



# PEC1605M1Q

## Ultra Low Capacitance ESD Protection

Voltage

5 V

### Features

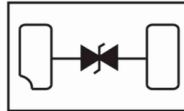
- IEC61000-4-2(ESD) :  $\pm 20$ kV Air,  $\pm 15$ kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 2A(8/20 $\mu$ S)
- Low leakage current, maximum of 75nA at rated voltage
- Ultra low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### Mechanical Data

- Case: Molded plastic, DFN 2L
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00004 ounces, 0.0011 grams

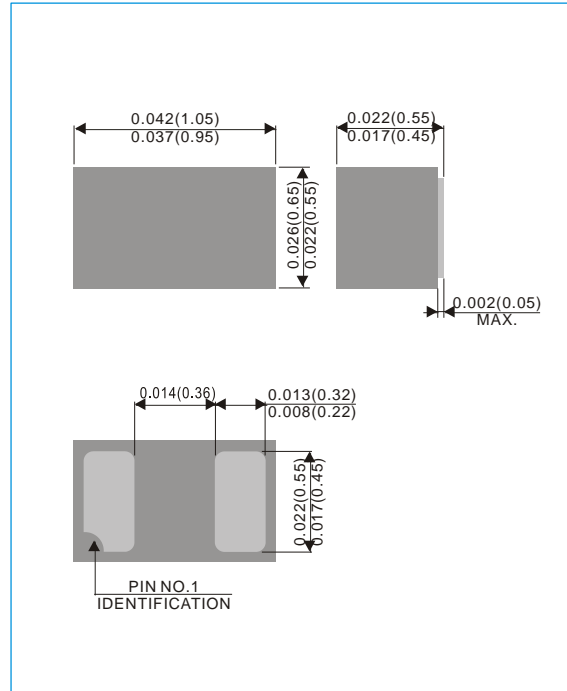
### Applications

- 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 2L

Unit : inch(mm)



### Maximum Ratings

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



## PEC1605M1Q

### Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 1)</sup>	$V_{RWM}$	-	-	-	5.5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{BR}=1mA$	6.8	7.8	11.2	V
Reverse Leakage Current	$I_R$	$V_R=5.0V$	-	-	75	nA
Clamping Voltage	$V_{CL}$	$I_{PP}=1A, t_p=8/20\mu s$	-	-	12	V
		$I_{PP}=2A, t_p=8/20\mu s$	-	11	14	V
Clamping Voltage TLP <sup>(Note 2)</sup>	$V_{CL}$	$I_{PP}=8A, t_p=100ns$	-	14	-	V
		$I_{PP}=16A, t_p=100ns$	-	16	-	V
Dynamic Resistance	$R_{DYN}$	$t_p=100ns$	-	0.25	-	$\Omega$
Off State Junction Capacitance	$C_J$	0Vdc Bias f=1MHz	-	-	0.6	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

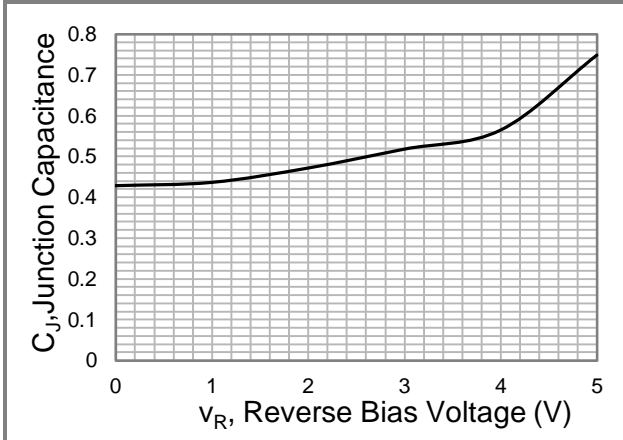


Fig.1 Typical Junction Capacitance

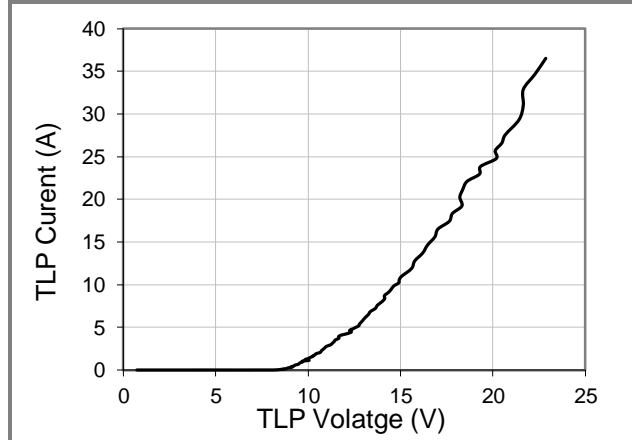


Fig.2 Transmission Line Pulsing (TLP) Measurement

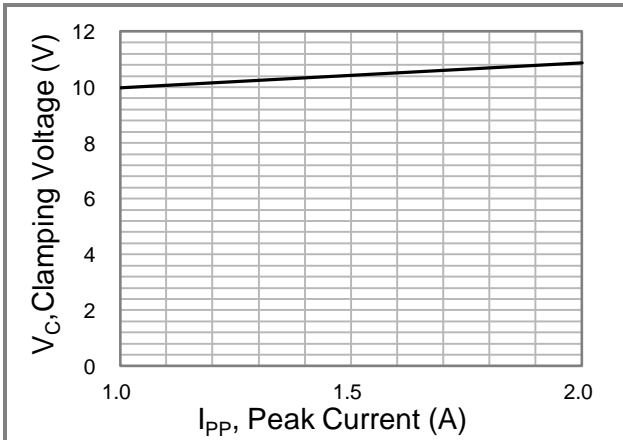


Fig.3 Typical Peak Clamping Voltage(8/20 $\mu$  s)

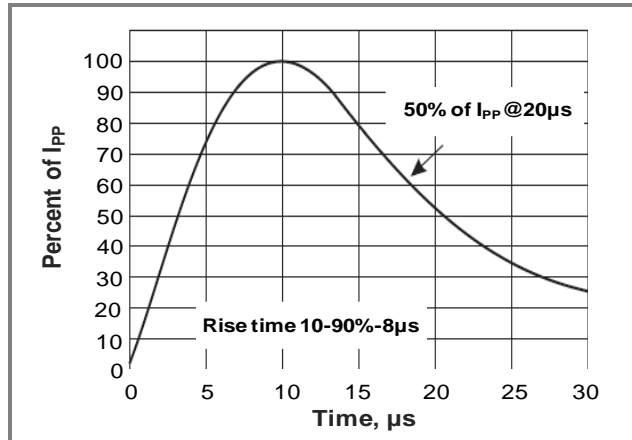


Fig.4 8/20 $\mu$  s Pulse Waveform

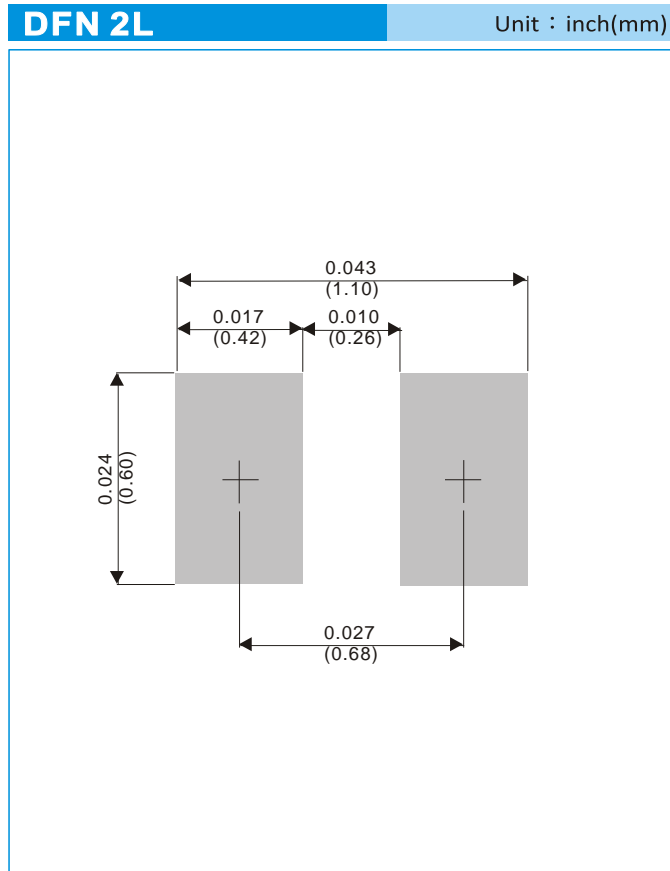


# PEC1605M1Q

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PEC1605M1Q_R1_00001	DFN 2L	8K pcs / 7" reel	BF	Halogen free

## MOUNTING PAD LAYOUT





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