

➤ General Description

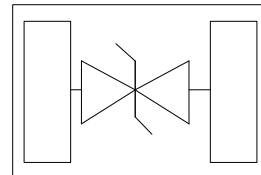
The PAE1521EU is designed with latest Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium..

This series has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

➤ Feature

- Peak Power Dissipation –120 W (8 x 20 us Waveform)
- Stand-off Voltage: 15 V
- Low capacitance for high-speed interfaces
- Replacement for MLV (0402)
- Protects I/O、 VCC Port
- Low Clamping Voltage
- Low Leakage
- Low Capacitance
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- ROHS compliant

➤ DFN-1006



➤ Application

- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals

➤ Protection solution to meet

- IEC61000-4-2 (ESD) ±25kV (air), ±25kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 4A (8/20µs)

➤ Maximum Ratings (TA=25°C Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	PPPP	120	Watts
ESD Rating per IEC61000-4-2:	Contact	±25	KV
	Air	±25	
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Operating Temperature Range	TJ	-55 ~ 150	°C
Storage Temperature Range	TSTG	-55 ~ 150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

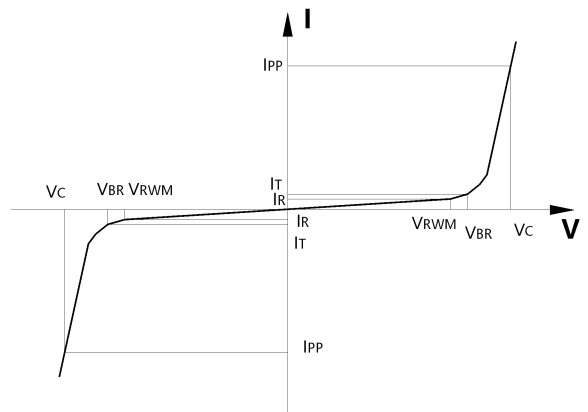
1. Non-repetitive current pulse, per Figure 1.

➤ Electrical Characteristics (TA=25°C Unless otherwise specified)

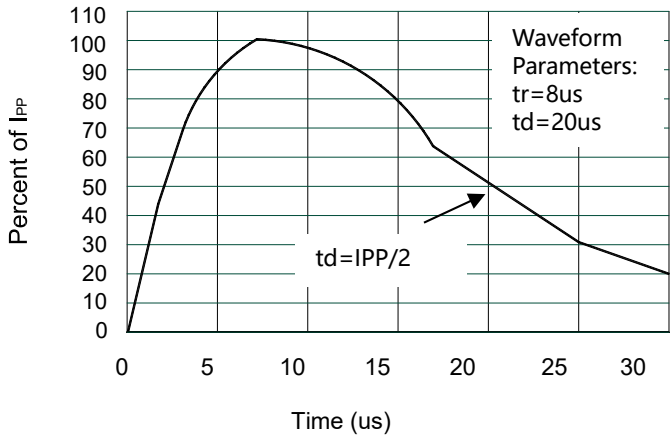
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage				15	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA,	15.5			V
I _R	Reverse Leakage Current	V _{RWM} = 15V,		0.01	0.5	μA
V _C	Clamping Voltage	I _{PP} = 1A, tp = 8/20μs,		20.5		V
		I _{PP} = 4A, tp = 8/20μs,		36.8	44.2	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz,		0.62	1.5	pF

Junction capacitance is measured in V_R=0V, F=1MHz

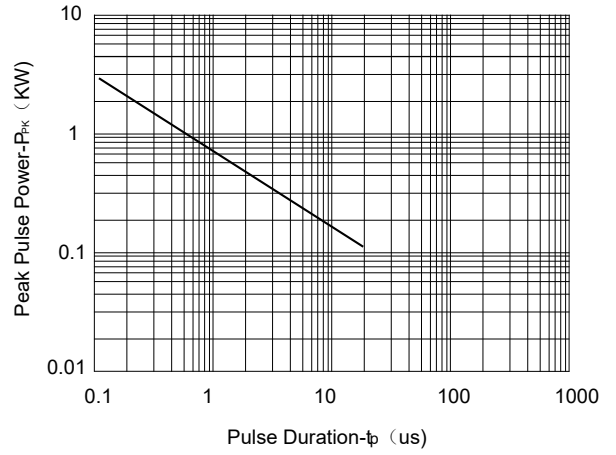
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



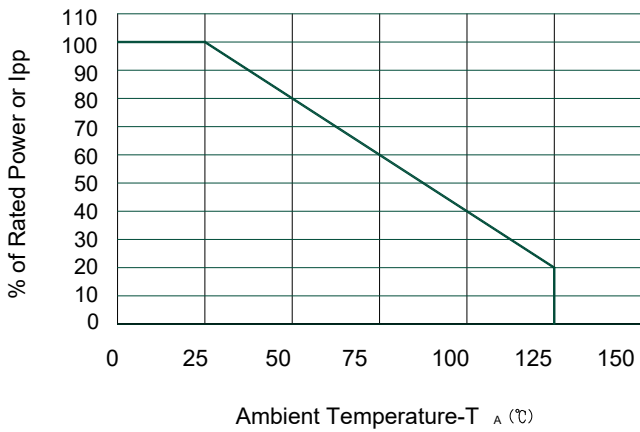
➤ Typical Characteristics



Pulse Waveform



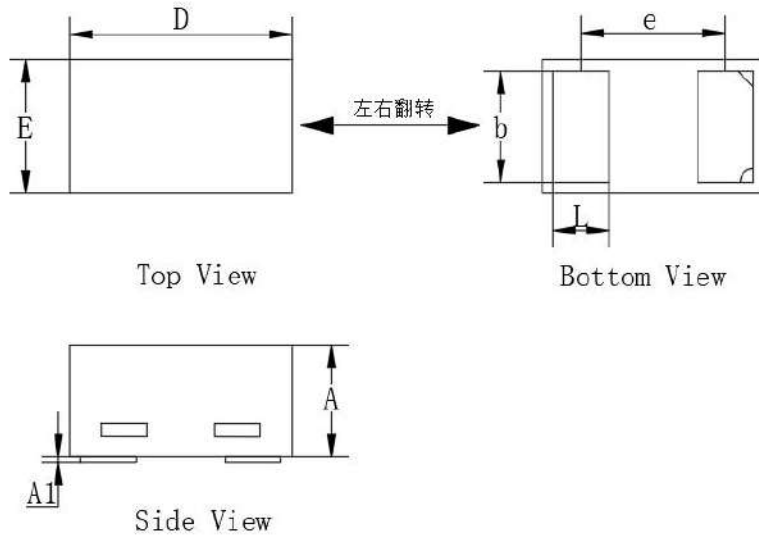
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

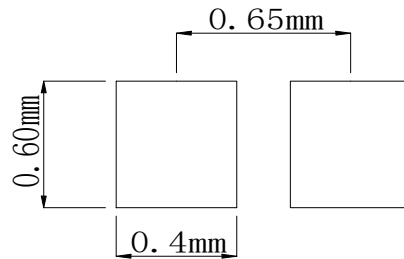
➤ Package Information (DFN1006)

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.37	0.55
A1	0.00	0.05
D	0.95	1.05
E	0.48	0.65
b	0.35	0.55
e	0.65TYP	
L	0.15	0.35

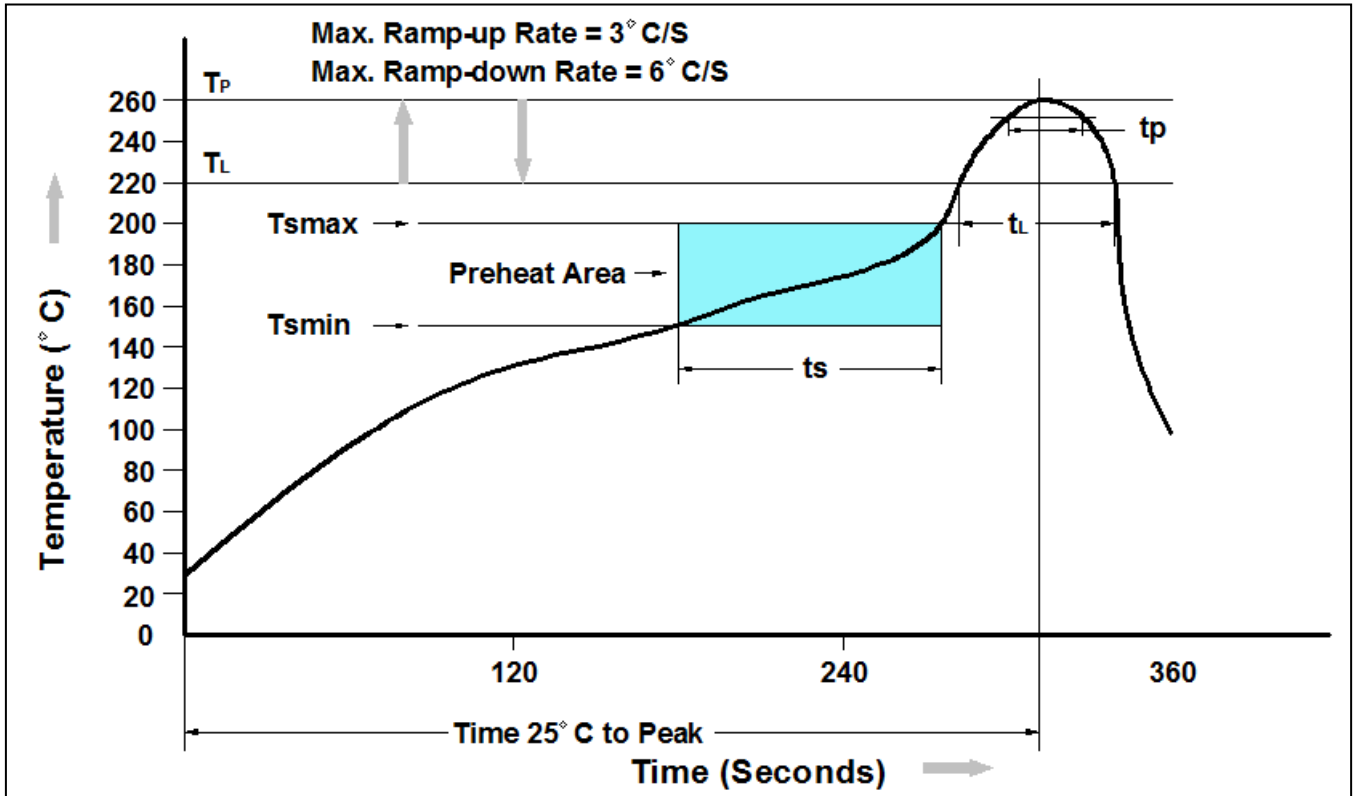
Recommended Pad outline



➤ Ordering Information

Part Number	Description	Quantity
PAE1521EU	DFN1006 Reel	10000 pcs

➤ Recommand IR Reflow Soldering Thermal Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T Amin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (T Amin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

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