

Description

The XU4521P4-3 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 XU4521P4-3 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

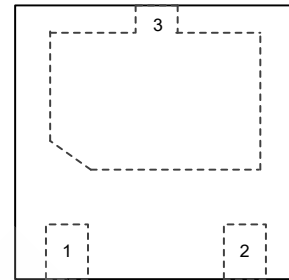
- Low leakage: nA level
- Low operating voltage: 5V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 300A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

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

Applications

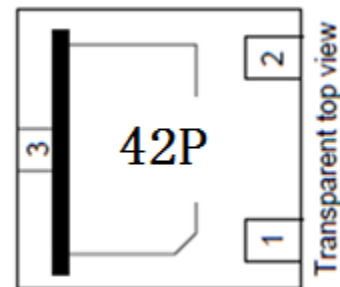
- Power Management
- Industrial Application
- Power Supply Protection



DFN2020-3 Pin configuration



Circuit diagram



42P: Device Marking Code

Bar denotes cathode

Marking (Top View)

Ordering Information

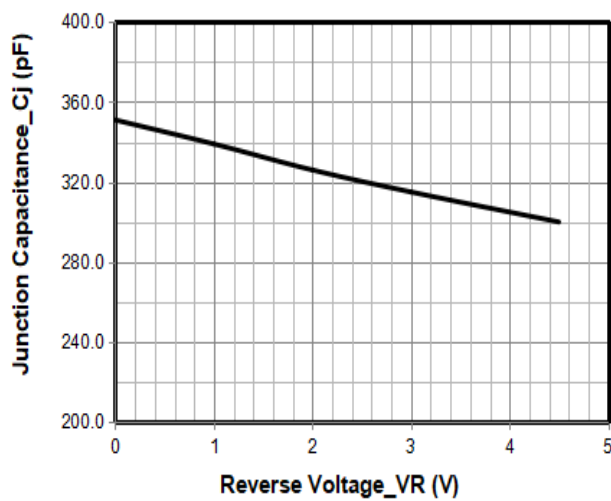
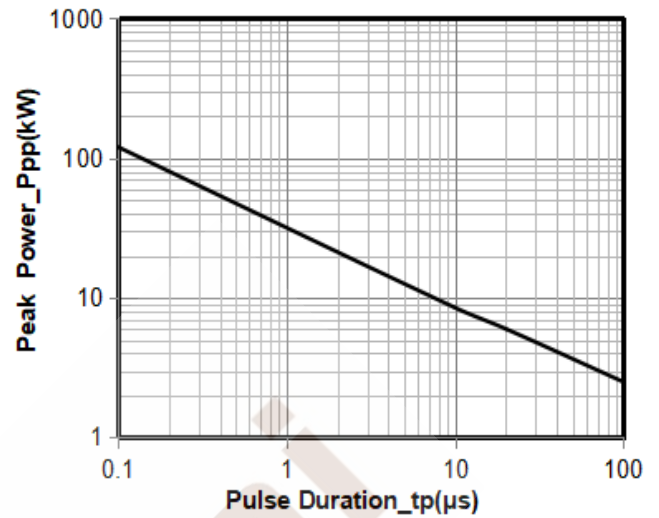
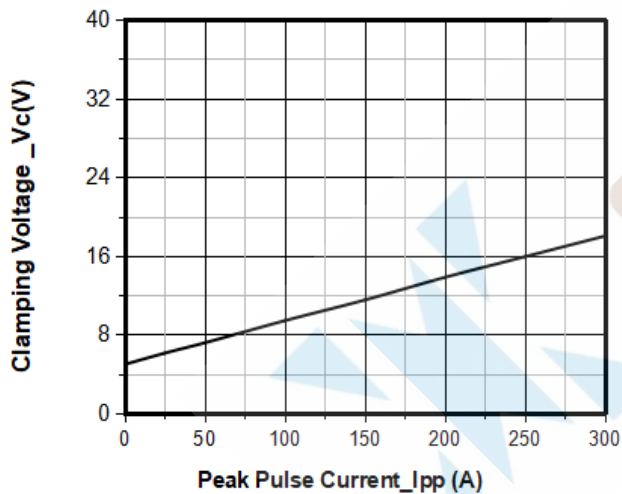
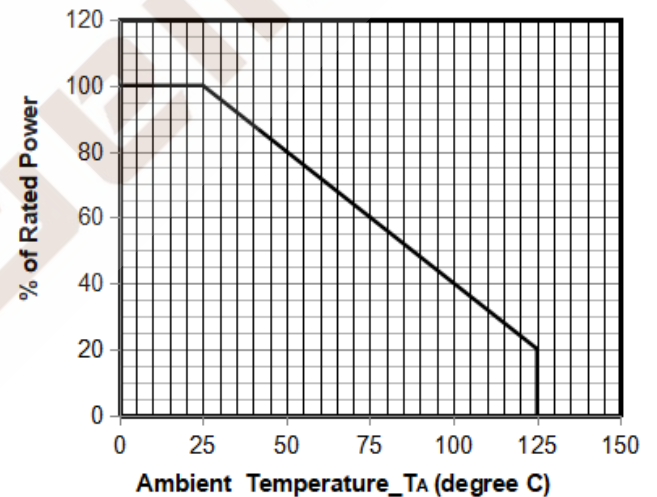
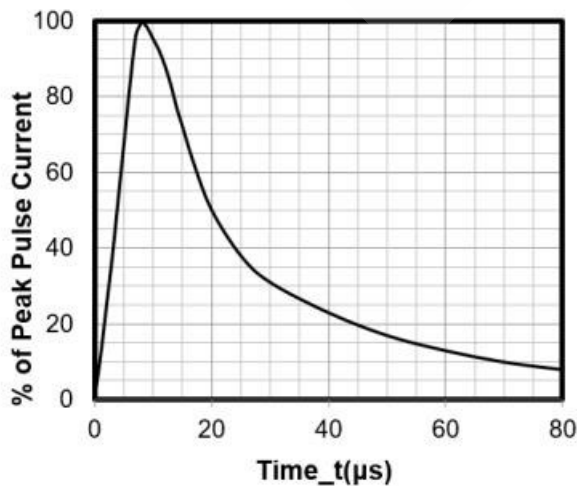
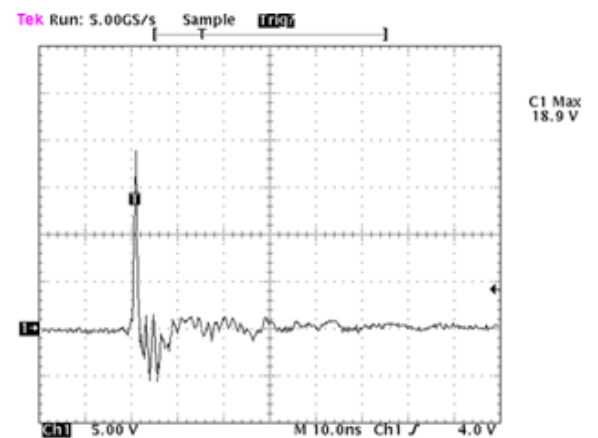
Part Number	Packaging	Reel Size
X 4521P4-3	3000/Tape & Reel	7 inch

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	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

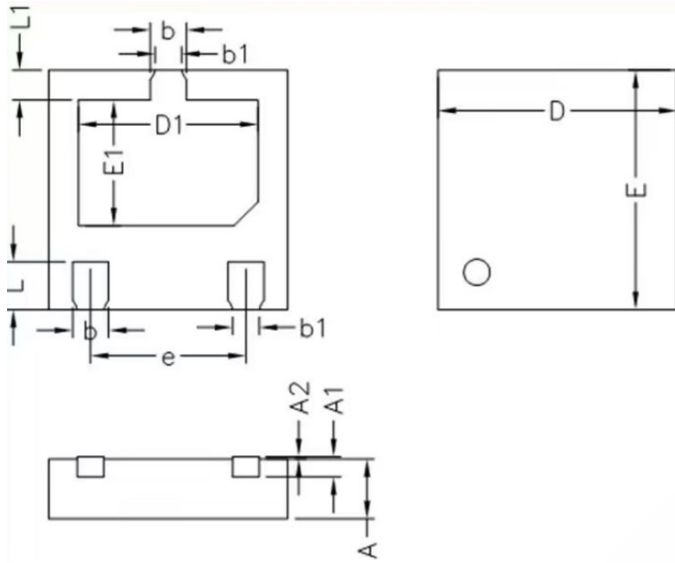
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

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

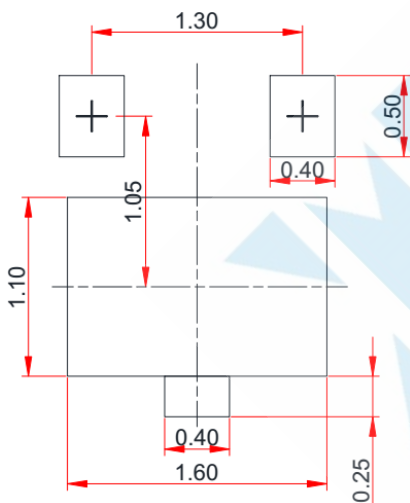
8 kV Contact per IEC61000-4-2

DFN2020-3 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	1.45	1.50	1.55
E1	1.00	1.05	1.10
L1	0.20	0.25	0.30
L	0.35	0.40	0.45
b1	0.22REF		
b	0.25	0.30	0.35
e	1.30BSC		
A1	0.15REF		
A2	0.00	0.02	0.05
A	0.45	0.50	0.55

Suggested Land Pattern



Unit: mm

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