

Description

The AU2512PT is a 2.5V bi-directional ESD protection diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The AU2512PT 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 an ultra-small DFN lead-free package. The small size and high ESD surge protection make AU2512PT an ideal choice to protect high speed Ethernet and RJ-45 connectors.

Features

- Protects two line pairs
- Ultra low leakage: nA level
- Ultra low operating voltage: 2.5V
- Ultra low clamping voltage
- Flow-through design simplifies layout
- Complies with following standards:
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (Contact/Air)
 - IEC 61000-4-5 (Lightning) 10A (8/20 μs)
- RoHS Compliant

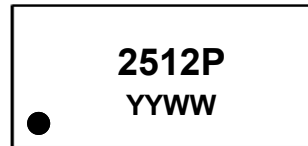
Mechanical Characteristics

- Package: DFN2010-8
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

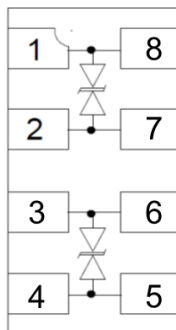
- LAN/WAN Equipment
- 10/100/1000 Ethernet
- RJ-45 connectors
- Industrial Controls
- Security Cameras
- Notebooks & Desktop Computers

Marking Information



2512P = Marking Code
 YYWW = Date Code
 Dot denotes pin1

Dimensions and Pin Configuration



Circuit and Pin Schematic

Ordering Information

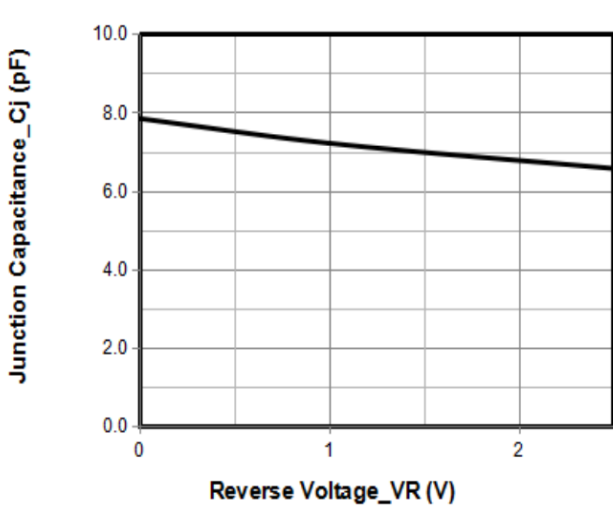
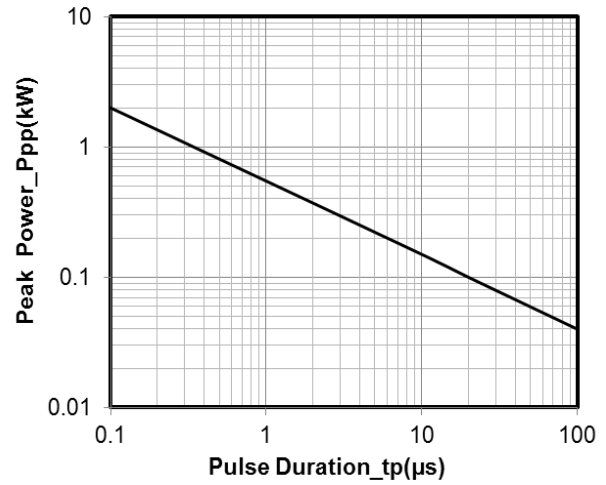
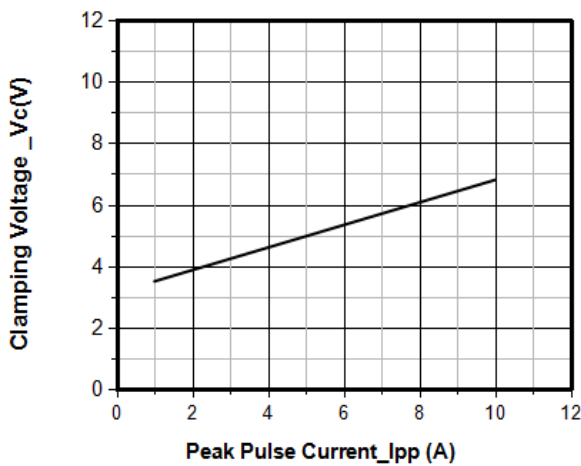
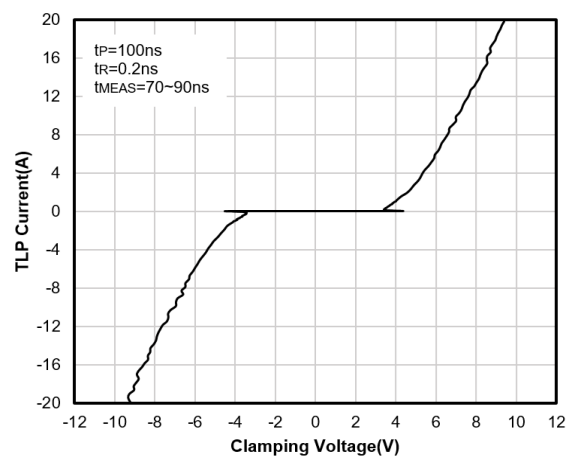
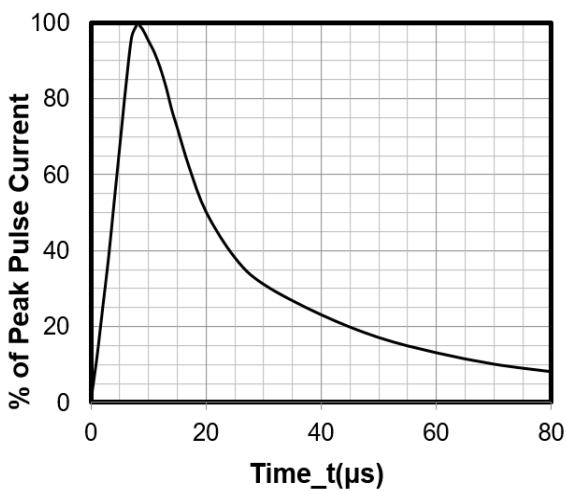
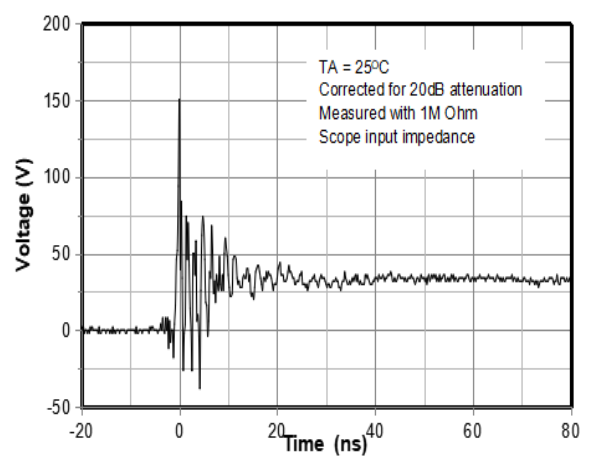
Part Number	Packaging	Reel Size
AU2512PT	3,000/Tape & Reel	7 inch

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

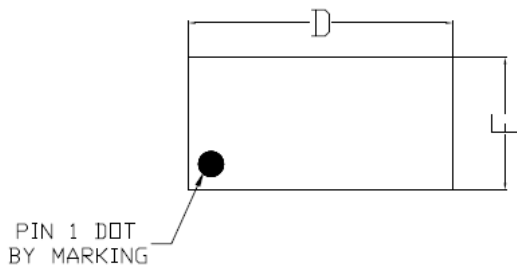
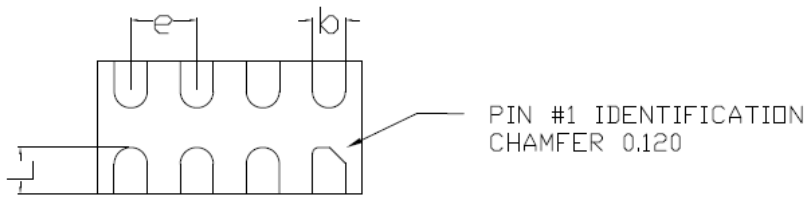
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	100	W
Peak Pulse Current (8/20 μs)	Ipp	10	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-40 to +85	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

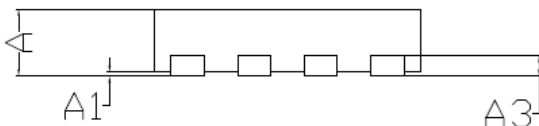
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			2.5	V	
Punch-Through Voltage	VPT	2.7			V	$I_T = 2\mu\text{A}$
Snap-Back Voltage	VSB	2.8			V	$I_T = 50\text{mA}$
Reverse Leakage Current	I _R			0.2	μA	VRWM = 2.5V
Clamping Voltage	VC			5	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	VC			10	V	I _{PP} = 10A (8 x 20 μs pulse)
Junction Capacitance	CJ			8	pF	Pins 1, 8 to 2, 7 and pins 3, 6 to 4, 5 VR = 2.5V, f = 1MHz
Variation in Capacitance with Reverse Bias*			1.3		pF	Pins 1, 8 to 2, 7 and pins 3, 6 to 4, 5 VR = 0 to 2.5V f = 1MHz

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

TLP Curve

8 X 20μs Pulse Waveform

ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

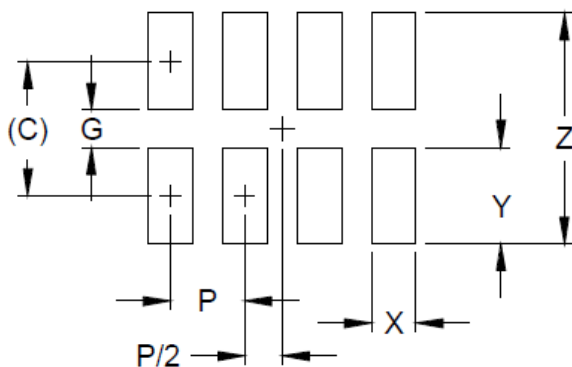
DFN2010-8 Package Outline Drawing



SYMBOL	MILLMETER(mm)		
	MIN	NOM	MAX
A	0.527	0.55	0.57
A1	0	-	0.05
A3	0.125REF		
D	1.95	2	2.05
E	0.95	1	1.05
L	0.25	0.35	0.45
b	0.2	0.25	0.3
e	0.50Bsc		



Suggested Land Pattern



DIMENSIONS	
DIM	MILLIMETERS
C	(0.90)
G	0.25
P	0.50
X	0.30
Y	0.65
Z	1.55

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