



# PE1605S1Q

## ULTRA LOW CAPACITANCE ESD PROTECTION

**Voltage**

**5 V**

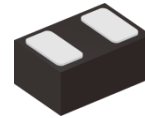
### Features

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

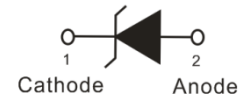
### Mechanical Data

- Case: Molded plastic, DFN0603-2L
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00001 ounces, 0.0004 grams

DFN0603-2L



**LAX**



## Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air)	$V_{\text{ESD}}$	$\pm 20$	kV
ESD IEC61000-4-2(Contact)		$\pm 15$	
Typical Thermal Resistance	$R_{\theta\text{JA}}^{(1)}$	500	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-55~150	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	-55~150	$^\circ\text{C}$



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage	$V_{RWM}^{(2)}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR} = 1\text{ mA}$	5.5	-	-	V
Reverse Leakage Current	$I_R$	$V_R = 5\text{ V}$	-	-	50	nA
Clamping Voltage	$V_{CL}$	$I_{PP} = 1\text{ A}, t_p = 8/20\text{ us}$	-	-	10	V
		$I_{PP} = 3\text{ A}, t_p = 8/20\text{ us}$	-	-	15	
Clamping Voltage TLP	$V_{CL}^{(3)}$	$I_{PP} = 8\text{ A}, t_p = 100\text{ ns},$	-	16	-	V
		$I_{PP} = 16\text{ A}, t_p = 100\text{ ns},$	-	23.5	-	
Dynamic Resistance	$R_{DYN}$	$t_p = 100\text{ ns}$	-	0.94	-	$\Omega$
Off State Junction Capacitance	$C_J$	2.5Vdc Bias $f = 1\text{ MHz}$	-	0.3	-	pF

**NOTES:**

1. Mounted on a FR4 PCB, Single-sided copper, mini pad.
2. 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.
3. Testing using Transmission Line Pulse (TLP) conditions:  $Z_0 = 50\ \Omega$  ,  $t_p = 100\text{ ns}$ .



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## TYPICAL CHARACTERISTIC CURVES

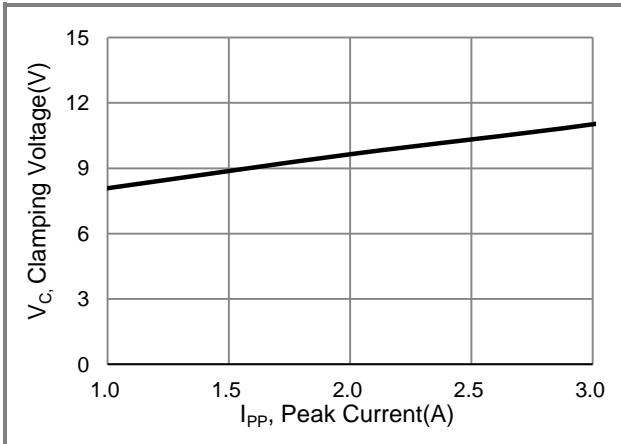


Fig.1 Typical Peak Clamping Voltage

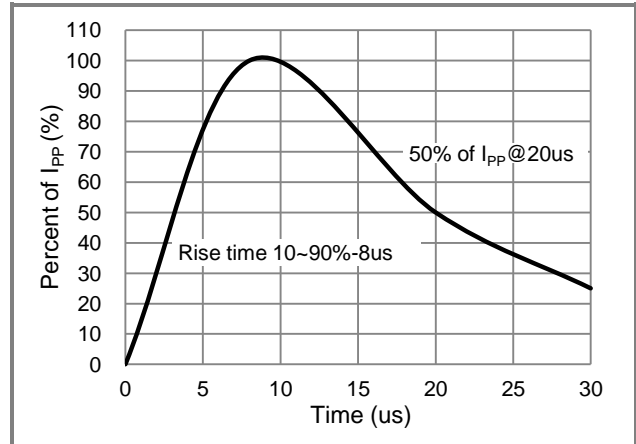


Fig.2 Pulse Waveform

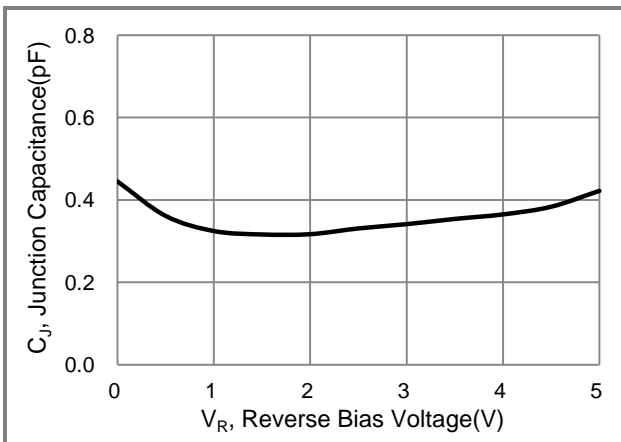


Fig.3 Typical Junction Capacitance

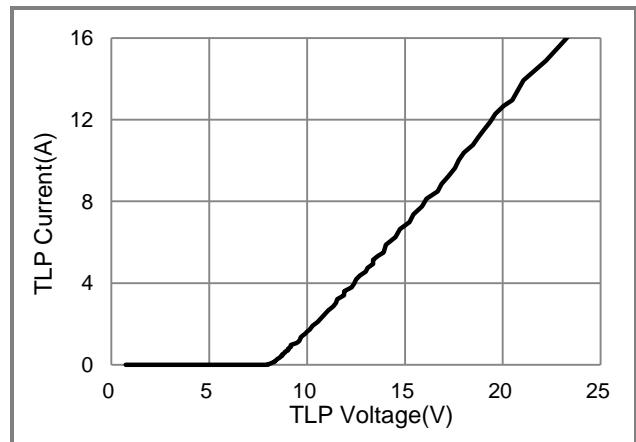


Fig.4 TLP Measurement

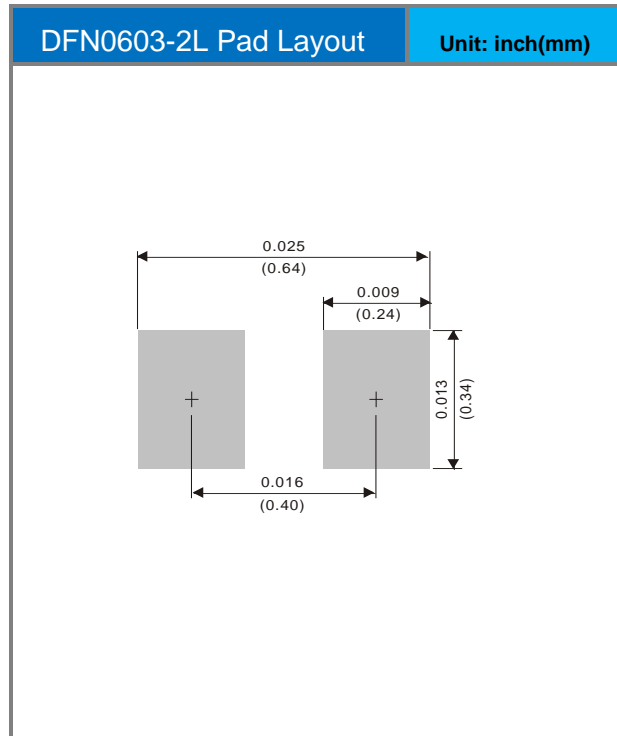
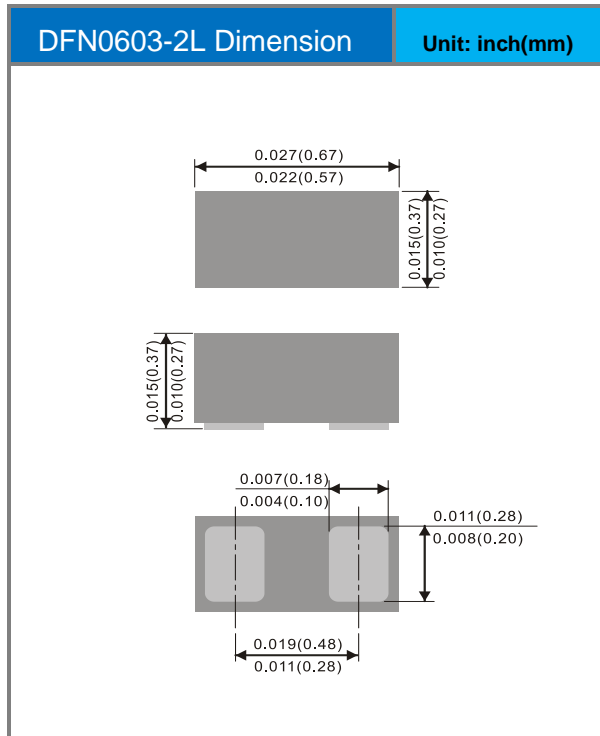


# PE1605S1Q

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1605S1Q_R1_00001	DFN0603-2L	10K / 7" Reel	LA	Halogen Free

## Packaging Information & Mounting Pad Layout





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