



# PE1403M2Q

## Ultra Low Capacitance ESD Protection

**Voltage**

**3.3 V**

### Features

- IEC61000-4-2(ESD) :  $\pm 18\text{kV}$  Air,  $\pm 15\text{kV}$  Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 3A(8/20 $\mu\text{s}$ )
- Low leakage current, maximum of 50nA at rated voltage
- Ultra low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

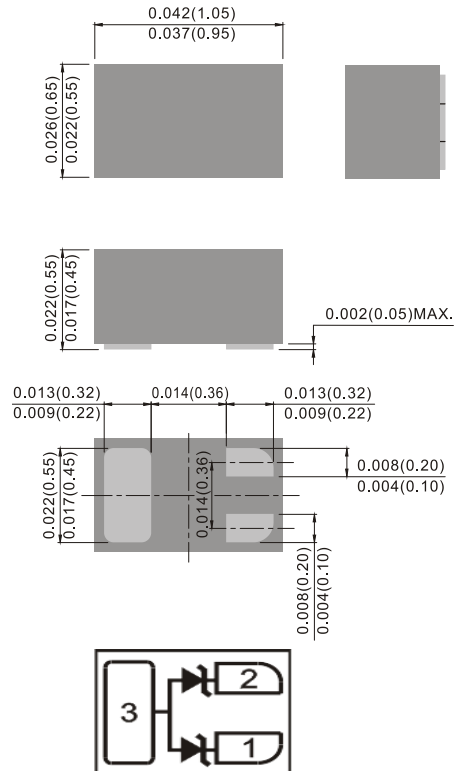
- Case: Molded plastic, DFN 3L
- Approx. Weight: 0.00004 ounces, 0.0011 grams

### 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

DFN 3L

Unit: inch(mm)



TOP VIEW

### Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNITS
ESD IEC61000-4-2(Air)	$V_{ESD}$	$\pm 18$	kV
ESD IEC61000-4-2(Contact)		$\pm 15$	
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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 1)</sup>	$V_{RWM}$	-	-	-	3.3	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1mA$	4	-	-	V
Reverse Leakage Current	$I_R$	$V_R=3.3V$	-	-	50	nA
Clamping Voltage	$V_{CL}$	$I_{PP}=1A, t_p=8/20\mu s$	-	-	9	V
		$I_{PP}=3A, t_p=8/20\mu s$	-	-	13	V
Clamping Voltage TLP <sup>(Note 2)</sup>	$V_{CL}$	$I_{PP}=8A, t_p=100ns$	-	15	-	V
		$I_{PP}=16A, t_p=100ns$	-	22	-	V
Dynamic Resistance	$R_{DYN}$	$t_p=100ns$	-	0.88	-	$\Omega$
Off State Junction Capacitance	$C_J$	0Vdc Bias f=1MHz, any I/O pins to GND	-	-	0.4	pF
		0Vdc 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

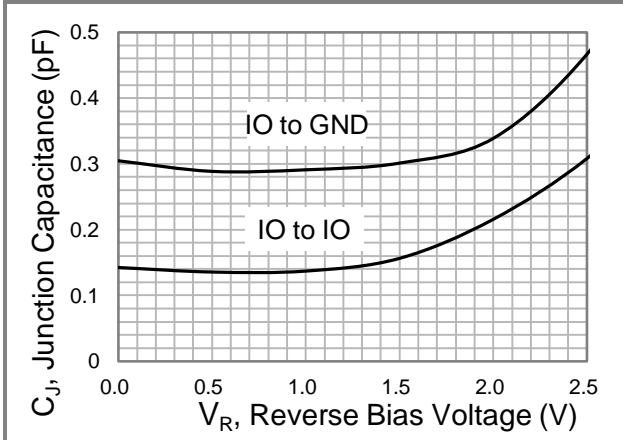


Fig.1 Typical Junction Capacitance

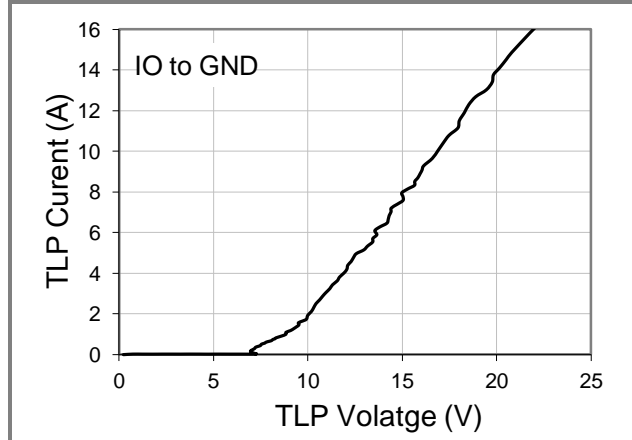


Fig.2 Transmission Line Pulsing (TLP) Measurement

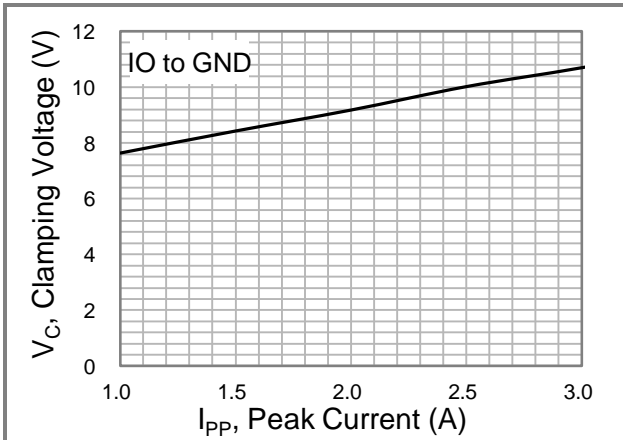


Fig.3 Typical Peak Clamping Voltage(8/20 $\mu$ s)

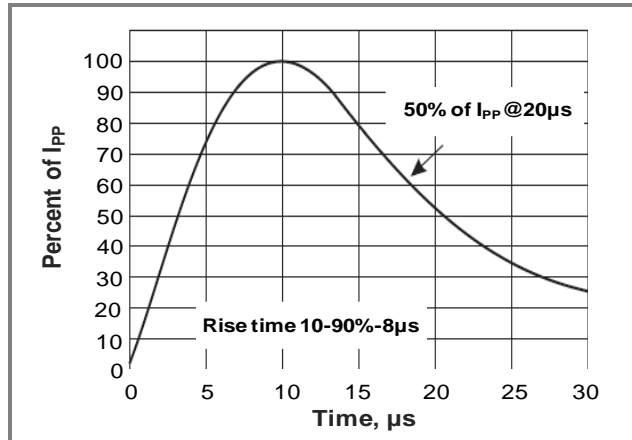


Fig.4 8/20 $\mu$ s Pulse Waveform

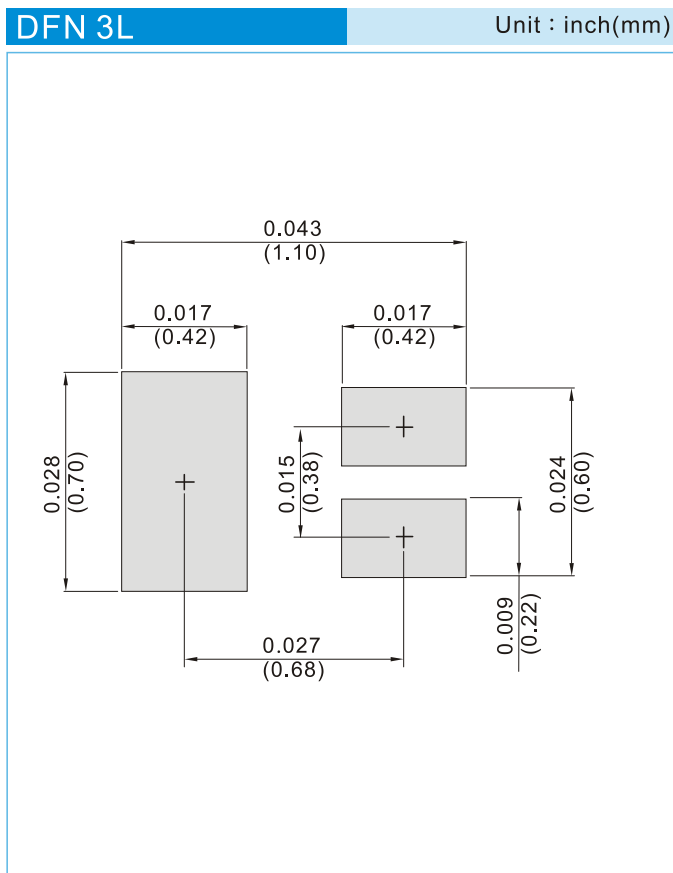


# PE1403M2Q

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1403M2Q_R1_00001	DFN 3L	8K pcs / 7" reel	RH	Halogen free

## Mounting Pad Layout





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