Description

The AU0501P4-3F 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 AU0501P4-3F complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV 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

- 7000W peak pulse power (8/20μs)
- Low leakage: nA level
- Operating voltage: 5V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30V
  - IEC61000-4-5 (Lightning) 280A (8/20μs)
- RoHS Compliant

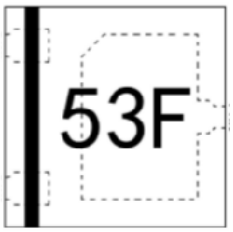
Mechanical Characteristics

- Package: DFN2020-3
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

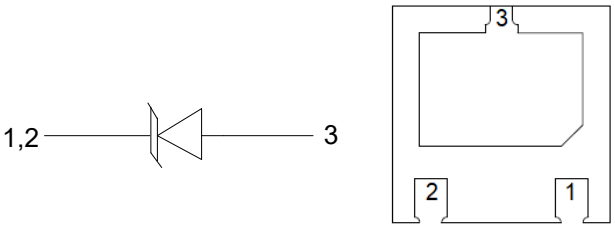
- Power Management
- Industrial Application
- Power Supply Protection

Marking Information



53F=Device Marking Code

Equivalent Circuit and Pin Configuration



Circuit and Pin Schematic

Part Number	Packaging	Reel Size
AU0501P4-3F	3000/Tape & Reel	7 inch

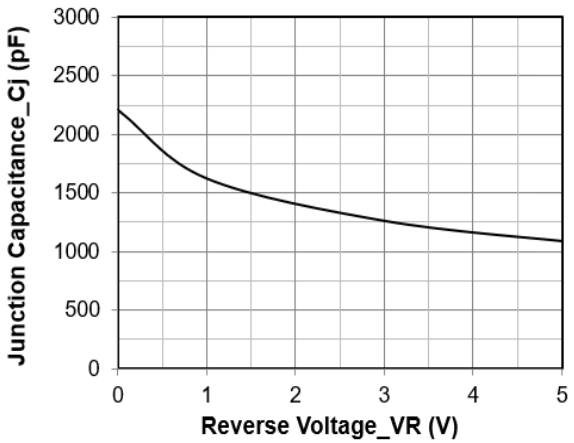
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	7000	W
Peak Pulse Current (8/20μs)	I_{PP}	280	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	°C
Storage Temperature Range	Tstg	−55 to +150	°C

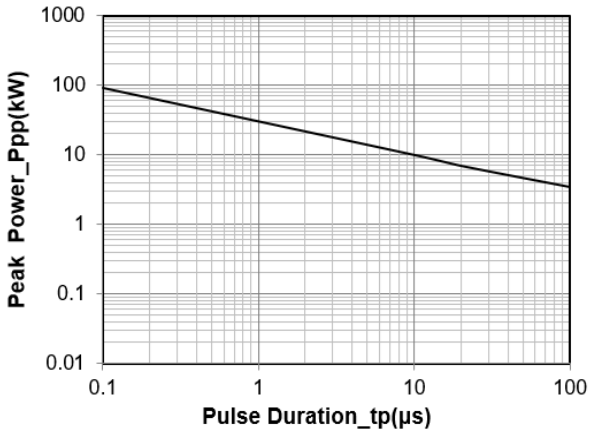
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 5V
Clamping Voltage	V_C			10	V	I_{PP} = 1A (8 x 20μs pulse)
				25	V	I_{PP} = 280A (8 x 20μs pulse)
Junction Capacitance	C_J		2200		pF	VR = 0V, f = 1MHz, Pin1,2 to Pin3

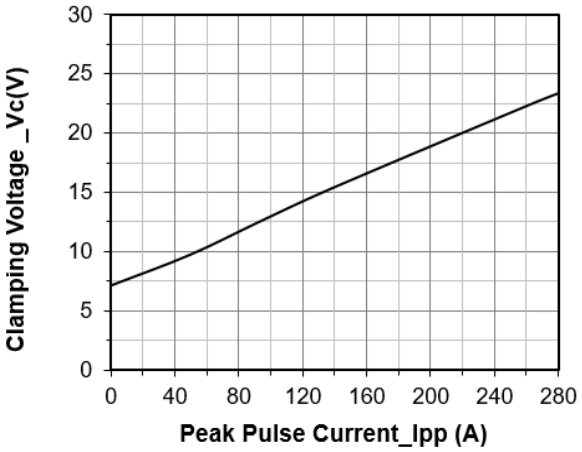
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



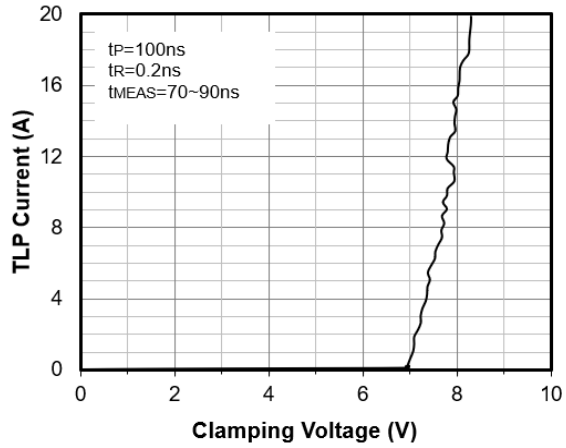
Junction Capacitance vs. Reverse Voltage



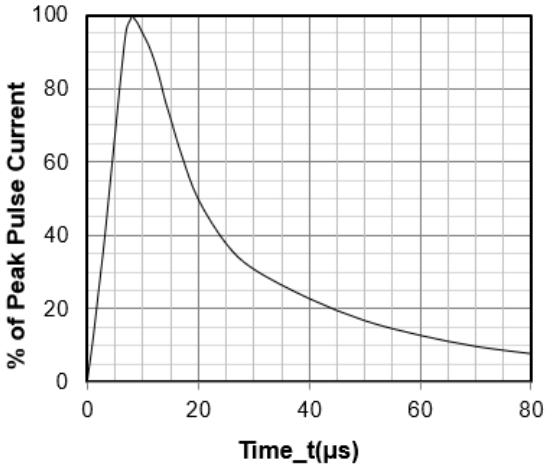
Peak Pulse Power vs. Pulse Time



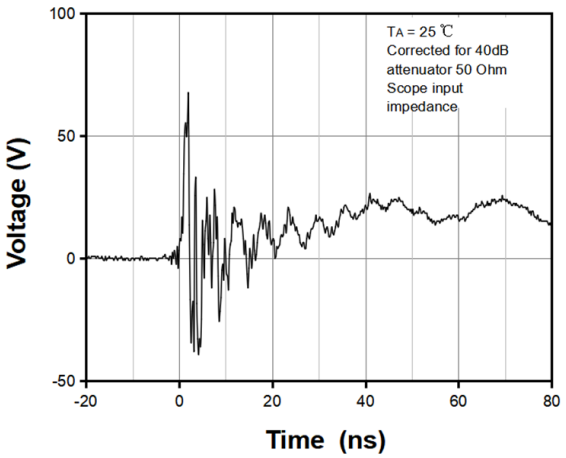
Clamping Voltage vs. Peak Pulse Current(tp = 8/20μs)



TLP Measurement



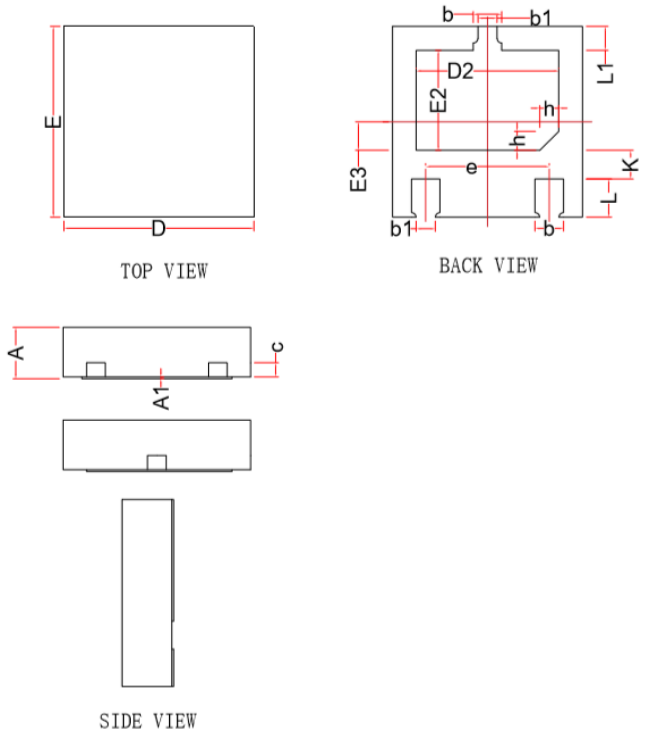
8 X 20μs Pulse Waveform



ESD Clamping Voltage

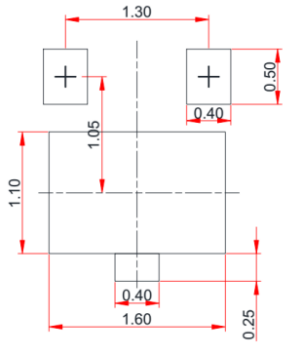
8 kV Contact per IEC61000−4−2

DFN2020-3 Package Outline Drawing



	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	- -	0.65
A1	0.00	- -	0.05
b	0.25	- -	0.35
b1		0.20REF.	
c		0.152 REF.	
D	1.90	- -	2.10
D2	1.40	- -	1.60
e		1.30BSC	
E	1.90	- -	2.10
E2	0.95	- -	1.15
L	0.35	- -	0.45
L1	0.20	- -	0.30
h		0.2 REF.	
K	0.20	- -	0.40

Suggested Land Pattern



Contact Information

Applied Power Microelectronics Inc.

Website: http://www.appliedpowermicro.com

Email: sales@appliedpowermicro.com

Phone: +86 (0519) 8399 3606