

➤ General Description

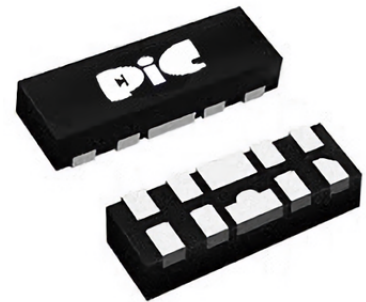
The PAE0524MU provides a typical line to line capacitance of 0.2pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

➤ Feature

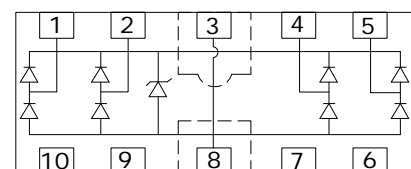
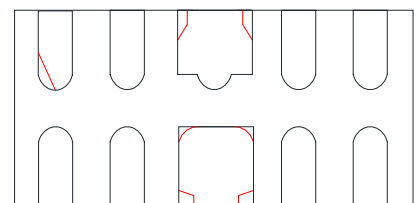
- Protects two or four I/O lines
- Low capacitance:0.2pf Typical between I/O channel
- Working voltages : 5V
- Low leakage current
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- **Solid-state silicon avalanche technology**
- ROHS compliant

➤ DFN2510-10L



➤ Application

- High Definition Multi-Media Interface (HDMI1.3/1.4/2.0)
- Digital Visual Interface (DVI)
- Display Port Interface
- Serial ATA
- PCI Express
- USB 1.1/2.0/3.0/3.1/OTG
- IEEE 1394 Firewire Ports
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box
- Projection TV



➤ Protection solution to meet

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

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	PPPP	55	Watts
ESD Rating per IEC61000-4-2:	Contact	20	KV
	Air	20	
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.

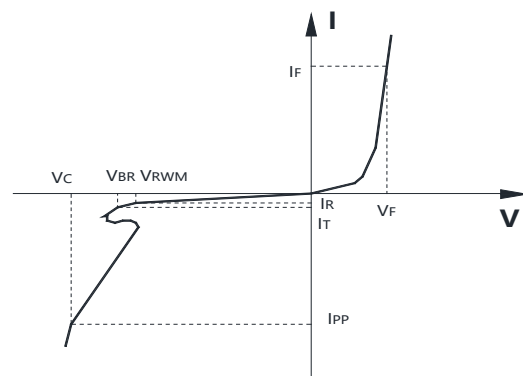
➤ Electrical Characteristics (TA=25°C Unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Any I/O to Ground			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 0.1mA, Any I/O to Ground	6.0			V
I _R	Reverse Leakage Current	V _{RWM} = 5V, Any I/O to Ground			1	µA
V _F	Diode Forward Voltage	I _F = 15mA		0.85	1.2	V
V _C	Clamping Voltage	I _{PP} = 1A ⁽¹⁾ , any I/O pin to Ground			6	V
		I _{PP} = 12A ⁽¹⁾ , any I/O pin to Ground			12	V
R _{dyn}	dynamic resistance	positive transient(TLP) negative transient(TLP)		0.26 0.28		Ω
C _J ⁽²⁾	Junction Capacitance	V _{IN} = 2.5V, f = 1MHz, between I/O pins		0.20		pF
		V _{IN} = 2.5V, f = 1MHz, any I/O pin to Ground		0.45	0.65	pF

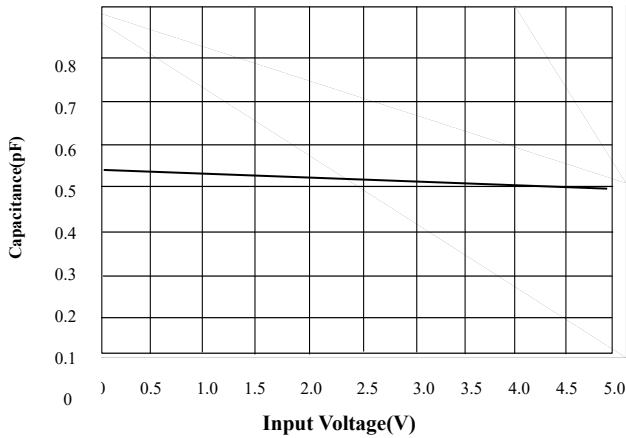
Notes:(1)Measurements performed using a 100ns Transmission Line Pulse(TLP) system.

(2)Junction capacitance is measured in VR=0V,F=1MHz

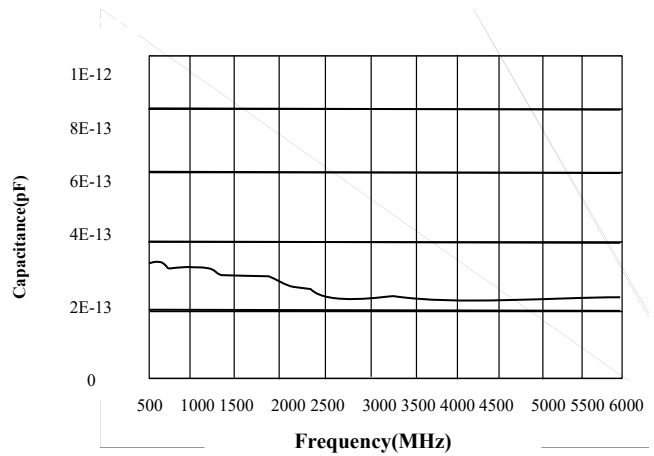
Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP} 100ns Transmission Line Pulse(TLP)
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance



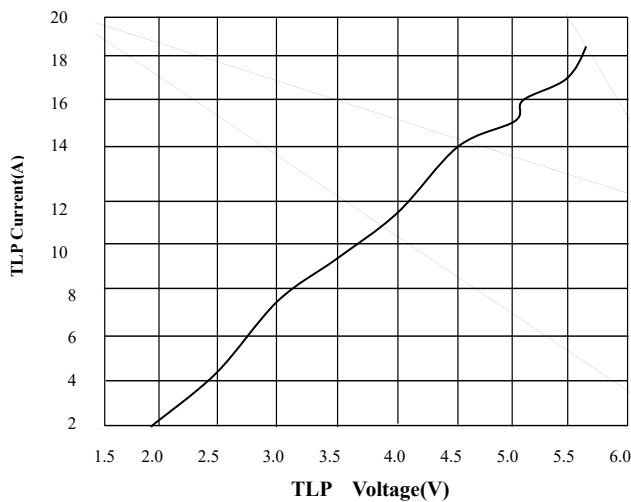
➤ Typical Characteristics



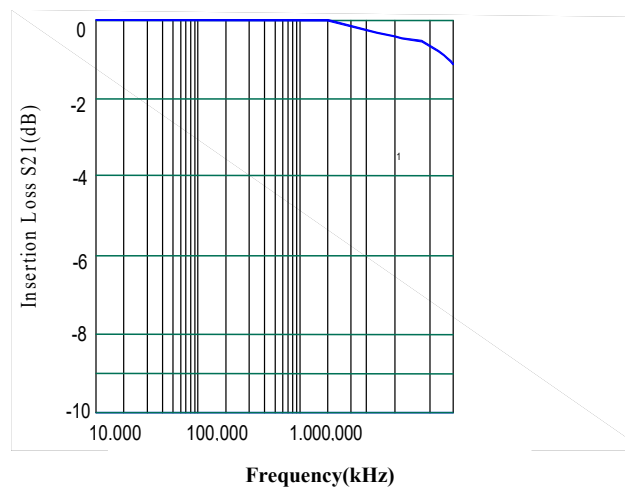
Typical Variation of CIN vs. VIN



Capacitance vs. Frequency (IO to GND)



Transmission Line Pulsing (TLP) Measurement



Insertion Loss vs. Frequency (IO to GND)

➤ Ordering Information

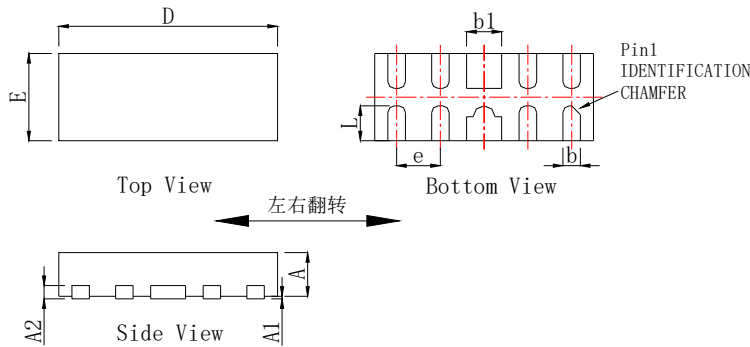
Part Number	Description	Quantity
PAE0524MU	DFN2510-10L Reel	3000 pcs

➤ Package Information (DFN2510-10L)

Mechanical Data

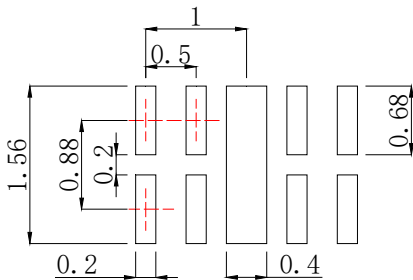
Case:DFN2510

Case Material: Molded Plastic. UL Flammability

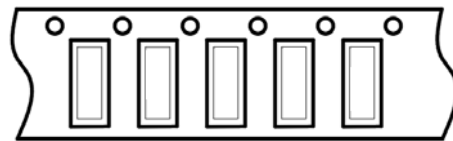


DIM	Millimeters	
	Min	Max
A	0.45	0.65
A1	0.05REF	
A2	0.15REF	
b	0.15	0.25
b1	0.30	0.50
D	2.424	2.576
E	0.924	1.076
e	0.50REF	
L	0.30	0.45

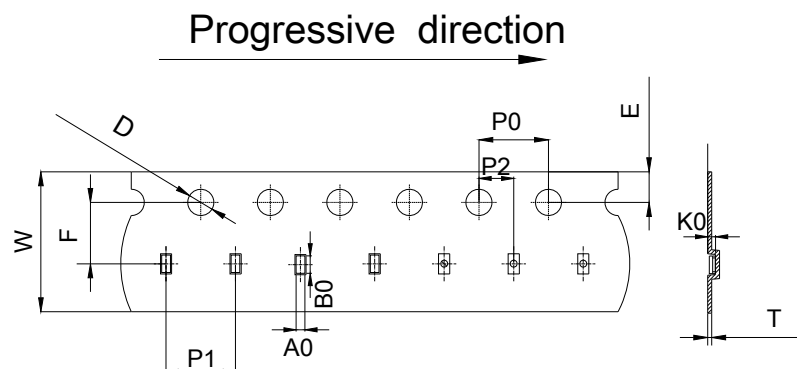
Recommended Pad outline



Device Orientation in Tape



DFN2510 Reel Dim



PACKAGE	W	E	F	P0	D	P2	P1	T	A0	B0	K0
DFN2510	8mm ±0.1	1.75mm ±0.1	3.5mm ±0.05	4mm ±0.1	1.5mm ±0.1	2mm ±0.05	4mm ±0.1	0.23mm ±0.05	1.2 mm ±0.05	2.7mm ±0.1	0.8mm ±0.05

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