

Description

The AU0504PE is a 5V bi-directional TVS diode array, 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 AU0504PE complies with the IEC 61000-4-2 (ESD) with $\pm 25\text{kV}$ air and $\pm 25\text{kV}$ contact discharge. It is assembled into DFN lead-free package. The small size and high ESD surge protection make AU0504PE an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra low leakage: nA level
- Ultra low operating voltage: 5V
- Ultra low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 25\text{kV}$
Contact discharge: $\pm 25\text{kV}$
 - IEC61000-4-5 (Lightning) 2A (8/20 μs)
- RoHS Compliant

Mechanical Characteristics

- Package: DFN1510-6
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

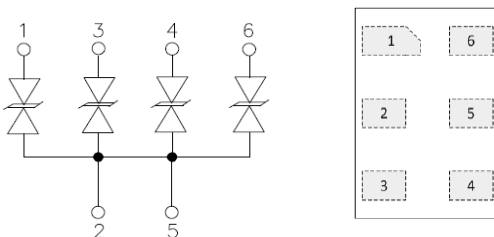
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information



5PE = Device Marking Code

Equivalent Circuit and Pin Configuration



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU0504PE	3000/Tape & Reel	7 inch

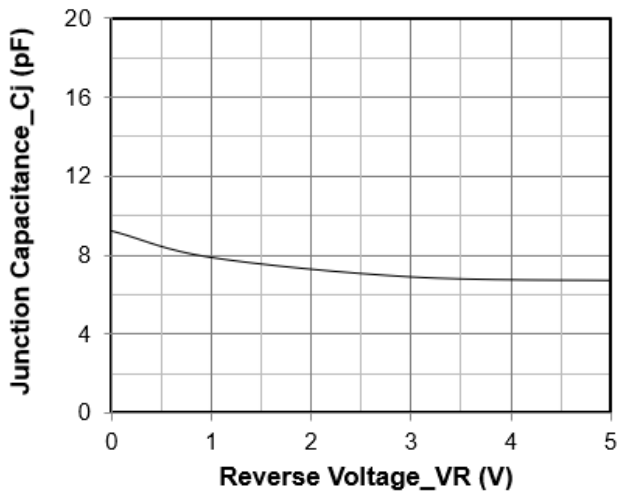
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	24	W
Peak Pulse Current (8/20 μs)	Ipp	2	A
ESD per IEC 61000-4-2 (Air)	VESD	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 25	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

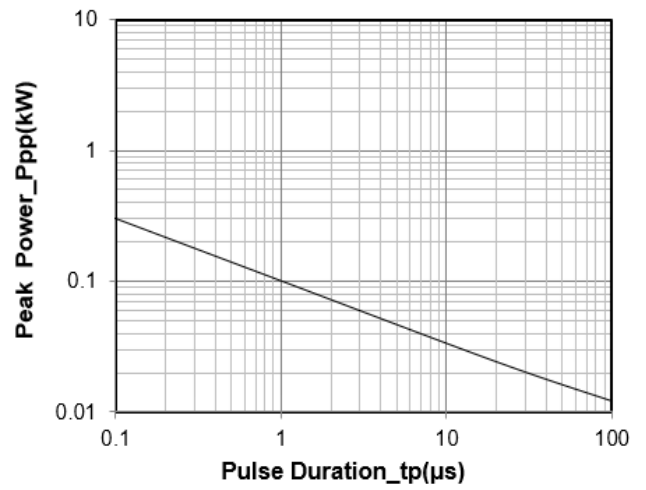
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I _R			0.2	μA	VRWM = 5V
Clamping Voltage	V _C			10	V	I _{PP} = 1A (8 x 20 μs pulse), Pin 1,3,4,6 to Pin 2,5
Clamping Voltage	V _C			12	V	I _{PP} = 2A (8 x 20 μs pulse), Pin 1,3,4,6 to Pin 2,5
Junction Capacitance	C _J		9		pF	VR = 0V, f = 1MHz, Pin 1,3,4,6 to Pin 2,5

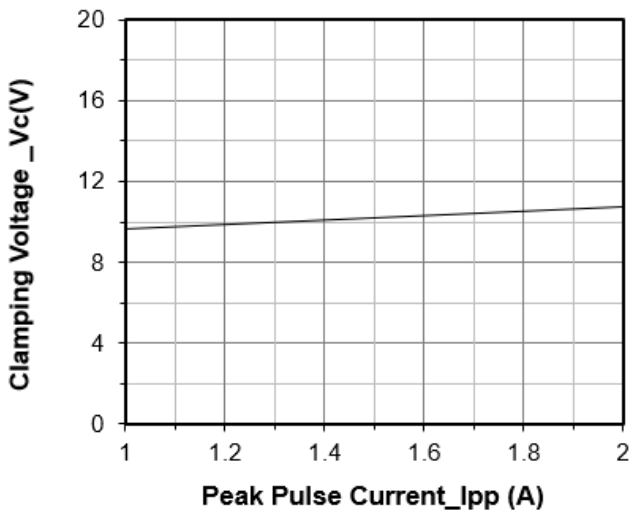
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



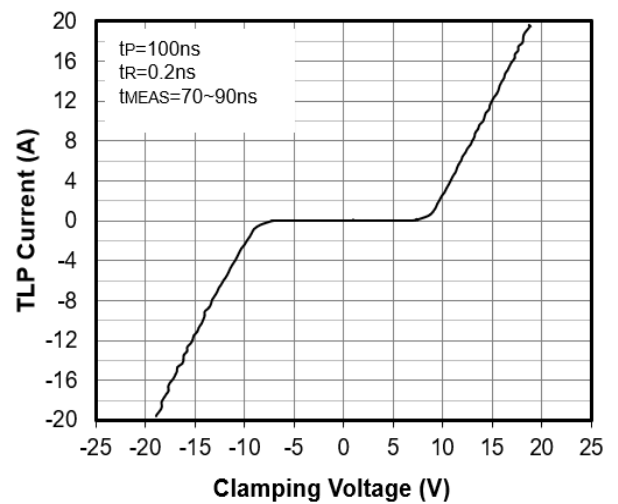
Junction Capacitance vs. Reverse Voltage



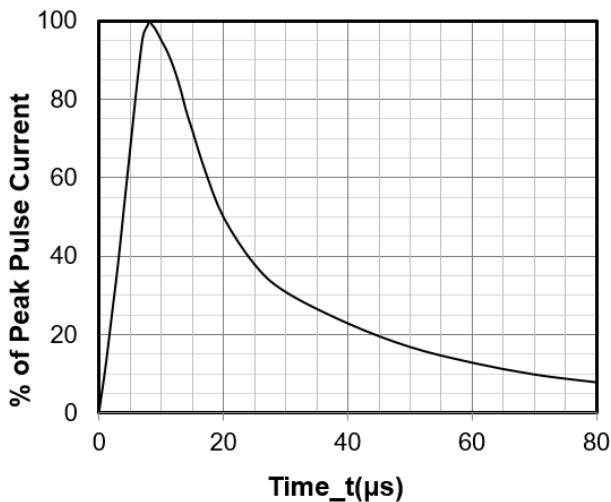
Peak Pulse Power vs. Pulse Time



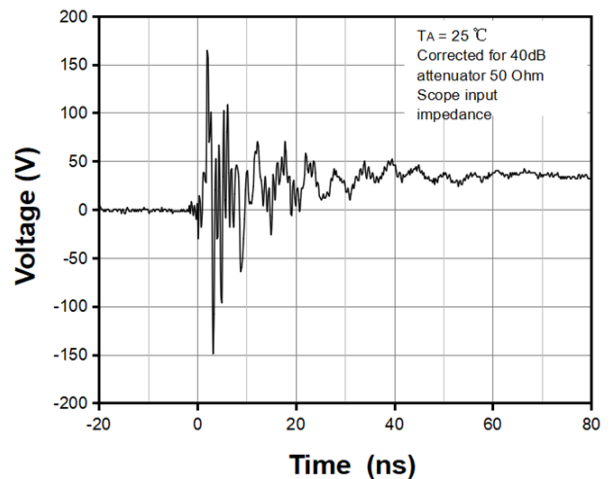
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu\text{s}$)



TLP Measurement



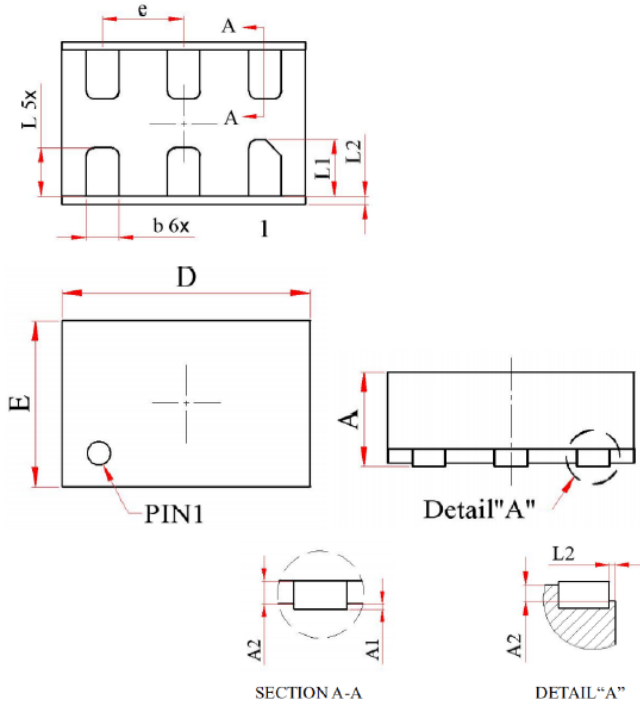
8 X 20μs Pulse Waveform



ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

DFN1510-6 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.500	--	0.600
A1	--	--	0.005
A2	0.050	--	0.250
b	0.150	0.200	0.250
D	1.450	1.500	1.550
E	0.950	1.000	1.050
e	0.50BSC		
L	0.250	0.300	0.350
L1	0.300	0.350	0.400
L2	0.010	0.050	0.090

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