

PB4415-DFA

Low Capacitance ESD Protection

Voltage

5 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

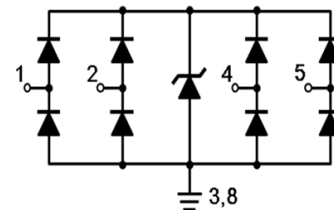
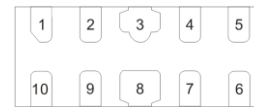
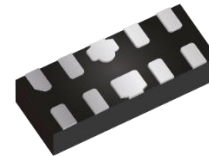
Mechanical Data

- 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



pin 1
Top view

Part Marking	Parameter
445AYWL	445A = 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)	V _{ESD}	±18	kV
ESD IEC61000-4-2(Contact)		±16	
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	-	-	5	V
Reverse Breakdown Voltage	V _{BR}	I _{BR} = 1mA, I/O Pin to GND	6	-	12	V
Forward Voltage	V _F	I _F =15mA, I/O Pin to GND	-	1	-	V
Reverse Leakage Current	I _R	V _R = 5V, 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	-	10	-	V
Off State Junction Capacitance ^(Note 3)	C _J	2.5Vdc Bias, f = 1MHz, I/O Pins to GND	-	0.36	0.46	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

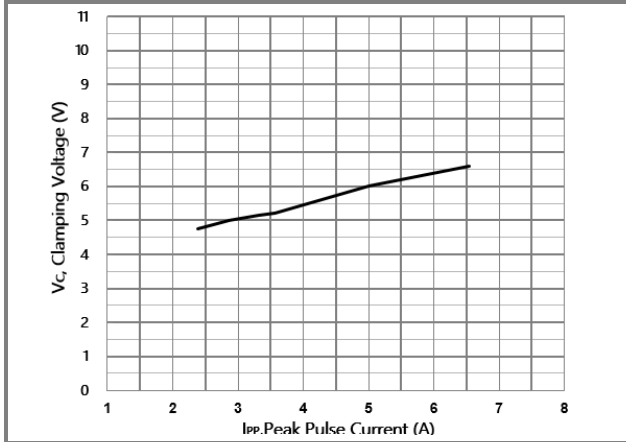


Fig.1 Typical Peak Clamping Voltage

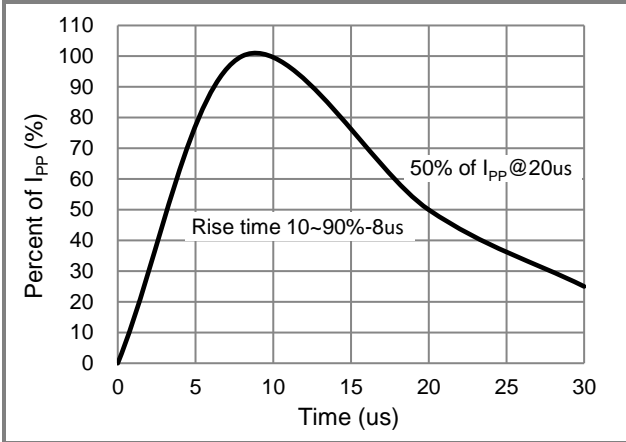


Fig.2 Pulse Waveform

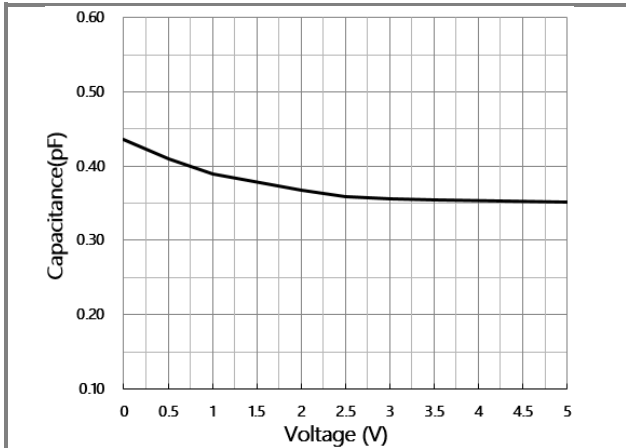


Fig.3 Typical Junction Capacitance

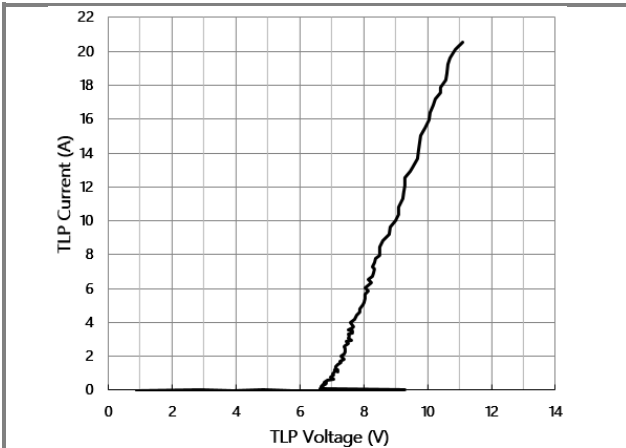


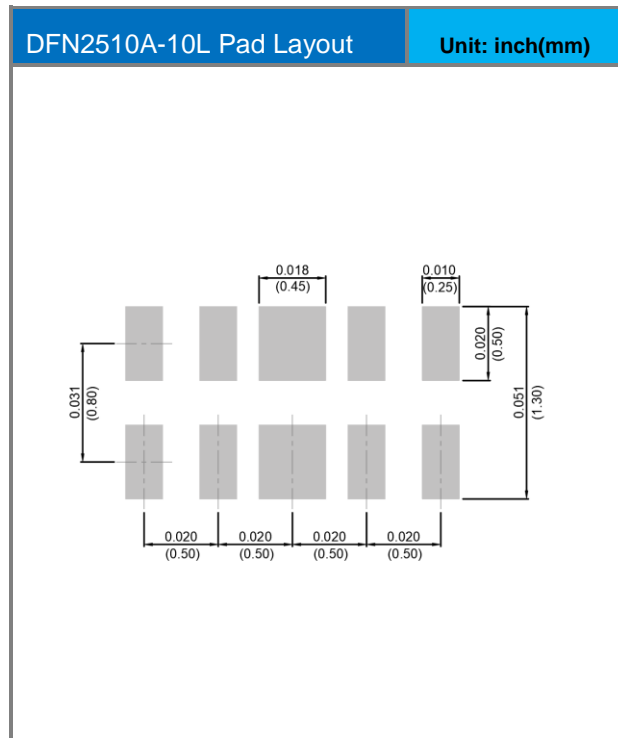
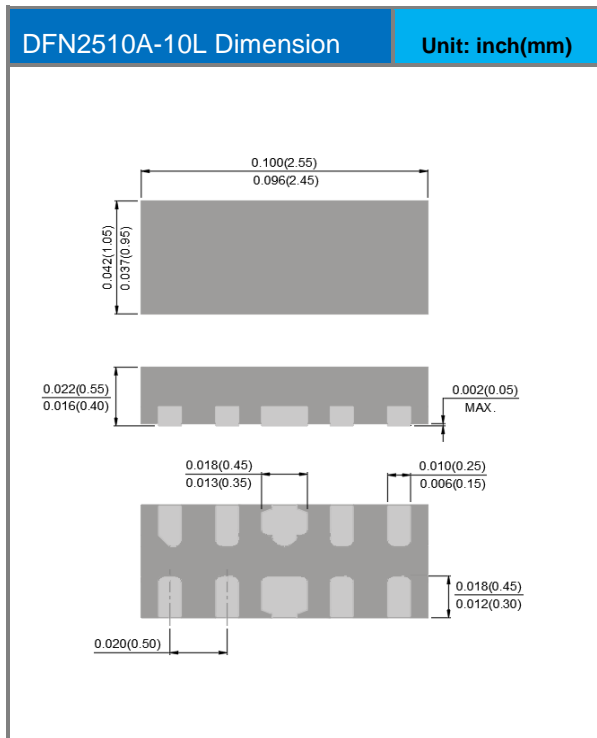
Fig.4 TLP Measurement

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PB4415-DFA	DFN2510A-10L	3K pcs / 7" reel	445A

Packaging Information & Mounting Pad Layout



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