

PB4413-DFA

Low Capacitance ESD Protection

Voltage

3.3 V

Features

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

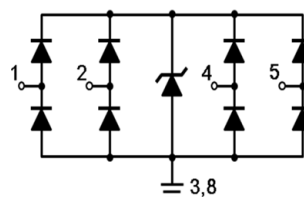
Mechanical Data

- 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



443AYWL

pin 1

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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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

PB4413-DFA

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.

PB4413-DFA

TYPICAL CHARACTERISTIC CURVES

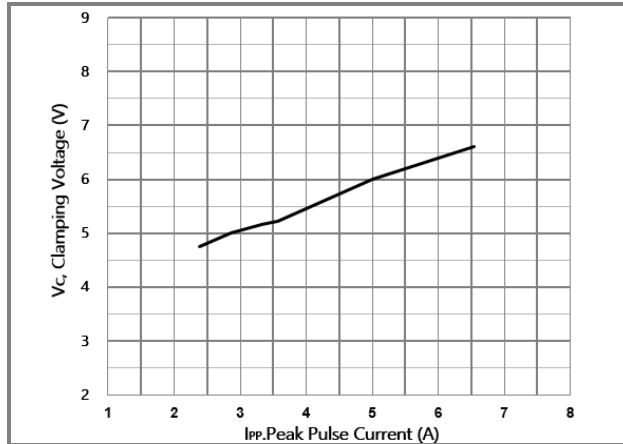


Fig.1 Typical Peak Clamping Voltage

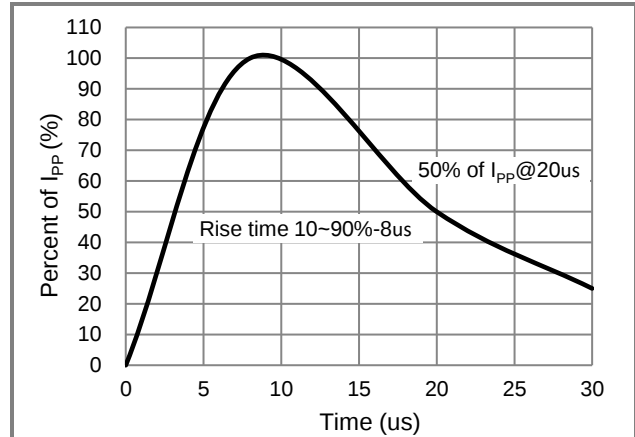


Fig.2 Pulse Waveform

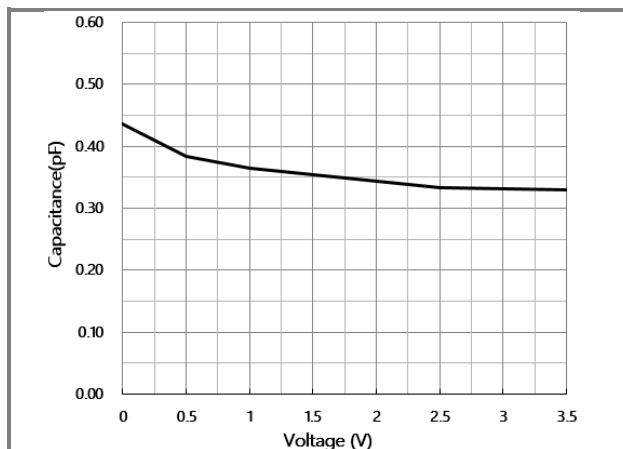


Fig.3 Typical Junction Capacitance

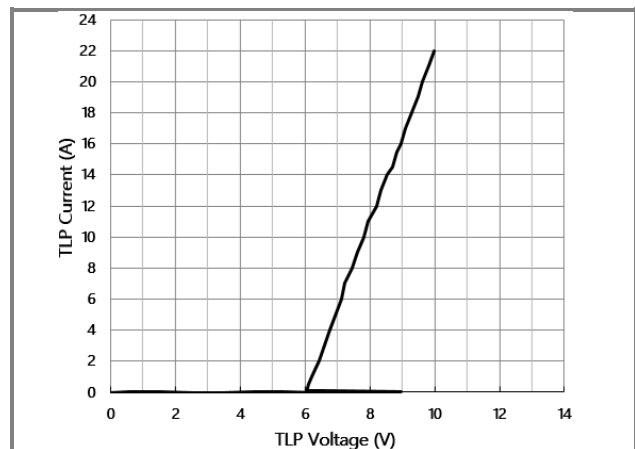


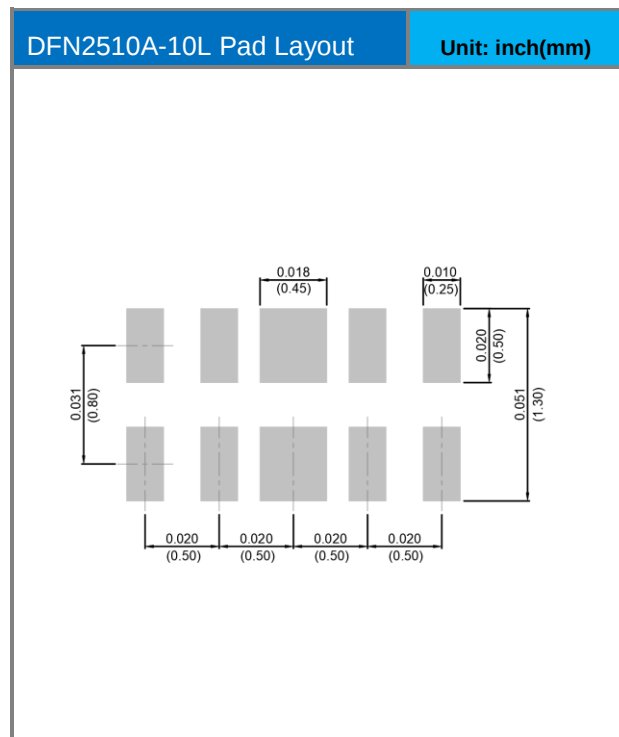
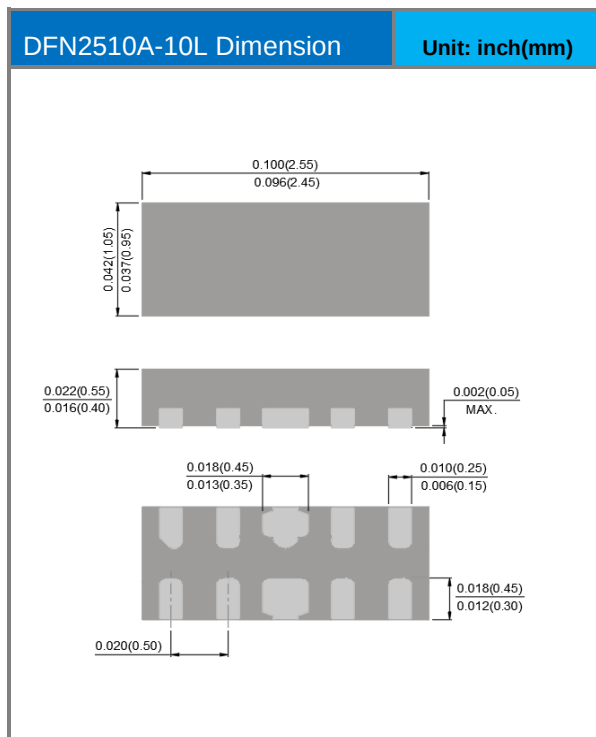
Fig.4 TLP Measurement

PB4413-DFA

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



PB4413-DFA

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