

Description

The AU2401P4-3FD 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 AU2401P4-3FD 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. 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

- 6400W peak pulse power (8/20 μs)
- Low leakage: nA level
- Low operating voltage: 24V
- 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) 200A (8/20 μs)
- RoHS Compliant

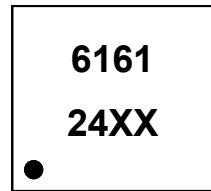
Mechanical Characteristics

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

Applications

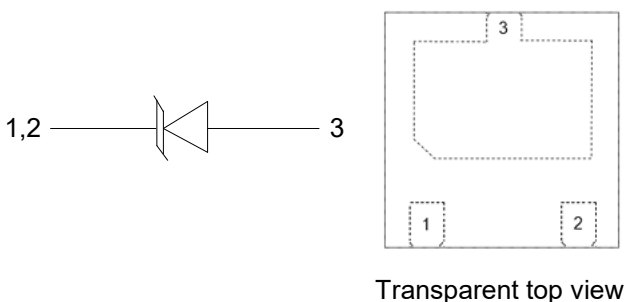
- Power Management
- Industrial Application
- Power Supply Protection

Marking Information



6161/24 = Device Marking Code
 XX = Date code

Equivalent Circuit and Pin Configuration



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU2401P4-3FD	3000/Tape & Reel	7 inch

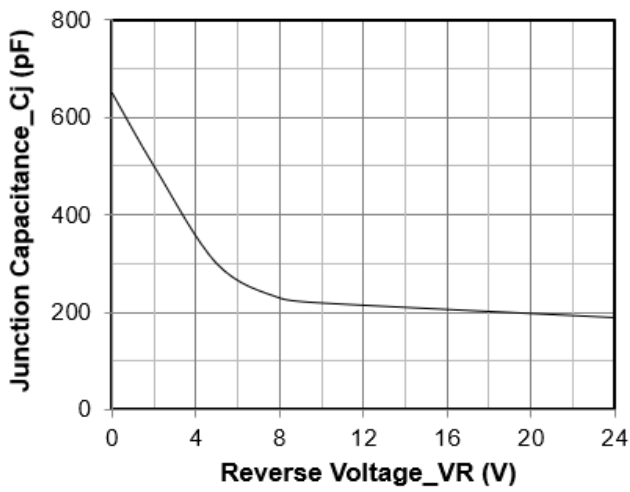
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	6400	W
Peak Pulse Current (8/20 μs)	I _{PP}	200	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

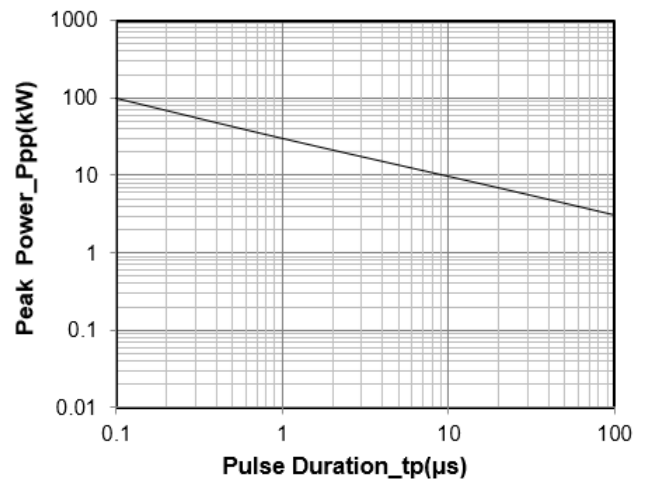
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			24	V	
Breakdown Voltage	V _{BR}	25			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 24V
Clamping Voltage	V _C			30	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			32	V	I _{PP} = 200A (8 x 20 μs pulse)
Junction Capacitance	C _J			800	pF	V _R = 0V, f = 1MHz

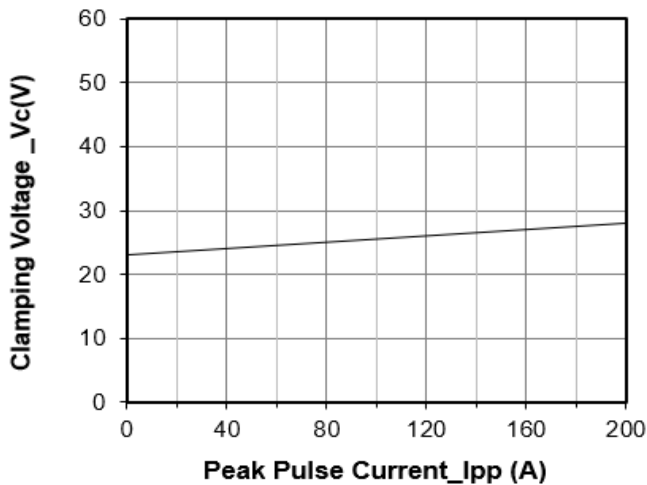
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



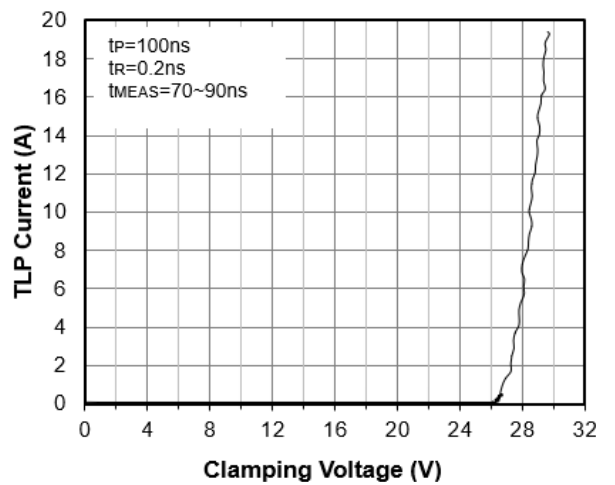
Junction Capacitance vs. Reverse Voltage



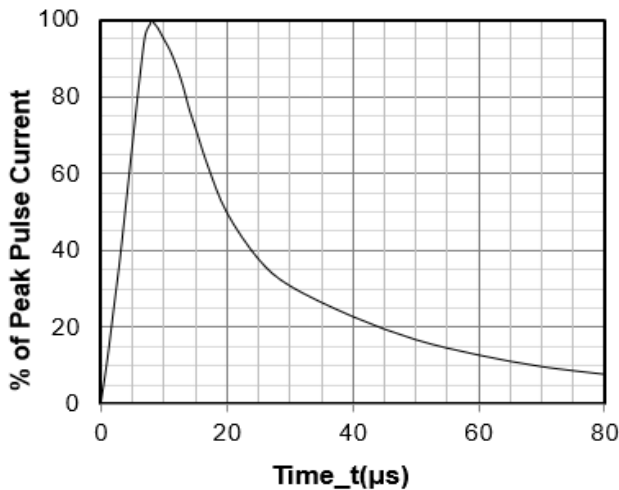
Peak Pulse Power vs. Pulse Time



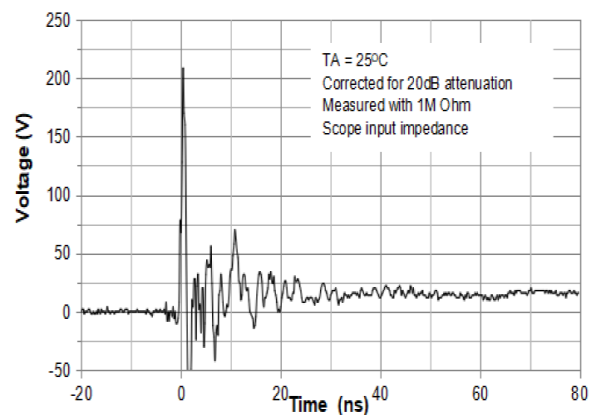
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu\text{s}$)



TLP Measurement



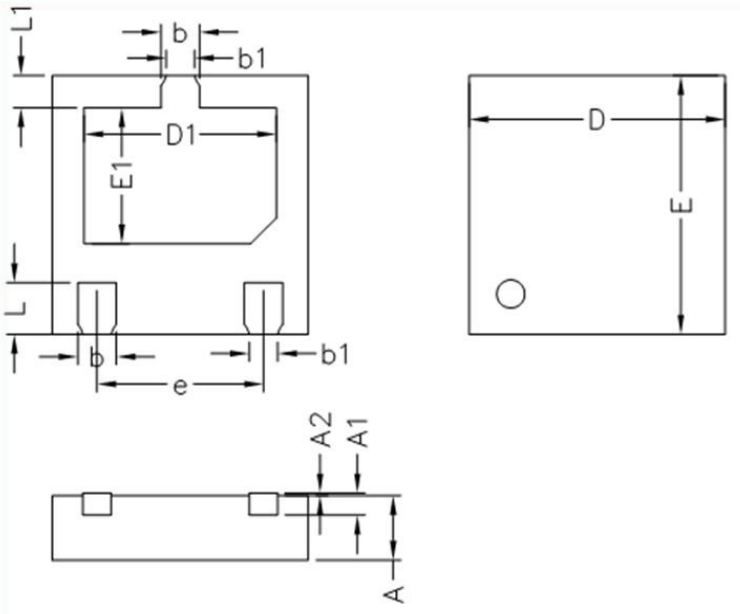
8 X 20μs Pulse Waveform



ESD Clamping Voltage

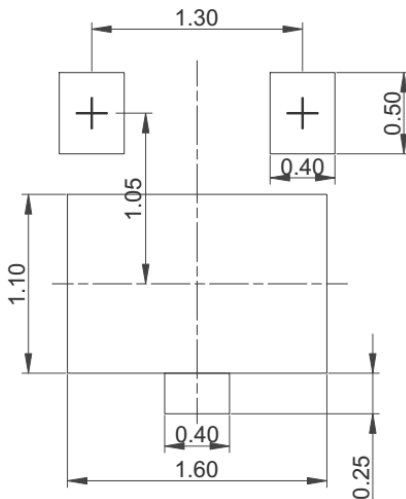
8 kV Contact per IEC61000-4-2

DFN2020-3 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.60
A1	0.15REF		
A2	0.00	0.02	0.05
b	0.25	0.30	0.35
b1	0.22REF		
D	1.95	2.00	2.05
D1	1.45	1.50	1.55
E	1.95	2.00	2.05
E1	1.00	1.05	1.10
e	1.30BSC		
L	0.35	0.40	0.45
L1	0.20	0.25	0.30

Suggested Land Pattern



Unit: mm

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