

## PEC4102AS-AU ~ PEC4105AS-AU Series

### ESD Protection

**Voltage**

**2.5~5 V**

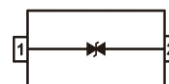
### Features

- 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) : 20~30A(8/20uS)
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : SOD-123 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0104 grams

SOD-123



### 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> | 510      | °C/W  |
| Operating Junction Temperature Range           | T <sub>J</sub>   | -55~150  | °C    |
| Storage Temperature Range                      | T <sub>STG</sub> | -55~150  | °C    |

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### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| PEC4102AS-AU                                  |           |                                                          |      |      |      |               |
|-----------------------------------------------|-----------|----------------------------------------------------------|------|------|------|---------------|
| PARAMETER                                     | SYMBOL    | TEST CONDITION                                           | MIN. | TYP. | MAX. | UNITS         |
| Reverse Stand-Off Voltage <sup>(Note 2)</sup> | $V_{RWM}$ | -                                                        | -    | -    | 2.5  | V             |
| Reverse Breakdown Voltage                     | $V_{BR}$  | $I_{BR} = 50\text{ mA}$                                  | 2.6  | -    | 4    | V             |
| Reverse Leakage Current                       | $I_R$     | $V_R = 2.5\text{ V}$                                     | -    | -    | 0.5  | $\mu\text{A}$ |
| Clamping Voltage                              | $V_{CL}$  | $I_{PP} = 1\text{ A}$ , $t_P = 8/20\text{ }\mu\text{s}$  | -    | -    | 4.5  | V             |
|                                               |           | $I_{PP} = 30\text{ A}$ , $t_P = 8/20\text{ }\mu\text{s}$ | -    | -    | 9    |               |
| Off State Junction Capacitance                | $C_J$     | 0Vdc Bias $f = 1\text{ MHz}$                             | -    | -    | 120  | pF            |

| PEC4103AS-AU                                  |           |                                                          |      |      |      |               |
|-----------------------------------------------|-----------|----------------------------------------------------------|------|------|------|---------------|
| PARAMETER                                     | SYMBOL    | TEST CONDITION                                           | MIN. | TYP. | MAX. | UNITS         |
| Reverse Stand-Off Voltage <sup>(Note 2)</sup> | $V_{RWM}$ | -                                                        | -    | -    | 3.3  | V             |
| Reverse Breakdown Voltage                     | $V_{BR}$  | $I_{BR} = 50\text{ mA}$                                  | 3.5  | -    | 4.5  | V             |
| Reverse Leakage Current                       | $I_R$     | $V_R = 3.3\text{ V}$                                     | -    | -    | 0.5  | $\mu\text{A}$ |
| Clamping Voltage                              | $V_{CL}$  | $I_{PP} = 1\text{ A}$ , $t_P = 8/20\text{ }\mu\text{s}$  | -    | -    | 5.5  | V             |
|                                               |           | $I_{PP} = 30\text{ A}$ , $t_P = 8/20\text{ }\mu\text{s}$ | -    | -    | 9    |               |
| Off State Junction Capacitance                | $C_J$     | 0Vdc Bias $f = 1\text{ MHz}$                             | -    | -    | 100  | pF            |

| PEC4105AS-AU                                  |           |                                                          |      |      |      |               |
|-----------------------------------------------|-----------|----------------------------------------------------------|------|------|------|---------------|
| 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             |
|                                               |           | $I_{PP} = 20\text{ A}$ , $t_P = 8/20\text{ }\mu\text{s}$ | -    | -    | 13   |               |
| Off State Junction Capacitance                | $C_J$     | 0Vdc Bias $f = 1\text{ MHz}$                             | -    | -    | 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.

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### TYPICAL CHARACTERISTIC CURVES

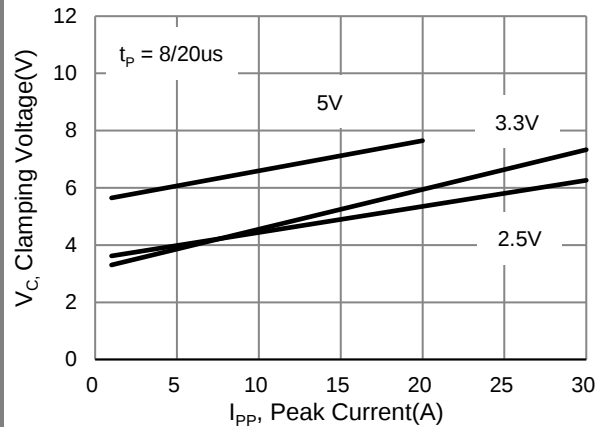


Fig.1 Typical Peak Clamping Voltage

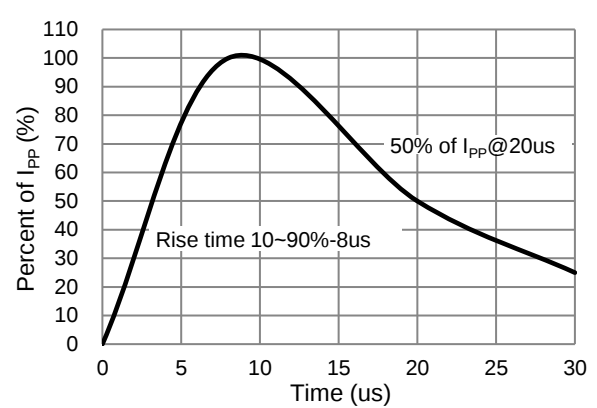


Fig.2 Pulse Waveform

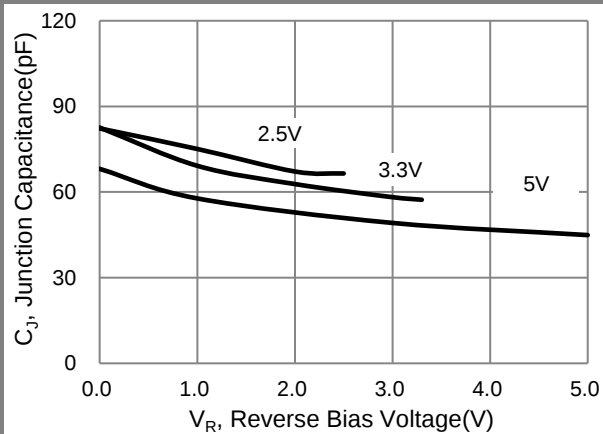


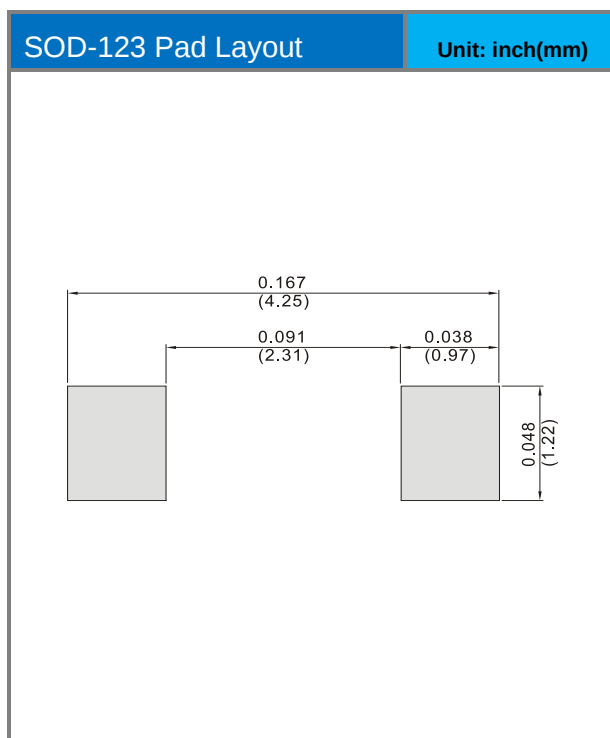
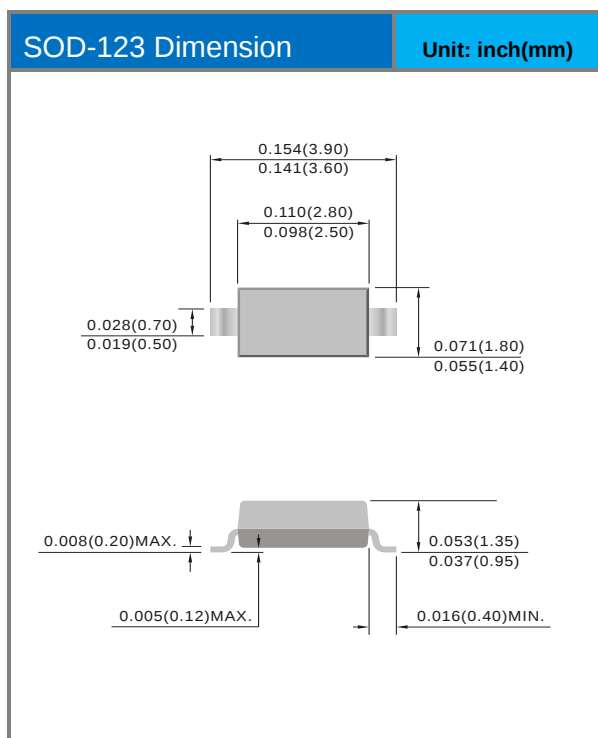
Fig.3 Typical Junction Capacitance

## PEC4102AS-AU ~ PEC4105AS-AU Series

### Product and Packing Information

| Part No.     | Package Type | Packing Type     | Marking |
|--------------|--------------|------------------|---------|
| PEC4102AS-AU | SOD-123      | 3K pcs / 7" reel | 5SH     |
| PEC4103AS-AU | SOD-123      | 3K pcs / 7" reel | 6SH     |
| PEC4105AS-AU | SOD-123      | 3K pcs / 7" reel | 7SH     |

### Packaging Information & Mounting Pad Layout



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