PB4413-DFA

Low Capacitance ESD Protection

Voltage **3.3 V**

Features

- IEC61000-4-2(ESD) : ±18kV Air, ±16kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 6.5A(8/20uS)
- Low leakage current, maximum of 1uA at rated voltage
- Ultra low clamping voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

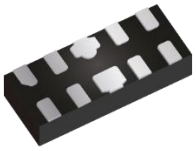
Mechanical Data

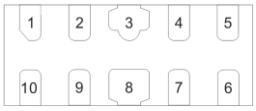
- Case : DFN2510A-10L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.003 grams

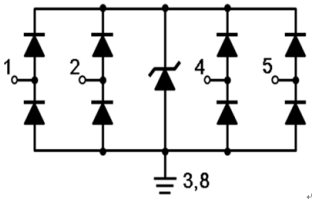
Applications

- USB 3.0, 3.1 and 3.2
- Notebook/Desktop Computers
- SATA/eSATA interface

DFN2510A-10L







Top view

Part Marking	Parameter
443AYWL	443A = Marking Code YWL = Y - Last digit of calendar year W - Weekly L - The latest two digits of wafer lot#

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNITS
ESD IEC61000-4-2(Air) ESD IEC61000-4-2(Contact)	V_{ESD}	±18 ±16	kV
Operating Junction Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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Electrical Characteristics (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage(Note 1)	V_{RWM}	I/O Pin to GND	-	-	3.3	V
Reverse Breakdown Voltage	V_{BR}	I_{BR} = 1mA, I/O Pin to GND	5	-	10	V
Forward Voltage	V_F	I_F=15mA, I/O Pin to GND	-	1	-	V
Reverse Leakage Current	I_R	V_R = 3.3V, I/O Pin to GND	-	0.5	1	uA
Clamping Voltage	V_{CL}	I_{PP}=6.5A, t_P=8/20μs, I/O pins to GND	-	6.5	7.5	V
Clamping Voltage TLP(Note 2)	V_{CL}	I_{TLP} = 16A, t_P = 100ns, I/O Pin to GND	-	9	-	V
Off State Junction Capacitance (Note 3)	C_J	1.65Vdc Bias, f = 1MHz, I/O Pins to GND	-	0.38	0.48	pF

NOTES :

1. A transient suppressor is selected according to the working peak reverse voltage(V_{RWM}), which should be equal to or greater than the DC or continuous peak operation voltage level.
2. Testing using Transmission Line Pulse (TLP) conditions: Z0 = 50Ω, t_P = 100 ns.
3. This parameter is guaranteed by design.

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TYPICAL CHARACTERISTIC CURVES

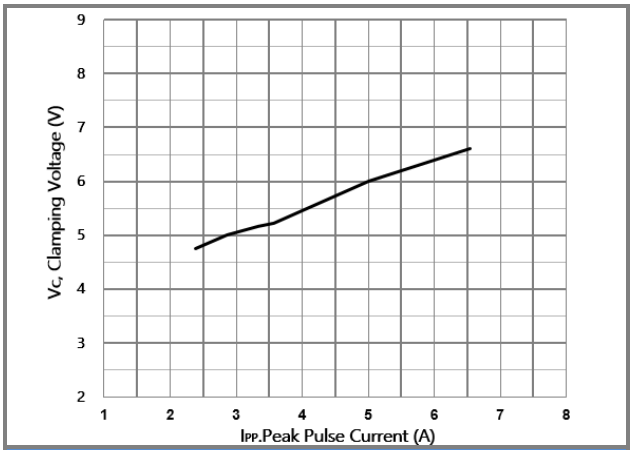

Fig.1 Typical Peak Clamping Voltage

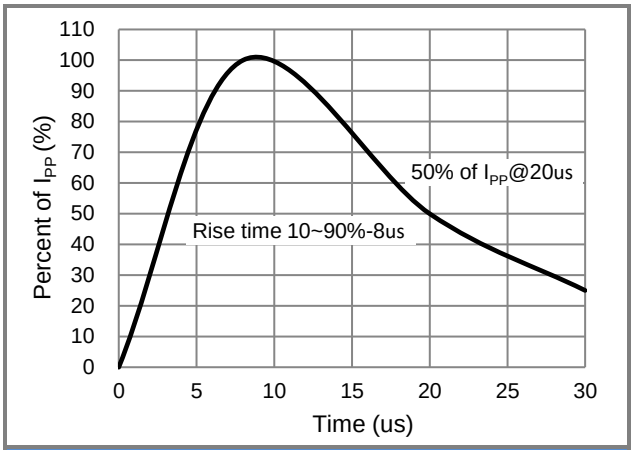

Fig.2 Pulse Waveform

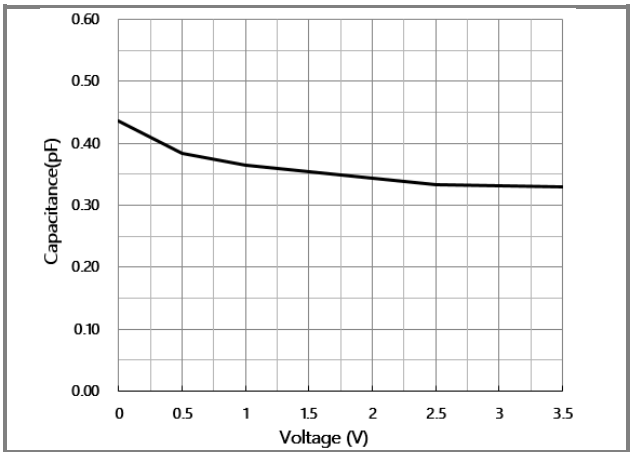

Fig.3 Typical Junction Capacitance

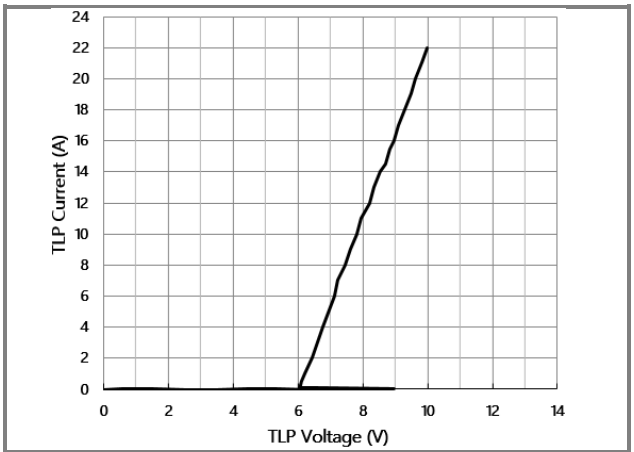

Fig.4 TLP Measurement

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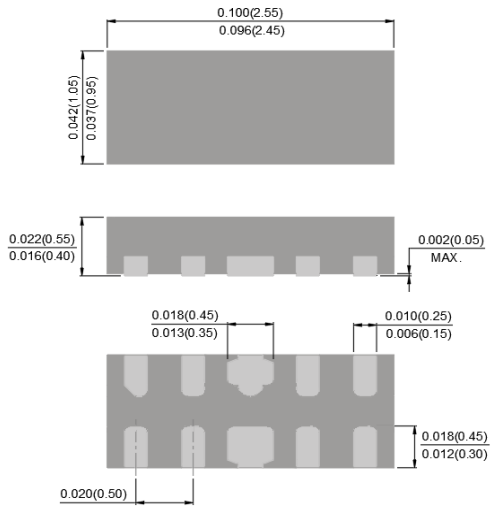
Product and Packing Information

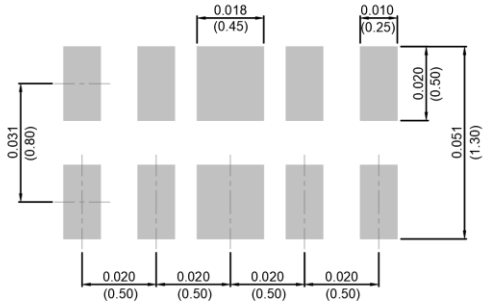
Part No.	Package Type	Packing Type	Marking
PB4413-DFA	DFN2510A-10L	3K pcs / 7" reel	443A

Packaging Information & Mounting Pad Layout

DFN2510A-10L Dimension — Unit: inch(mm)



DFN2510A-10L Pad Layout — Unit: inch(mm)



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