

PE1605M4AQ

Low Capacitance ESD Protection

Voltage

5 V

Features

- IEC61000-4-2(ESD) : $\pm 20\text{kV}$ Air, $\pm 15\text{kV}$ Contact
- IEC61000-4-4(EFT) : $40\text{A}(5/50\text{ns})$
- IEC61000-4-5(Lightning) : $4\text{A}(8/20\mu\text{S})$
- Low leakage current, maximum of 50nA at rated voltage
- Low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std.. (Halogen Free)

Mechanical Data

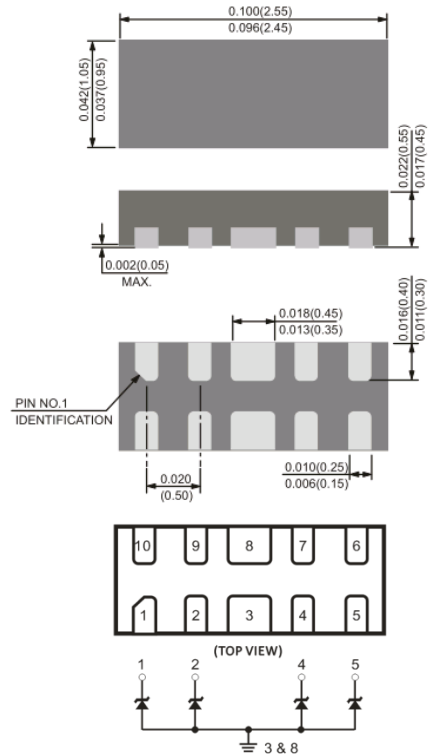
- Terminals: Solderable per MIL-STD-750, Method 2026

Applications

- USB Type-C Interface
- HDMI Interface 2.0 version
- V-By-One Interface
- LVDS Interface
- Display Port Interface

DFN2510-10L

Unit: inch(mm)



Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNITS
ESD IEC61000-4-2(Air)	V_{ESD}	± 20	kV
ESD IEC61000-4-2(Contact)		± 15	
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage ^(Note 1)	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	$I_{BR}=1mA$	5.5	-	-	V
Reverse Leakage Current	I_R	$V_R=5.0V$	-	-	50	nA
Clamping Voltage	V_{CL}	$I_{PP}=1A$, $t_P=8/20$ s, any I/O pins to GND	-	-	10	V
		$I_{PP}=4A$, $t_P=8/20$ s, any I/O pins to GND	-	-	15	V
Clamping Voltage TLP ^(Note 2)	V_{CL}	$I_{PP}=8A$, $t_P=100ns$, any I/O pins to GND	-	16	-	V
		$I_{PP}=16A$, $t_P=100ns$, any I/O pins to GND	-	23.5	-	V
Dynamic Resistance	R_{DYN}	$t_P=100ns$	-	0.94	-	Ω
Off State Junction Capacitance	C_J	2.5Vdc Bias $f=1MHz$, any I/O pins to GND	-	0.3	0.35	pF
		2.5Vdc Bias $f=1MHz$, Between any I/O pins	-	0.2	-	pF

Note :

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: $Z_0 = 50\Omega$, $t_P = 100$ ns.

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TYPICAL CHARACTERISTIC CURVES

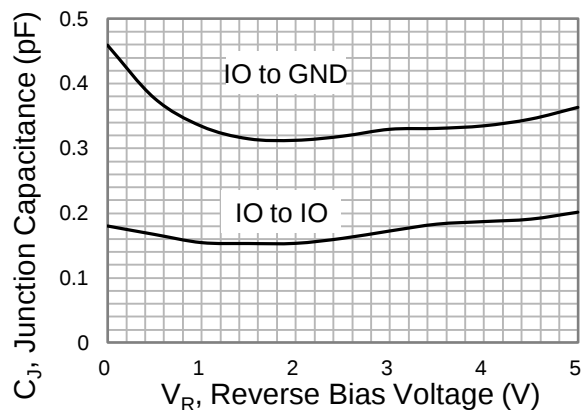


Fig.1 Typical Junction Capacitance

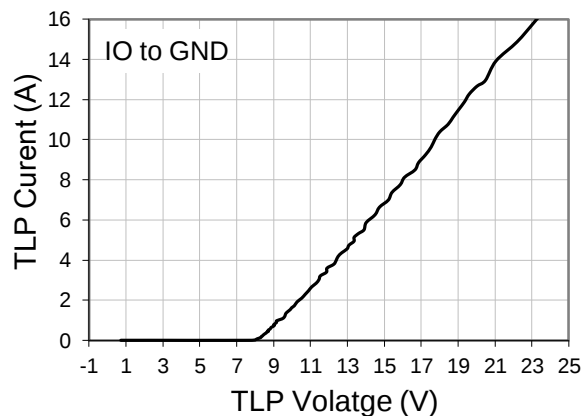


Fig.2 Transmission Line Pulsing (TLP) Measurement

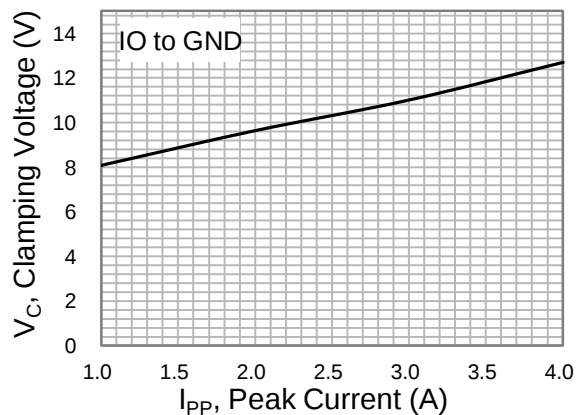


Fig.3 Typical Peak Clamping Voltage(8/20 μ s)

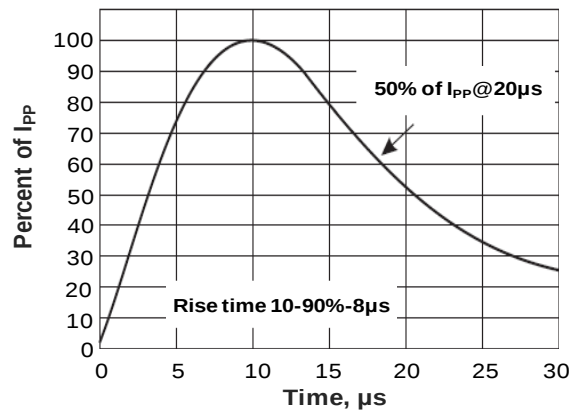


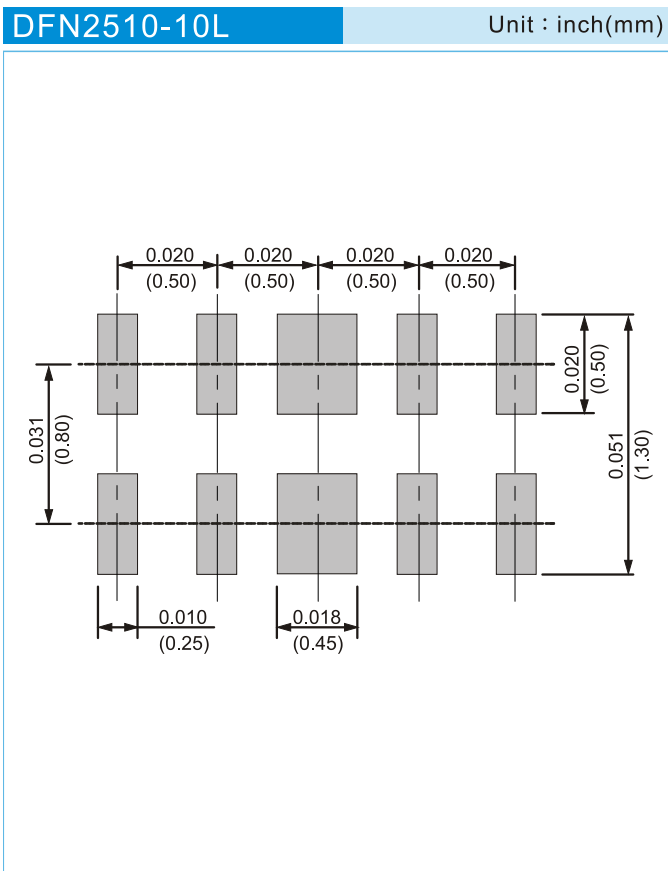
Fig.4 8/20 μ s Pulse Waveform

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Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1605M4AQ_R1_00001	DFN2510-10L	5K / 7" Reel	1605	Halogen Free
PE1605M4AQ_R2_00001	DFN2510-10L	12K / 13" Reel	1605	Halogen Free

MOUNTING PAD LAYOUT



Notes : This pad layout is for reference purposes only.



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