

➤ General Description

The PAE2421EU is a 24V bi-directional TVS diode, 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 data and power line. The PAE2421EU complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV contact discharge. It is assembled into an ultra-small lead-free DFN1006-2 package. The small size and high ESD surge protection make PAE2421EU an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

➤ Feature

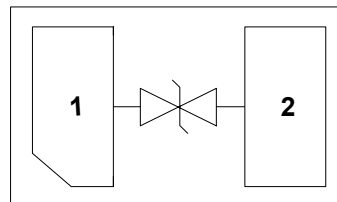
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 24V
- Low clamping voltage
- RoHS Compliant

➤ DFN-1006



➤ Application

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players



➤ Protection solution to meet

- IEC61000-4-2 (ESD) ± 30 kV (air), ± 30 kV (contact)
- IEC61000-4-5 (Lightning) 5A (8/20 μ s)

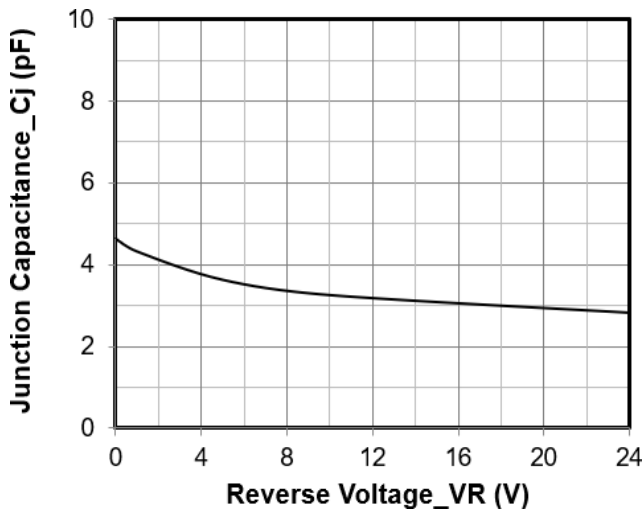
➤ **Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	150	W
Peak Pulse Current (8/20 μs)	Ipp	5	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

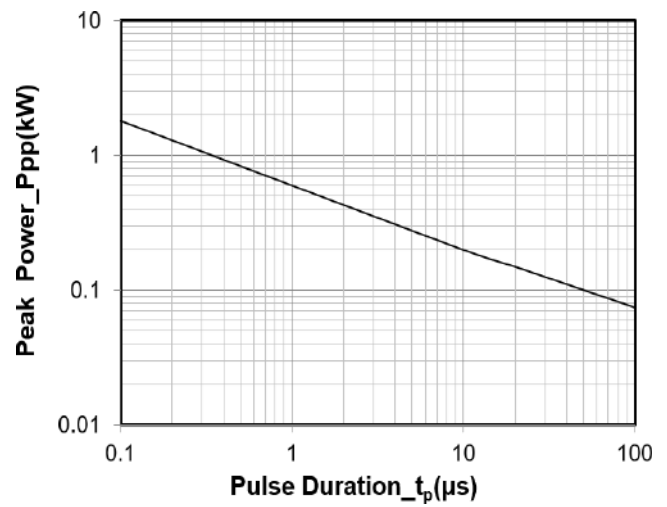
➤ **Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			24	V	
Breakdown Voltage	VBR	27			V	IT = 1mA
Reverse Leakage Current	IR			1	μA	VRWM = 24V
Clamping Voltage	VC			23	V	Ipp = 1A (8 x 20 μs pulse)
Clamping Voltage	VC			30	V	Ipp = 5A (8 x 20 μs pulse)
Junction Capacitance	CJ			15	pF	VR = 0V, f = 1MHz

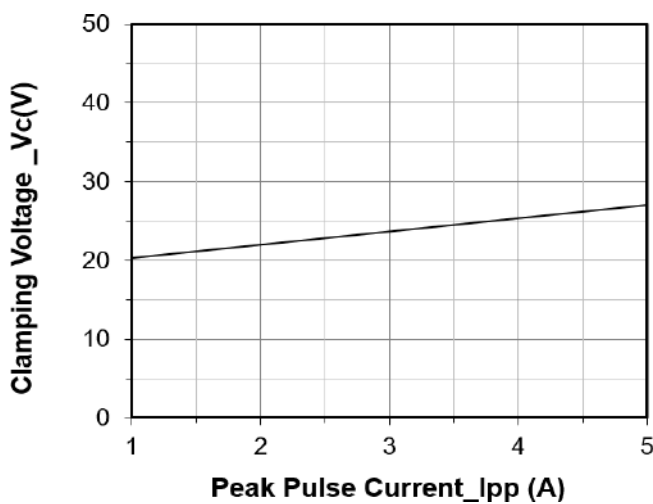
➤ Typical Characteristics



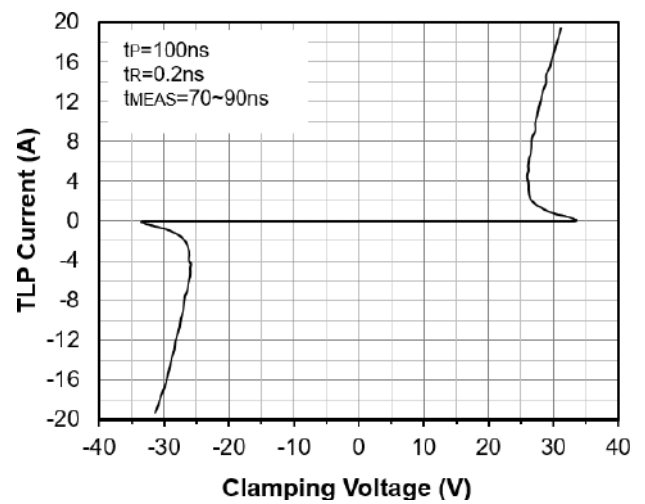
Junction Capacitance vs. Reverse Voltage



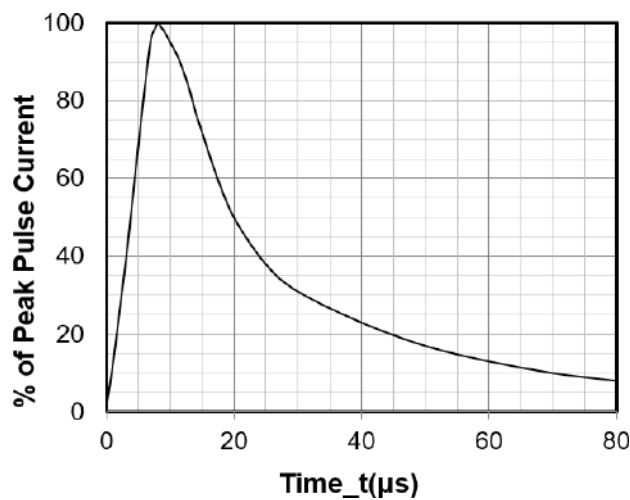
Peak Pulse Power vs. Pulse Time



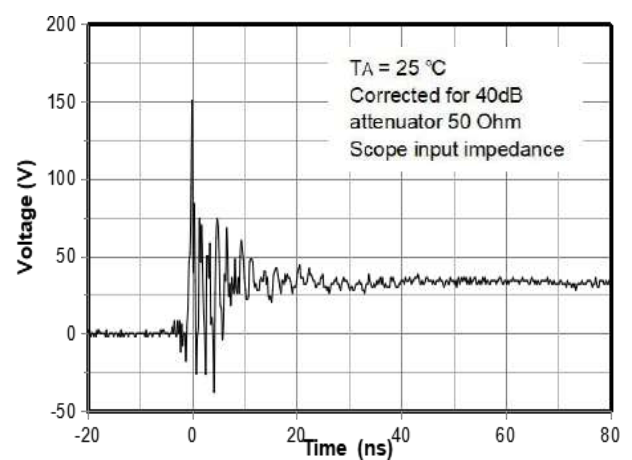
Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu s$)



TLP Measurement



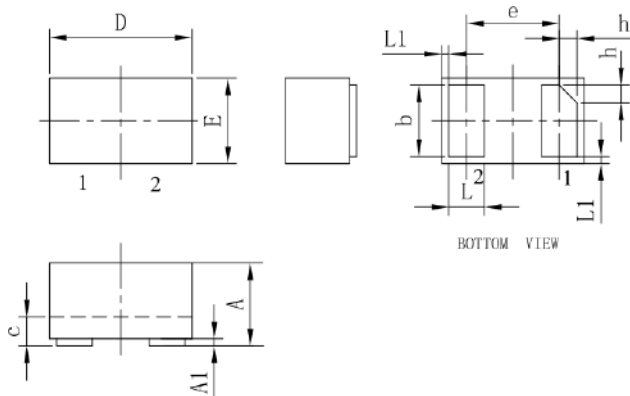
8 X 20μs Pulse Waveform



ESD Clamping Voltage

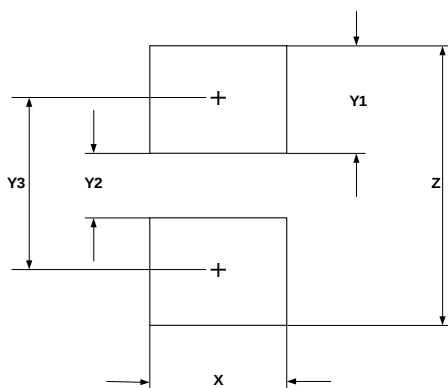
8 kV Contact per IEC61000-4-2

➤ Package Information (DFN1006)



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05REF			0.002REF		
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052

➤ Ordering Information

Part Number	Description	Quantity
PAE2421EU	DFN1006 / Reel	10000 pcs

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