



# PEC1605M1Q

## Ultra Low Capacitance ESD Protection

Voltage

5 V

### Features

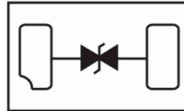
- IEC61000-4-2(ESD) :  $\pm 20$ kV Air,  $\pm 15$ kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 2A(8/20 $\mu$ S)
- Low leakage current, maximum of 75nA at rated voltage
- Ultra low capacitance
- Low clamping voltage
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU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

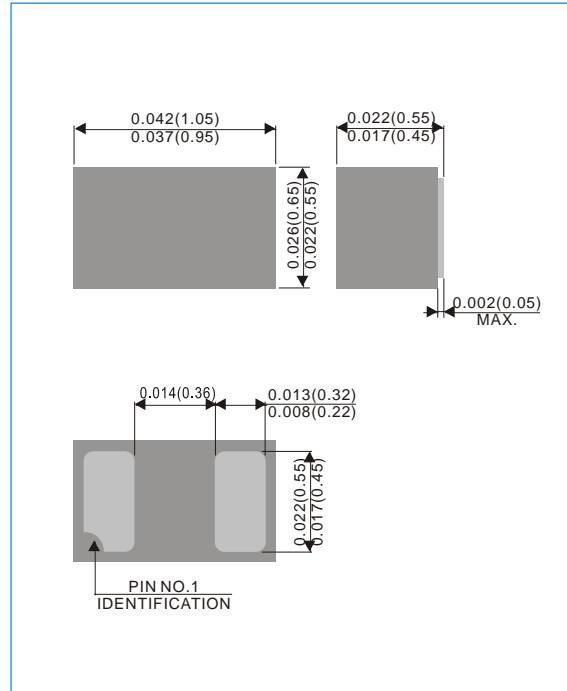
### Applications

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



# PEC1605M1Q

## TYPICAL CHARACTERISTIC CURVES

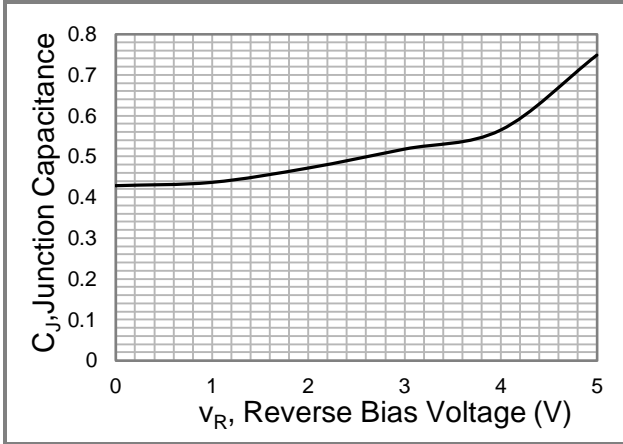


Fig.1 Typical Junction Capacitance

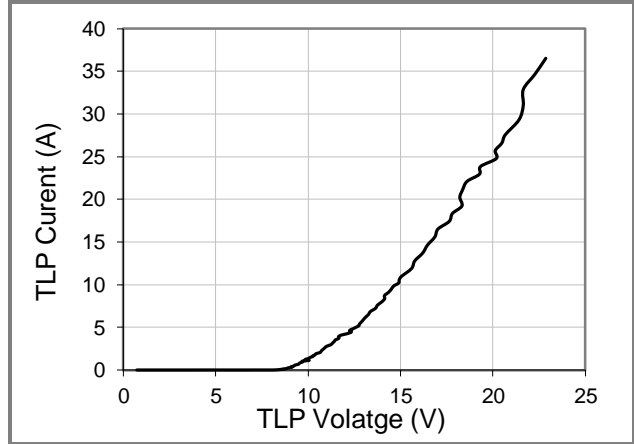


Fig.2 Transmission Line Pulsing (TLP) Measurement

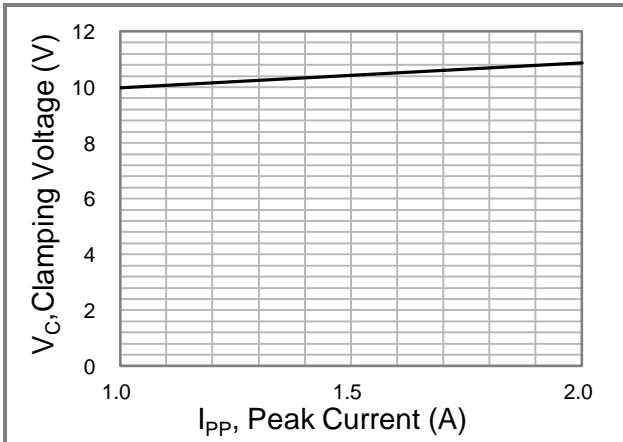


Fig.3 Typical Peak Clamping Voltage(8/20 $\mu$  s)

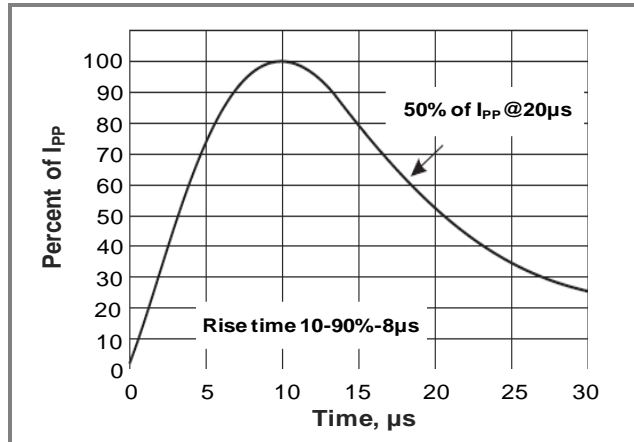


Fig.4 8/20 $\mu$  s Pulse Waveform

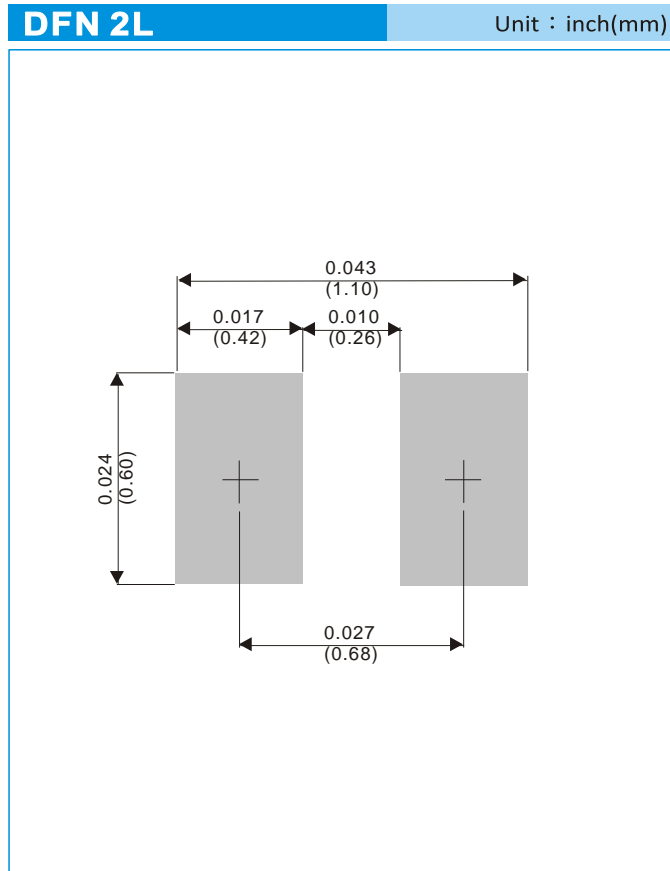


# PEC1605M1Q

## 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





## PEC1605M1Q

### Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Panjit International Inc..
- Panjit International Inc. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Panjit International Inc. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Panjit International Inc. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Panjit International Inc. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Panjit International Inc. for any damages resulting from such improper use or sale.
- Since Panjit uses lot number as the tracking base, please provide the lot number for tracking when complaining.