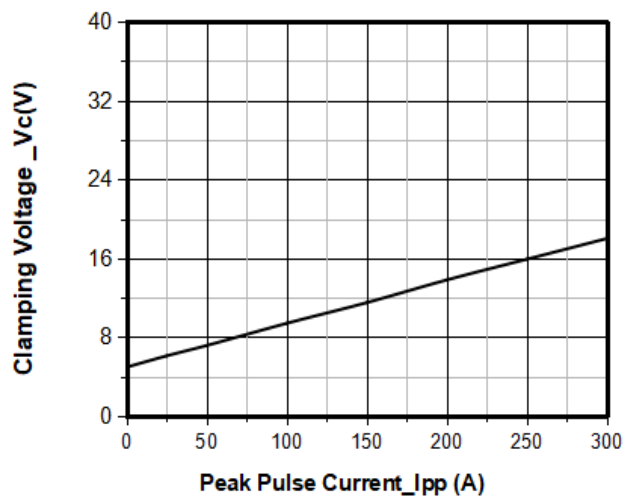
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



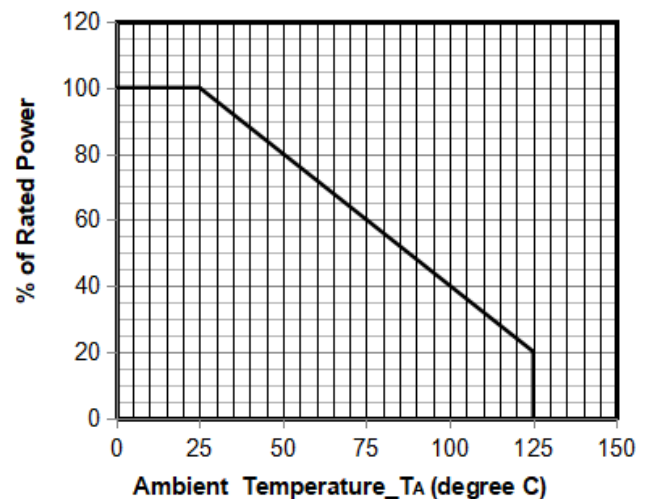
Junction Capacitance vs. Reverse Voltage



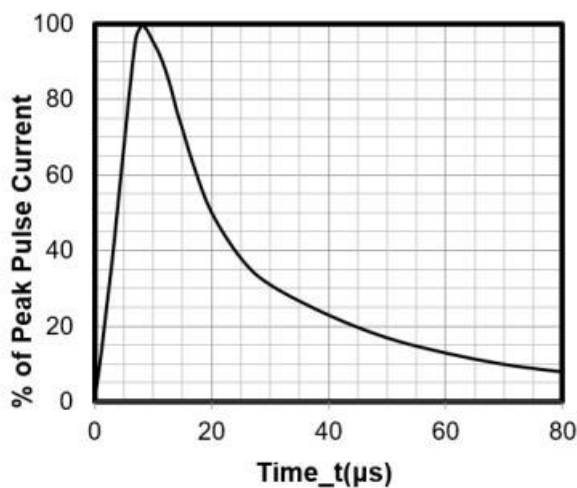
Peak Pulse Power vs. Pulse Time



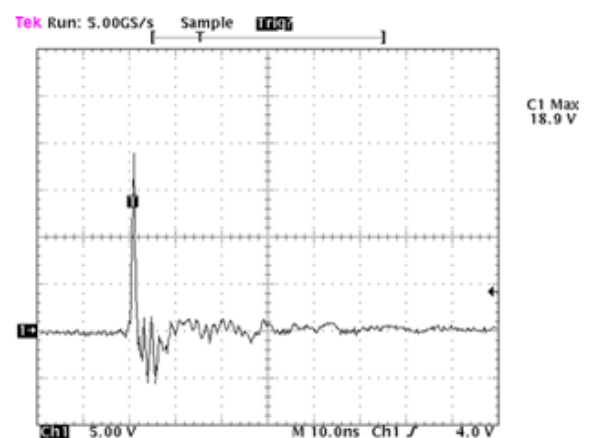
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20 μs Pulse Waveform

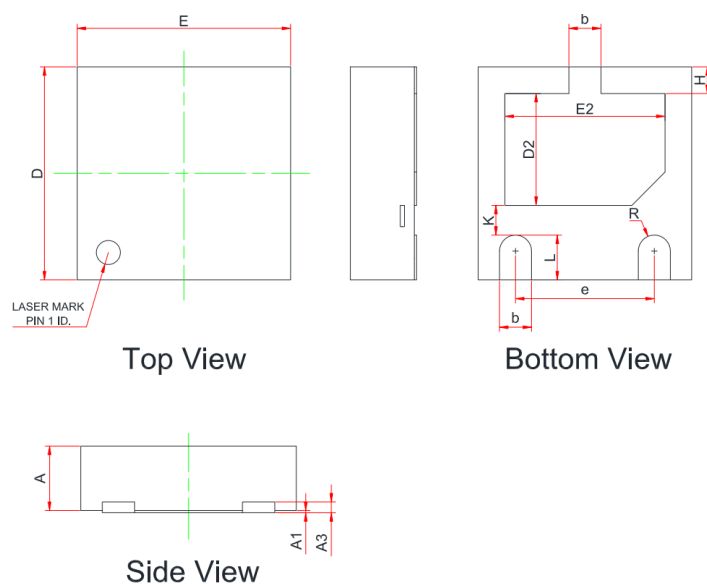


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

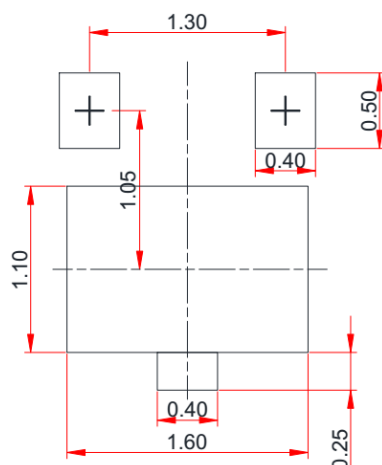
8 kV Contact per IEC61000-4-2

DFN2020-3 Package Outline Drawing



	MILLIMETERS		
	MIN	NOM	MAX
A	0.55	0.60	0.65
A1	0.00	0.02	0.05
A3	0.10REF.		
b	0.25	--	0.35
D	1.90	--	2.10
E	1.90	--	2.10
D2	0.95	--	1.15
E2	1.40	--	1.60
e	1.20		1.40
H	0.20	--	0.30
K	0.20		0.40
L	0.35	--	0.45
R	0.13	--	--

Suggested Land Pattern



Contact Information

Applied Power Microelectronics Inc.

Website: <http://www.appliedpowermicro.com>

Email: sales@appliedpowermicro.com

Phone: +86 (0519) 8399 3606

Applied Power Microelectronics Inc. (APM) reserves the right to make changes to the product specification and data in this document without notice. APM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does APM assume any liability arising from the application or use of any products or circuits, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.