



# PEC3112M1Q

## ESD Protection

**Voltage** 12 V

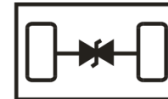
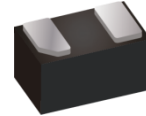
### Features

- IEC61000-4-2(ESD) : ±30kV Air, ±25kV Contact
- IEC61000-4-4(EFT) : 40A(5/50ns)
- IEC61000-4-5(Lightning) : 2.5A(8/20uS)
- Low leakage current, maximum of 1uA 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, DFN1006-2L
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.00002 ounces, 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>                | ±30         | kV    |
| ESD IEC61000-4-2(Contact)            |                                 | ±25         |       |
| Typical Thermal Resistance           | R <sub>θJA</sub> <sup>(1)</sup> | 430         | °C/W  |
| Operating Junction Temperature Range | T <sub>J</sub>                  | -55 to +150 | °C    |
| Storage Temperature Range            | T <sub>STG</sub>                | -55 to +150 | °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      | $V_{RWM}^{(2)}$ | -   | -    | -    | 12   | V             |
| Reverse Breakdown Voltage      | $V_{BR}$        | $I_{BR} = 1\text{ mA}$                        | 13   | -    | 16   | V             |
| Reverse Leakage Current        | $I_R$           | $V_R = 12\text{ V}$                           | -    | -    | 1    | $\mu\text{A}$ |
| Clamping Voltage               | $V_{CL}$        | $I_{PP} = 1\text{ A}, t_P = 8/20\text{ us}$   | -    | -    | 20   | V             |
|                                |                 | $I_{PP} = 2.5\text{ A}, t_P = 8/20\text{ us}$ | -    | -    | 25   | V             |
| Clamping Voltage TLP           | $V_{CL}^{(3)}$  | $I_{PP} = 8\text{ A}, t_P = 100\text{ ns}$    | -    | 20.3 | -    | V             |
|                                |                 | $I_{PP} = 16\text{ A}, t_P = 100\text{ ns}$   | -    | 24.6 | -    |               |
| Dynamic Resistance             | $R_{DYN}$       | $t_P = 100\text{ ns}$                         | -    | 0.54 | -    | $\Omega$      |
| Off State Junction Capacitance | $C_J$           | 0 Vdc Bias $f = 1\text{ MHz}$                 | -    | -    | 10   | pF            |

Note :

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

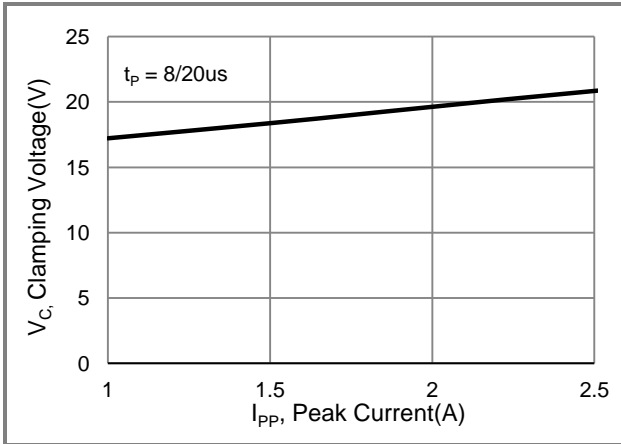


Fig.1 Typical Peak Clamping Voltage

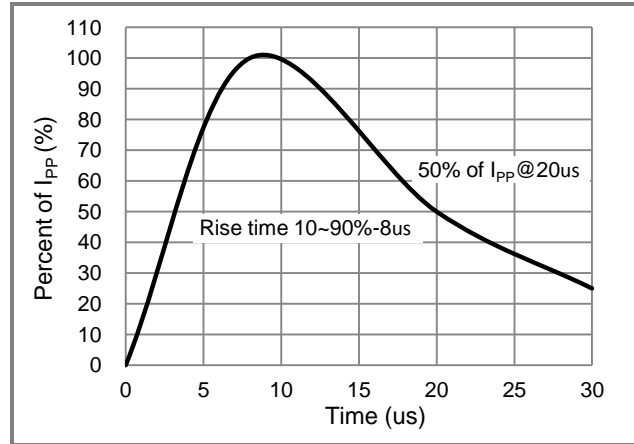


Fig.2 Pulse Waveform

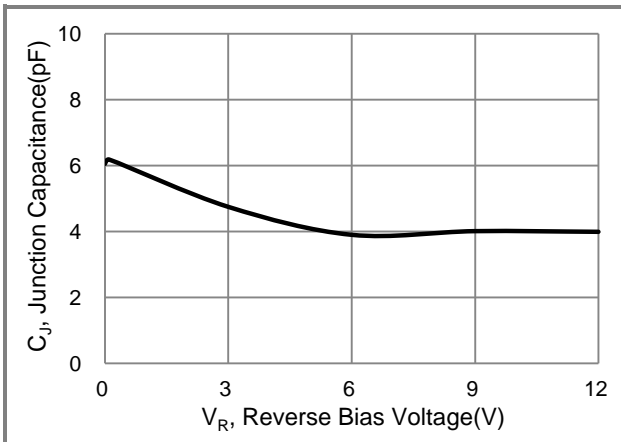


Fig.3 Typical Junction Capacitance

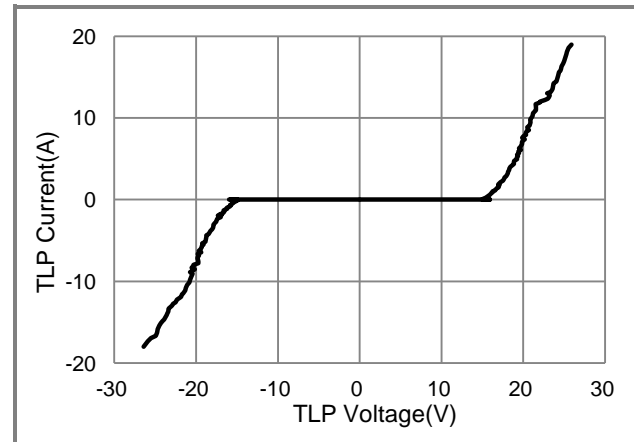


Fig.4 TLP Measurement



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## Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type      | Marking | Version      |
|----------------------|--------------|-------------------|---------|--------------|
| PEC3112M1Q_R1_00001  | DFN1006-2L   | 10K pcs / 7" reel | HF      | Halogen free |

## Packaging Information & Mounting Pad Layout

