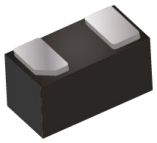
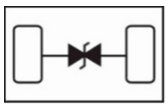
PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

ESD Protection

Voltage **2.5~5 V**

DFN1006-2L





Features

- ISO10605(C=330pF, R=330Ω) : ±30kV Air, ±30kV Contact
- HBM ≧ ±8KV & CDM ≧ ±2KV
- IEC61000-4-5(Lightning) : 20~30A(8/20uS)
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standar

Mechanical Data

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

Maximum Ratings and Thermal Characteristics (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air) ESD IEC61000-4-2(Contact)	V_{ESD}	±30 ±30	kV
Typical Thermal Resistance(Note 1)	$R_{\theta JA}$	430	°C/W
Operating Junction Temperature Range	T_J	-55~150	°C
Storage Temperature Range	T_{STG}	-55~150	°C

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Electrical Characteristics (T_A = 25 °C unless otherwise noted)

PEC4102M1Q-AU						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	2.5	V
Reverse Breakdown Voltage	V_{BR}	I_{BR} = 50 mA	2.6	-	4	V
Reverse Leakage Current	I_R	V_R = 2.5 V	-	-	0.5	uA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 us	-	-	4.5	V
		I_{PP} = 30 A, t_P = 8/20 us	-	-	9	
Clamping Voltage TLP(Note 3)	V_{CL}	I_{PP} = 8 A, t_P = 100 ns,	-	4.5	-	V
		I_{PP} = 16 A, t_P = 100 ns,	-	5.3	-	V
Dynamic Resistance	R_{DYN}	t_P = 100 ns	-	0.10	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	120	pF

PEC4103M1Q-AU						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	3.3	V
Reverse Breakdown Voltage	V_{BR}	I_{BR} = 50 mA	3.5	-	4.5	V
Reverse Leakage Current	I_R	V_R = 3.3 V	-	-	0.5	uA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 us	-	-	5.5	V
		I_{PP} = 30 A, t_P = 8/20 us	-	-	9	
Clamping Voltage TLP(Note 3)	V_{CL}	I_{PP} = 8 A, t_P = 100 ns,	-	4.6	-	V
		I_{PP} = 16 A, t_P = 100 ns,	-	5.2	-	V
Dynamic Resistance	R_{DYN}	t_P = 100 ns	-	0.08	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	100	pF

PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

PEC4105M1Q-AU						
PARAMETER	**SYMBOL**	**TEST CONDITION**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Reverse Stand-Off Voltage(Note 2)	V_{RWM}	-	-	-	5	V
Reverse Breakdown Voltage	V_{BR}	I_{SB} = 50 mA	5.5	-	8	V
Reverse Leakage Current	I_R	V_R = 5 V	-	-	0.5	uA
Clamping Voltage	V_{CL}	I_{PP} = 1 A, t_P = 8/20 us	-	-	10	V
		I_{PP} = 20 A, t_P = 8/20 us	-	-	13	
Clamping Voltage TLP(Note 3)	V_{CL}	I_{PP} = 8 A, t_P = 100 ns,	-	8.3	-	V
		I_{PP} = 16 A, t_P = 100 ns,	-	9.4	-	V
Dynamic Resistance	R_{DYN}	t_P = 100 ns	-	0.14	-	Ω
Off State Junction Capacitance	C_J	0Vdc Bias f = 1 MHz	-	-	80	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: Z0 = 50 Ω, t_P = 100 ns.

PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

TYPICAL CHARACTERISTIC CURVES

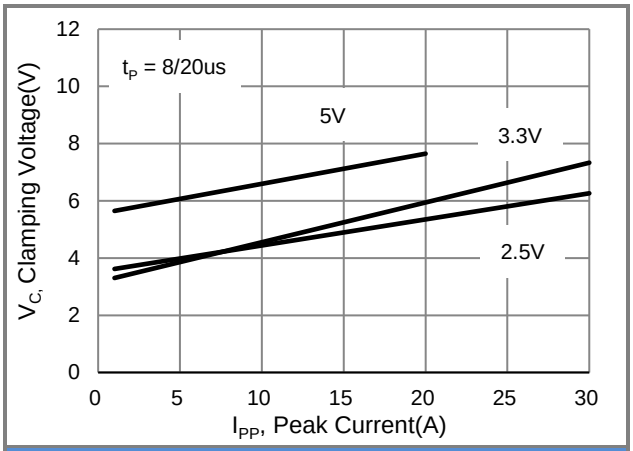


Fig.1 Typical Peak Clamping Voltage

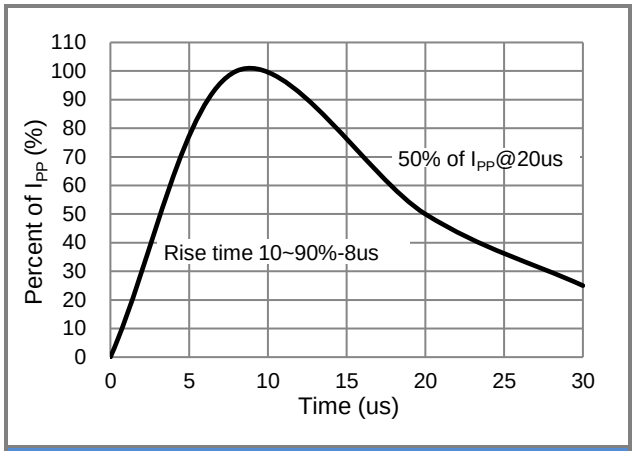


Fig.2 Pulse Waveform

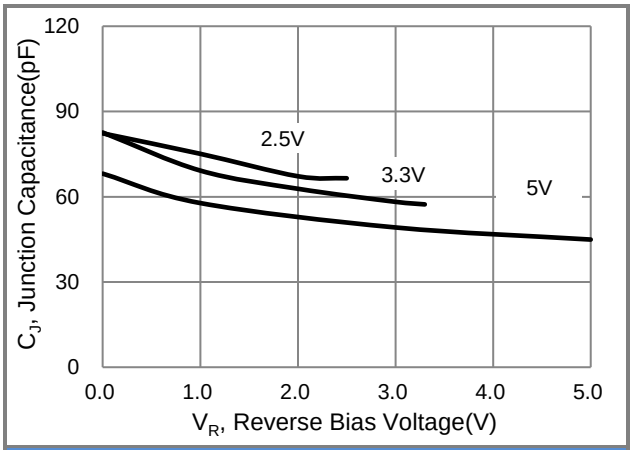


Fig.3 Typical Junction Capacitance

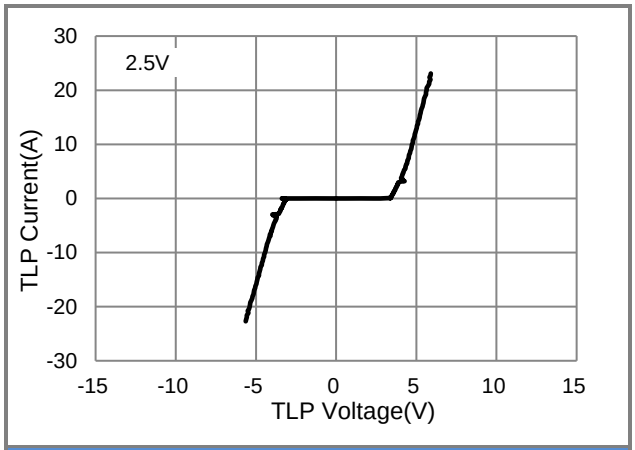


Fig.4 TLP Measurement

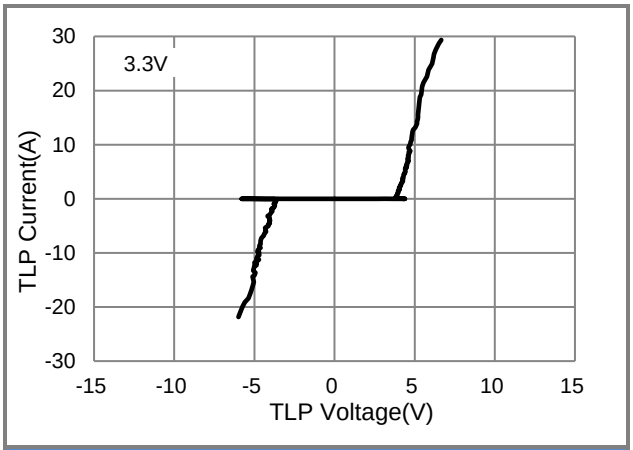


Fig.5 TLP Measurement

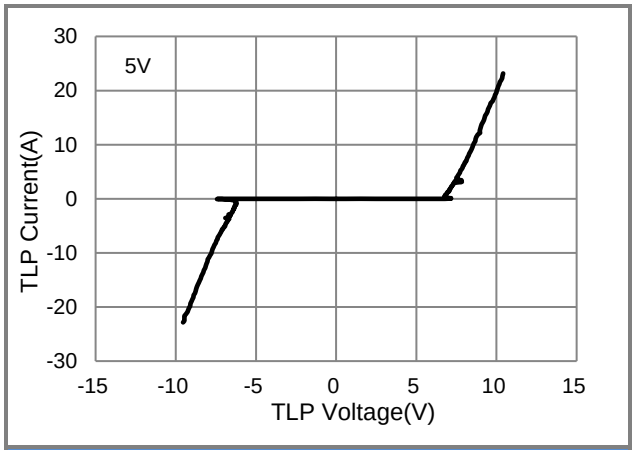


Fig.6 TLP Measurement

PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

TYPICAL CHARACTERISTIC CURVES

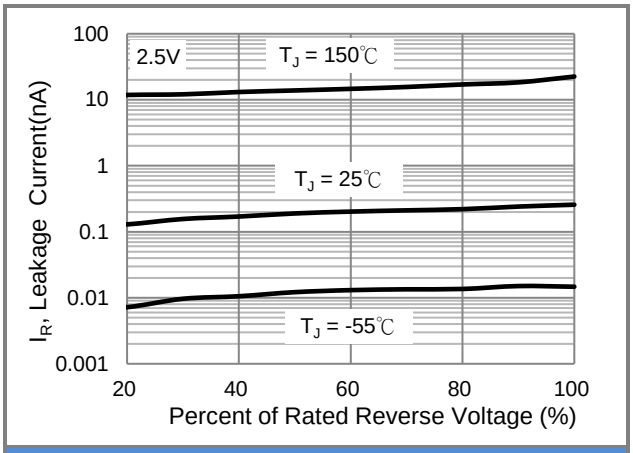


Fig.7 Typical Reverse Characteristics

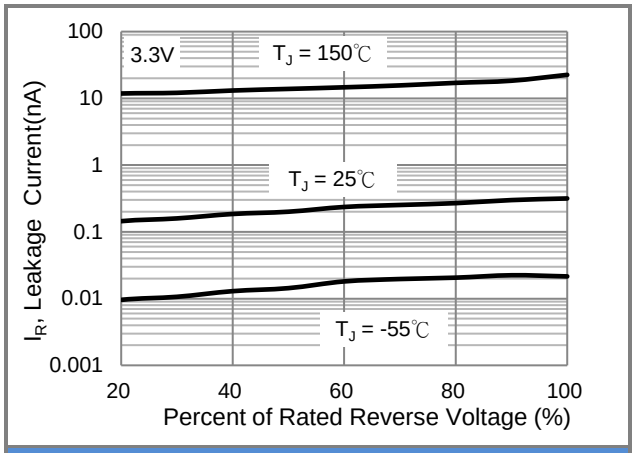


Fig.8 Typical Reverse Characteristics

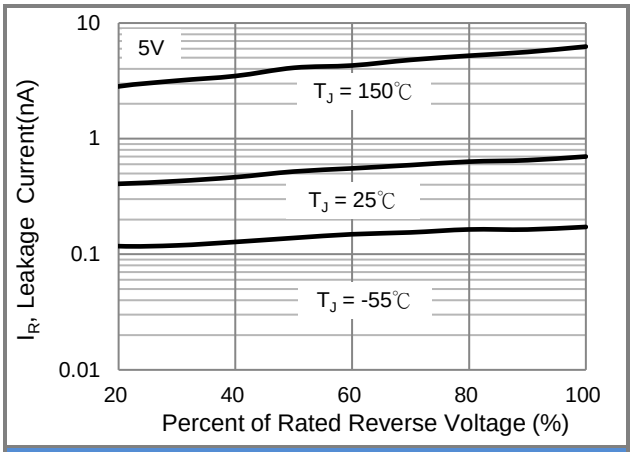


Fig.9 Typical Reverse Characteristics

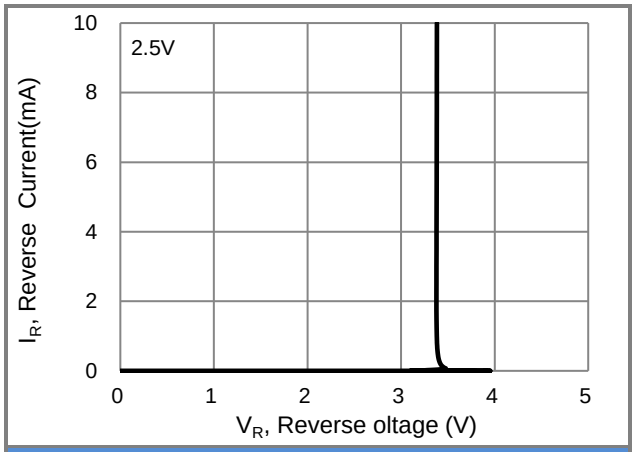


Fig.10 Typical Reverse Characteristics

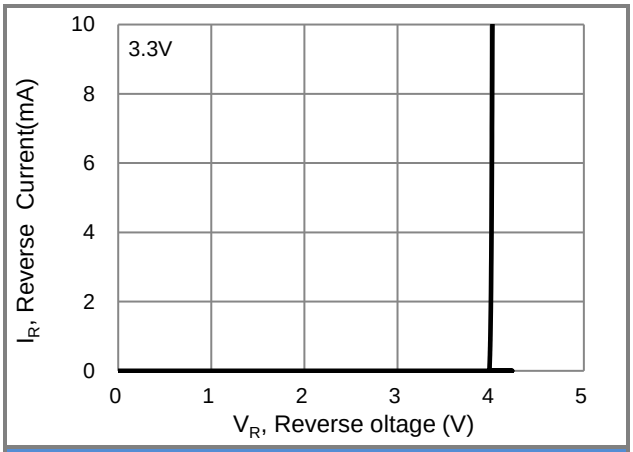


Fig.11 Typical Reverse Characteristics

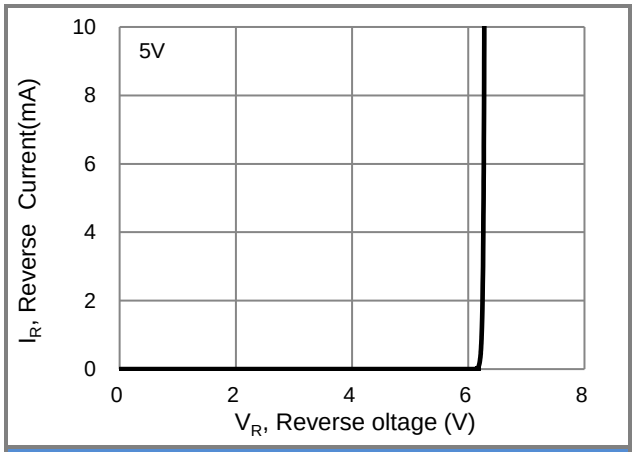


Fig.12 Typical Reverse Characteristics

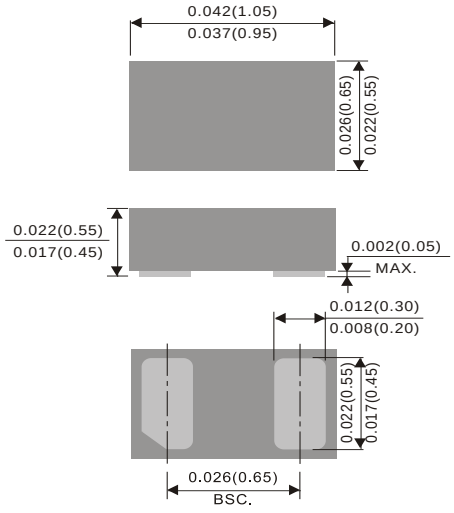
PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

Product and Packing Information

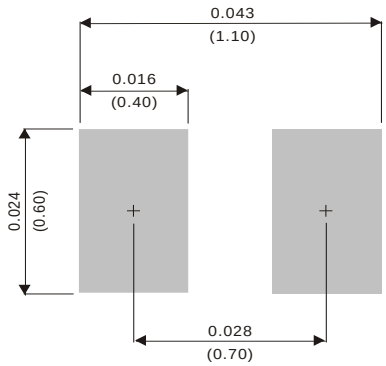
Part No.	Package Type	Packing Type	Marking
PEC4102M1Q-AU	DFN1006-2L	10K pcs / 7" reel	YB
PEC4103M1Q-AU	DFN1006-2L	10K pcs / 7" reel	YC
PEC4105M1Q-AU	DFN1006-2L	10K pcs / 7" reel	YD

Packaging Information & Mounting Pad Layout

DFN1006-2L Dimension — Unit: inch(mm)



DFN1006-2L Pad Layout — Unit: inch(mm)



PEC4102M1Q-AU ~ PEC4105M1Q-AU Series

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