



## **Ultra Low Capacitance ESD Protection**

Voltage

5 V

#### **Features**

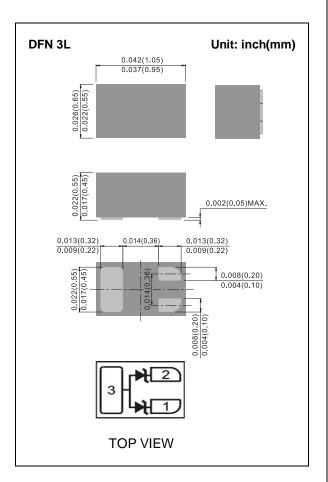
- IEC61000-4-2(ESD) : ±20kV Air, ±15kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 4A(8/20μS)
- Low leakage current, maximum of 50nA at rated voltage
- Ultra low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)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

#### **Mechanical Data**

• Case: Molded plastic, DFN 3L

### **Applications**

- USB 3.0 Data Line Protection
- Mobile Phones and accessories
- Hand held portable
- Digital Cameras
- Computer Interfaces Protection
- Serial and Parallel Ports Protection
- Control Signal Lines Protection



## **Maximum Ratings**

PARAMETER	SYMBOL	VALUE	UNITS	
ESD IEC61000-4-2(Air)	V	±20	kV	
ESD IEC61000-4-2(Contact)	V <sub>ESD</sub>	±15		
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	O°	
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C	





### **Electrical Characteristics**

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage (Note 1)	$V_{RWM}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	I <sub>BR</sub> =1mA	5.5	-	-	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =5.0V	-	-	50	nA
Clamping Voltage	V <sub>CL</sub>	I <sub>PP</sub> =1A, t <sub>P</sub> =8/20μs, any I/O pins to GND	-	-	10	V
		I <sub>PP</sub> =4A, t <sub>P</sub> =8/20μs, any I/O pins to GND	-	-	15	V
Clamping Voltage TLP (Note 2)	$V_{CL}$	I <sub>PP</sub> =8A, t <sub>P</sub> =100ns, any I/O pins to GND	-	16	-	V
		I <sub>PP</sub> =16A, t <sub>P</sub> =100ns, any I/O pins to GND	-	23.5	-	V
Dynamic Resistance	$R_{DYN}$	t <sub>P</sub> =100ns	-	0.94	-	Ω
Off State Junction Capacitance	CJ	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

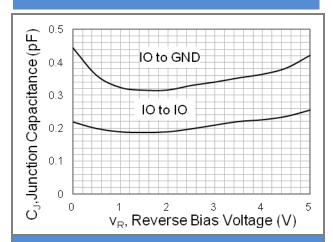
#### Note:

- 1. A transient suppressor is selected according to the working peak reverse voltage(V<sub>RWM</sub>), which should be equal to or greater than the DC or continuous peak operation voltage level.
- 2. Testing using Transmission Line Pulse (TLP) conditions:  $Z0 = 50\Omega$ ,  $t_P = 100$  ns.





#### **TYPICAL CHARACTERISTIC CURVES**



**Fig.1 Typical Junction Capacitance** 

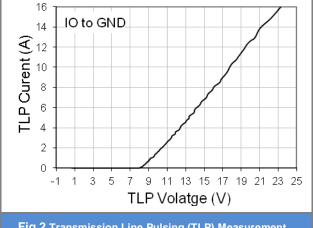


Fig.2 Transmission Line Pulsing (TLP) Measurement

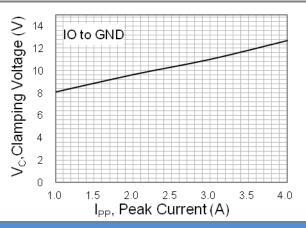
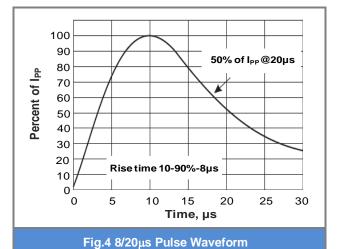


Fig.3 Typical Peak Clamping Voltage(8/20µs)



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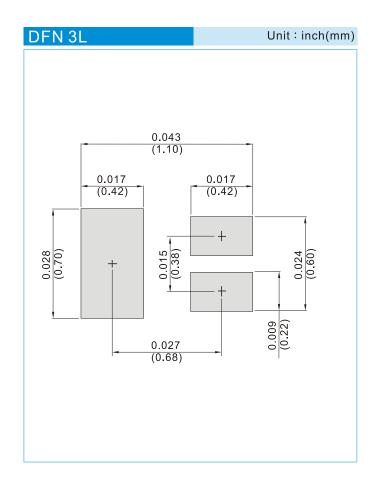




### PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1605M2Q_R1_00001	DFN 3L	8K pcs / 7" reel	U3	Halogen free

## **MOUNTING PAD LAYOUT**







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