



# PE1805C4C6N

## ULTRA LOW CAPACITANCE ESD PROTECTION

**Voltage**

**5 V**

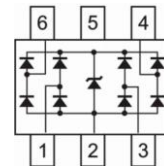
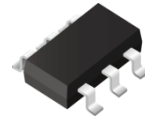
### Features

- IEC61000-4-2(ESD):  $\pm 20$  kV Air,  $\pm 15$  kV Contact
- IEC61000-4-4(EFT): 40 A(5/50 ns)
- IEC61000-4-5(Lightning): 5 A(8/20  $\mu$ S)
- 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, SOT-363
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounces, 0.006 grams

SOT-363



### Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                            | SYMBOL    | LIMIT    | UNITS            |
|--------------------------------------|-----------|----------|------------------|
| ESD IEC61000-4-2(Air)                | $V_{ESD}$ | $\pm 20$ | kV               |
| ESD IEC61000-4-2(Contact)            |           | $\pm 15$ |                  |
| Operating Junction Temperature Range | $T_J$     | -55~150  | $^\circ\text{C}$ |
| Storage Temperature Range            | $T_{STG}$ | -55~150  | $^\circ\text{C}$ |



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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      | $V_{RWM}^{(1)}$ | -  | -    | -    | 5    | V             |
| Reverse Breakdown Voltage      | $V_{BR}$        | $I_{BR} = 1\text{mA}$ ,<br>any I/O pins to Pin2                          | 6.5  | -    | 9.5  | V             |
| Reverse Leakage Current        | $I_R$           | $V_R = 5\text{V}$  | -    | -    | 1    | $\mu\text{A}$ |
| Clamping Voltage               | $V_{CL}$        | $I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$ ,<br>any I/O pins to Pin2 | -    | -    | 12   | V             |
|                                |                 | $I_{PP} = 5\text{A}$ , $t_P = 8/20\mu\text{s}$ ,<br>any I/O pins to Pin2 | -    | -    | 20   |               |
| Clamping Voltage TLP           | $V_{CL}^{(2)}$  | $I_{PP} = 8\text{A}$ , $t_P = 100\text{ns}$ ,<br>any I/O pins to Pin2    | -    | 17   | -    | V             |
|                                |                 | $I_{PP} = 16\text{A}$ , $t_P = 100\text{ns}$ ,<br>any I/O pins to Pin2   | -    | 21   | -    |               |
| Dynamic Resistance             | $R_{DYN}$       | $t_P = 100\text{ns}$   | -    | 0.5  | -    | $\Omega$      |
| Off State Junction Capacitance | $C_J$           | 0Vdc Bias $f = 1\text{MHz}$ ,<br>Between any I/O pins<br>to Pin2         | -    | -    | 0.8  | pF            |
|                                |                 | 0Vdc Bias $f = 1\text{MHz}$ ,<br>Between any I/O pins                    | -    | -    | 0.4  |               |

**NOTES:**

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:  $Z_0 = 50\ \Omega$ ,  $t_P = 100\ \text{ns}$ .



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## TYPICAL CHARACTERISTIC CURVES

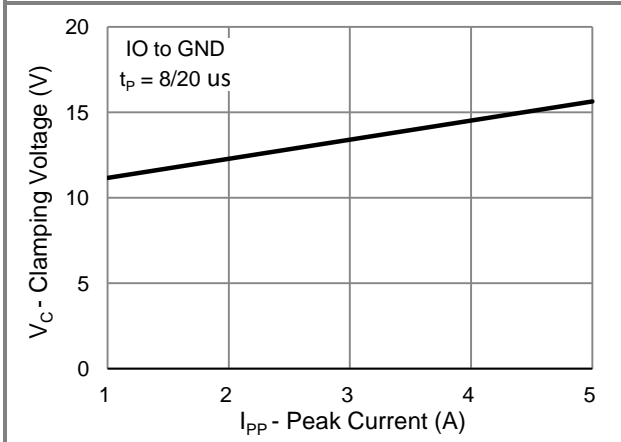


Fig.1 Typical Peak Clamping Voltage

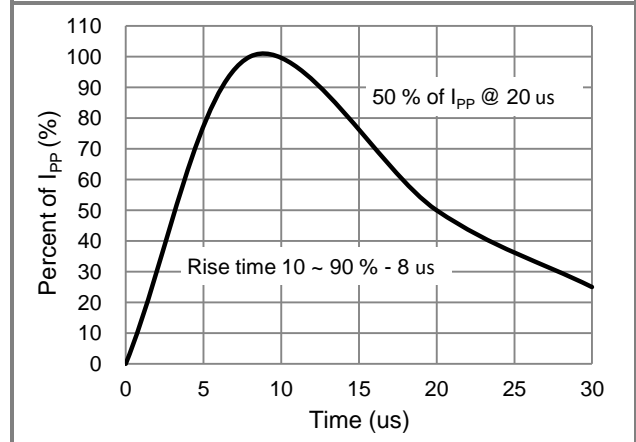


Fig.2 Pulse Waveform

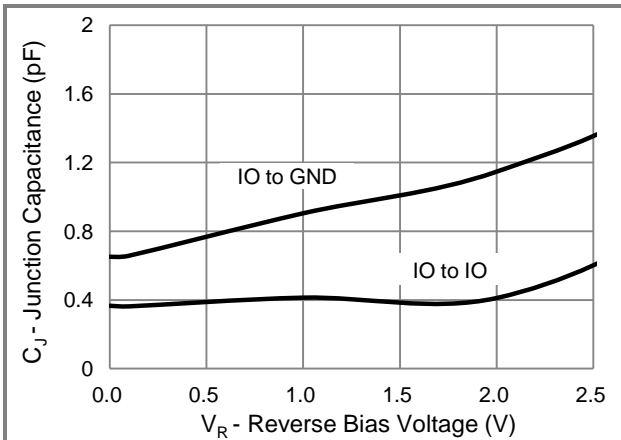


Fig.3 Typical Junction Capacitance

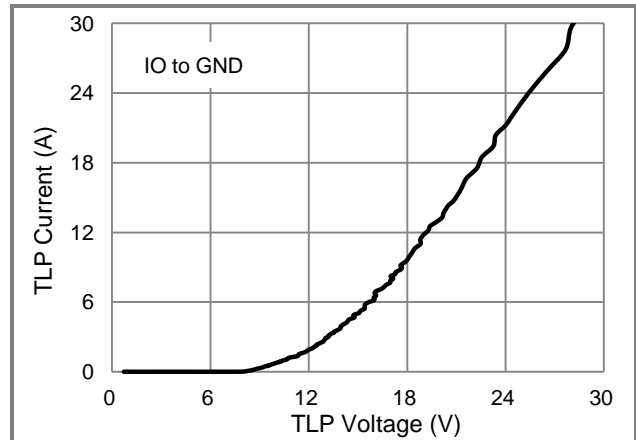


Fig.4 TLP Measurement

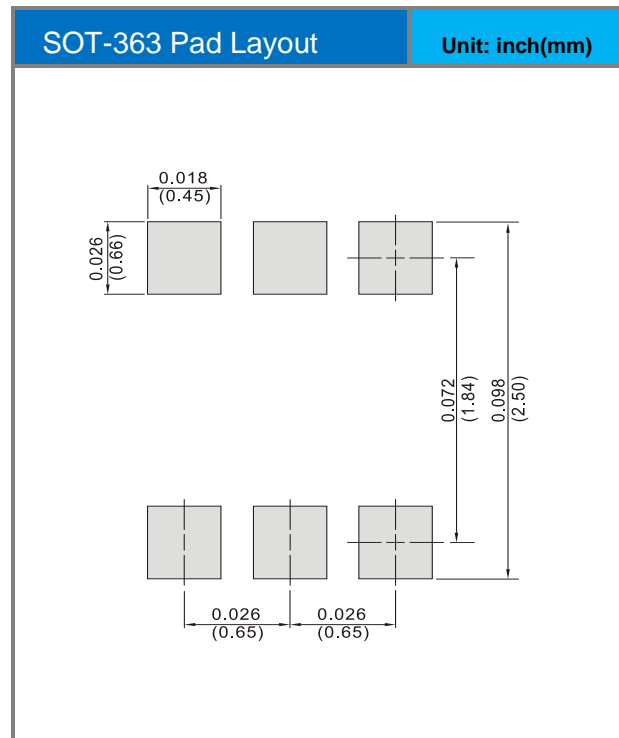
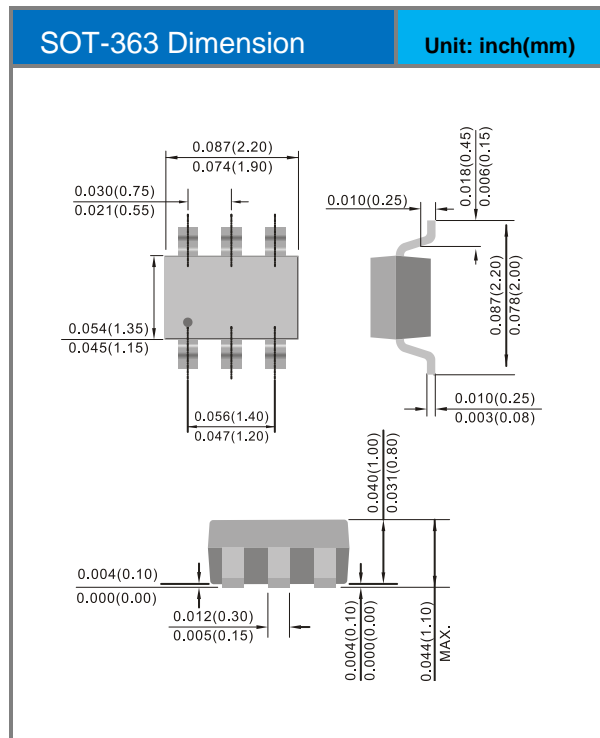


# PE1805C4C6N

## Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version      |
|----------------------|--------------|--------------|---------|--------------|
| PE1805C4C6N_R1_00001 | SOT-363      | 3K / 7" Reel | C6N     | Halogen Free |

## Packaging Information & Mounting Pad Layout





## PE1805C4C6N

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