



## PEC3202M1Q ~ PEC3205M1Q Series

### ESD Protection

**Voltage**

**2.5~5 V**

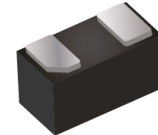
### Features

- IEC61000-4-2(ESD) :  $\pm 15$  kV Air,  $\pm 8$  kV Contact  
Compliance with the capability up to  $\pm 30$  kV
- IEC61000-4-5(Lightning) : 5~10A(8/20uS)
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : DFN1006-2L Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0006 grams

DFN1006-2L



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air)	V <sub>ESD</sub>	$\pm 30$	kV
ESD IEC61000-4-2(Contact)		$\pm 30$	
Typical Thermal Resistance <sup>(Note 1)</sup>	R <sub>θJA</sub>	430	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55~150	°C
Storage Temperature Range	T <sub>STG</sub>	-55~150	°C



## PEC3202M1Q ~ PEC3205M1Q Series

### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

PEC3202M1Q						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 2)</sup>	V <sub>RWM</sub>	-	-	-	2.5	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>BR</sub> = 50 mA	2.6	-	4	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 2.5 V	-	-	0.5	μA
Clamping Voltage	V <sub>CL</sub>	I <sub>PP</sub> = 1 A, t <sub>P</sub> = 8/20 μs	-	-	4.5	V
		I <sub>PP</sub> = 10 A, t <sub>P</sub> = 8/20 μs	-	-	9	
Clamping Voltage TLP <sup>(Note 3)</sup>	V <sub>CL</sub>	I <sub>PP</sub> = 8 A, t <sub>P</sub> = 100 ns,	-	7.16	-	V
		I <sub>PP</sub> = 16 A, t <sub>P</sub> = 100 ns,	-	9.3	-	
Dynamic Resistance	R <sub>DYN</sub>	t <sub>P</sub> = 100 ns	-	0.27	-	Ω
Off State Junction Capacitance	C <sub>J</sub>	0Vdc Bias f = 1 MHz	-	-	20	pF

PEC3203M1Q						
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 2)</sup>	V <sub>RWM</sub>	-	-	-	3.3	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>BR</sub> = 50 mA	3.5	-	4.5	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 3.3 V	-	-	0.5	μA
Clamping Voltage	V <sub>CL</sub>	I <sub>PP</sub> = 1 A, t <sub>P</sub> = 8/20 μs	-	-	5.5	V
		I <sub>PP</sub> = 10 A, t <sub>P</sub> = 8/20 μs	-	-	9	
Clamping Voltage TLP <sup>(Note 3)</sup>	V <sub>CL</sub>	I <sub>PP</sub> = 8 A, t <sub>P</sub> = 100 ns,	-	7.2	-	V
		I <sub>PP</sub> = 16 A, t <sub>P</sub> = 100 ns,	-	9.2	-	
Dynamic Resistance	R <sub>DYN</sub>	t <sub>P</sub> = 100 ns	-	0.25	-	Ω
Off State Junction Capacitance	C <sub>J</sub>	0Vdc Bias f = 1 MHz	-	-	20	pF



## PEC3202M1Q ~ PEC3205M1Q Series

### PEC3205M1Q

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Reverse Stand-Off Voltage <sup>(Note 2)</sup>	$V_{RWM}$	-	-	-	5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_{SB} = 50 \text{ mA}$	5.5	-	8	V
Reverse Leakage Current	$I_R$	$V_R = 5 \text{ V}$	-	-	0.5	$\mu\text{A}$
Clamping Voltage	$V_{CL}$	$I_{PP} = 1 \text{ A}, t_P = 8/20 \text{ }\mu\text{s}$	-	-	10	V
		$I_{PP} = 5 \text{ A}, t_P = 8/20 \text{ }\mu\text{s}$	-	-	13	
Clamping Voltage TLP <sup>(Note 3)</sup>	$V_{CL}$	$I_{PP} = 8 \text{ A}, t_P = 100 \text{ ns},$	-	11.8	-	V
		$I_{PP} = 16 \text{ A}, t_P = 100 \text{ ns},$	-	15.9	-	
Dynamic Resistance	$R_{DYN}$	$t_P = 100 \text{ ns}$	-	0.51	-	$\Omega$
Off State Junction Capacitance	$C_J$	0Vdc Bias $f = 1 \text{ MHz}$	-	-	20	pF

**NOTES :**

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
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:  $Z_0 = 50 \Omega$ ,  $t_P = 100 \text{ ns}$ .



# PEC3202M1Q ~ PEC3205M1Q Series

## TYPICAL CHARACTERISTIC CURVES

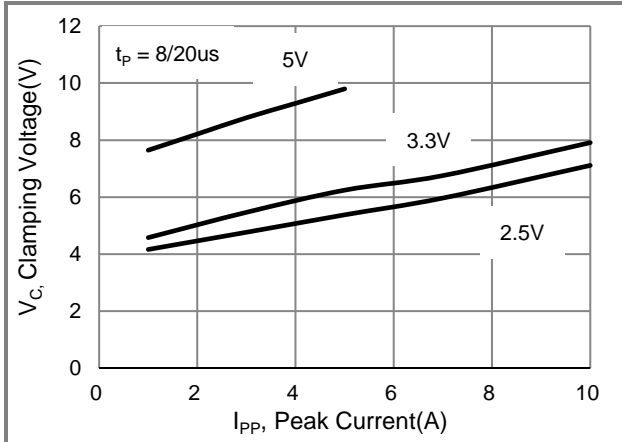


Fig.1 Typical Peak Clamping Voltage

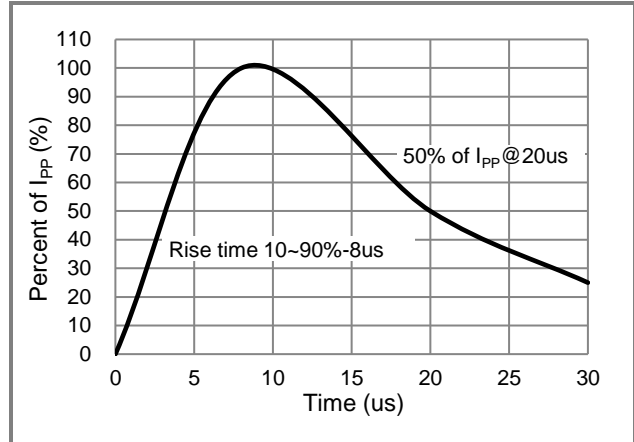


Fig.2 Pulse Waveform

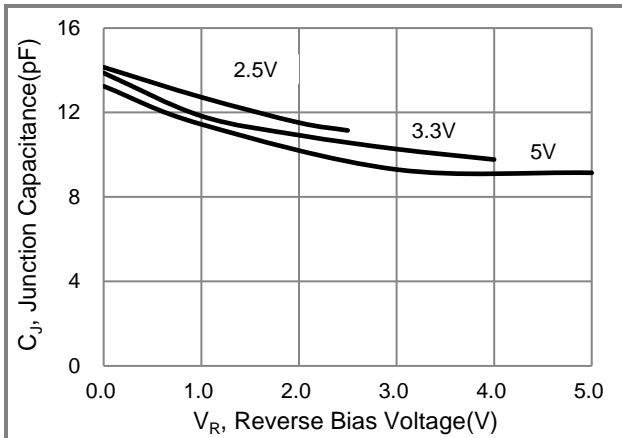


Fig.3 Typical Junction Capacitance

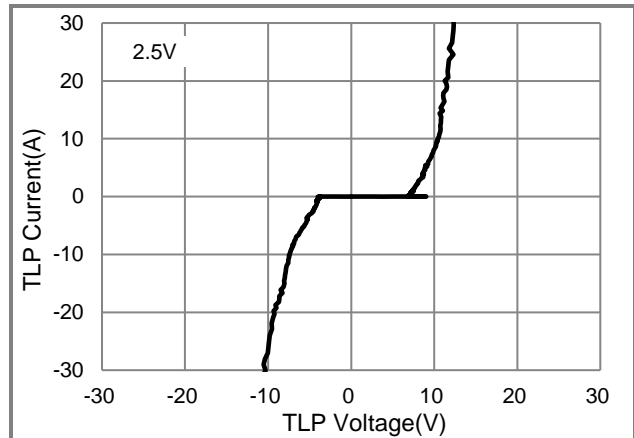


Fig.4 TLP Measurement

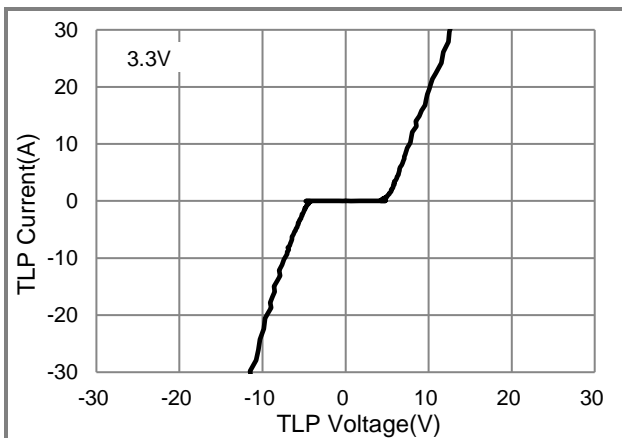


Fig.5 TLP Measurement

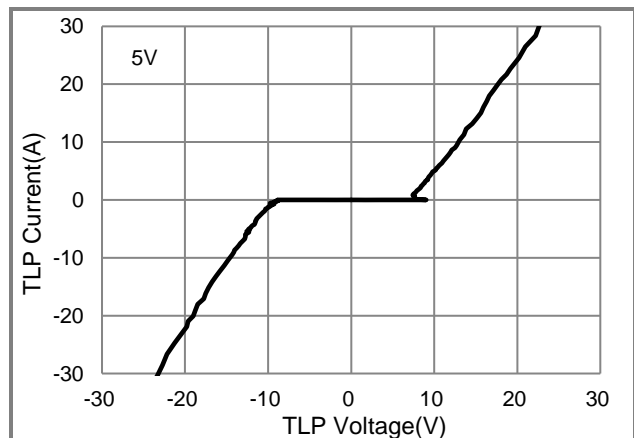


Fig.6 TLP Measurement

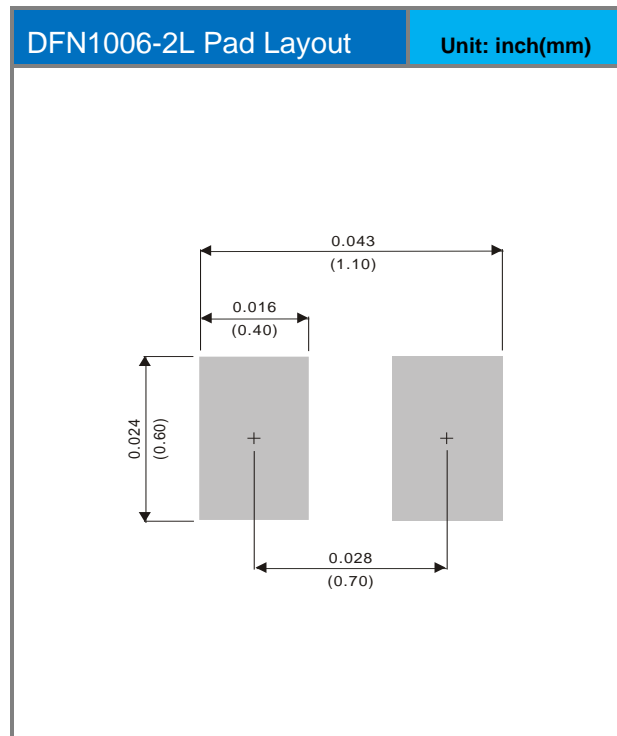
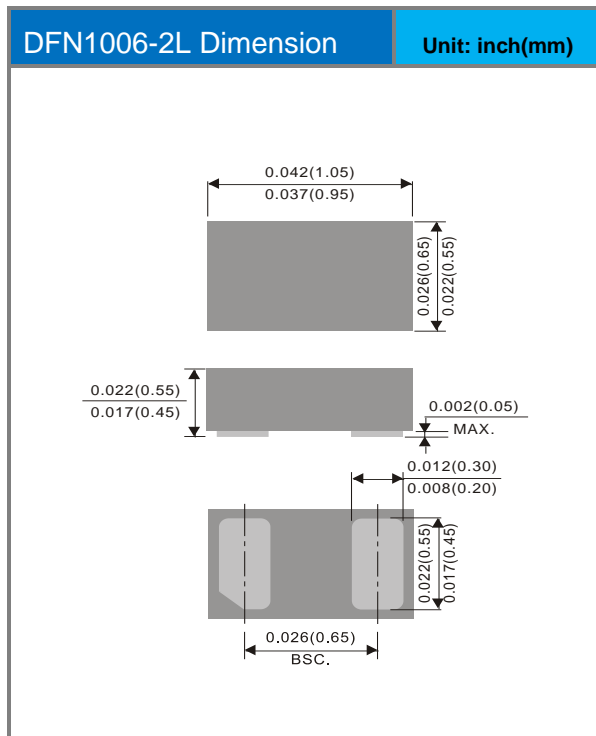


## PEC3202M1Q ~ PEC3205M1Q Series

### Part No. Packing Code Version

Part No.	Package Type	Packing Type	Marking	Version
PEC3202M1Q	DFN1006-2L	10K pcs / 7" Reel	KJ	Halogen free RoHS compliant
PEC3203M1Q	DFN1006-2L	10K pcs / 7" Reel	KK	Halogen free RoHS compliant
PEC3205M1Q	DFN1006-2L	10K pcs / 7" Reel	HE	Halogen free RoHS compliant

### Packaging Information & Mounting Pad Layout





## PEC3202M1Q ~ PEC3205M1Q Series

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