



# PE1805C2A4

## ULTRA LOW CAPACITANCE ESD PROTECTION

**Voltage**

**5 V**

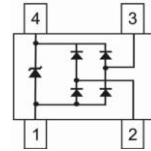
### Features

- IEC61000-4-2(ESD):  $\pm 22$  kV Air,  $\pm 18$  kV Contact
- IEC61000-4-4(EFT): 40 A(5/50 ns)
- IEC61000-4-5(Lightning): 3 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-143
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0004 ounces, 0.01 grams

SOT-143



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

PARAMETER	SYMBOL	LIMIT	UNITS
ESD IEC61000-4-2(Air)	$V_{ESD}$	$\pm 22$	kV
ESD IEC61000-4-2(Contact)		$\pm 18$	
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	$V_{BR}$	$I_{BR} = 1\text{mA}$ , Pin4 to Pin1	5	-	12	V
Reverse Leakage Current	$I_R$	$V_R = 5\text{V}$	-	-	1	$\mu\text{A}$
Clamping Voltage	$V_{CL}$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$ , any I/O pins to Pin1	-	-	13	V
		$I_{PP} = 3\text{A}$ , $t_P = 8/20\mu\text{s}$ , any I/O pins to Pin1	-	-	30	
Clamping Voltage TLP	$V_{CL}^{(2)}$	$I_{PP} = 8\text{A}$ , $t_P = 100\text{ns}$	-	22.4	-	V
		$I_{PP} = 16\text{A}$ , $t_P = 100\text{ns}$	-	33.5	-	
Dynamic Resistance	$R_{DYN}$	$t_P = 100\text{ns}$	-	1.39	-	$\Omega$
Off State Junction Capacitance	$C_J$	0Vdc Bias $f = 1\text{MHz}$ , Between any I/O pins to Pin1	-	-	0.8	pF
		0Vdc Bias $f = 1\text{MHz}$ , 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

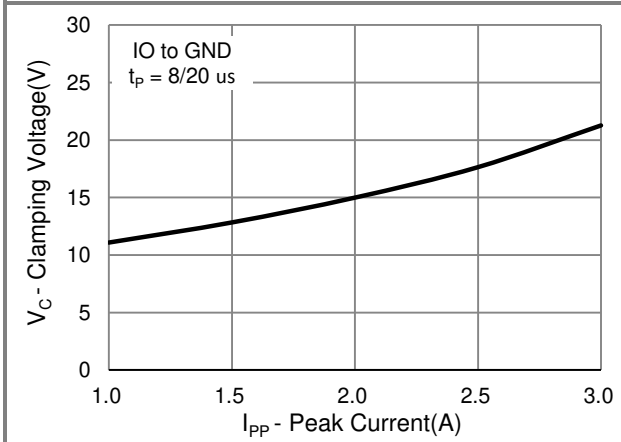


Fig.1 Typical Peak Clamping Voltage

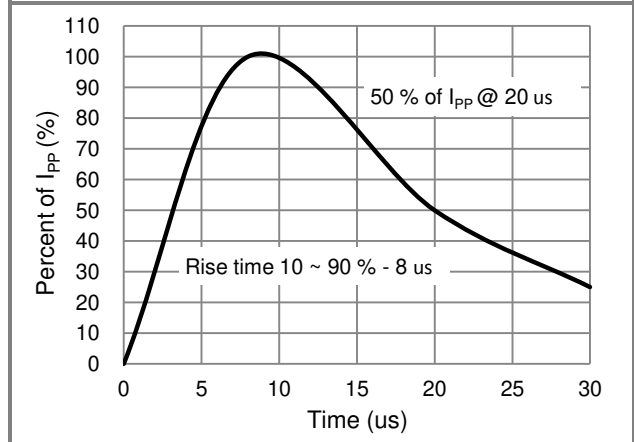


Fig.2 Pulse Waveform

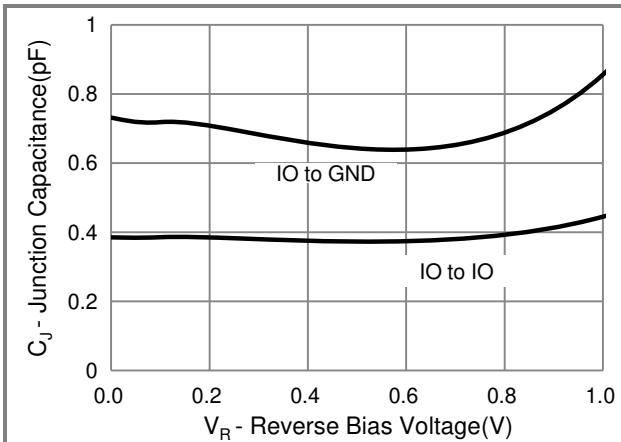


Fig.3 Typical Junction Capacitance

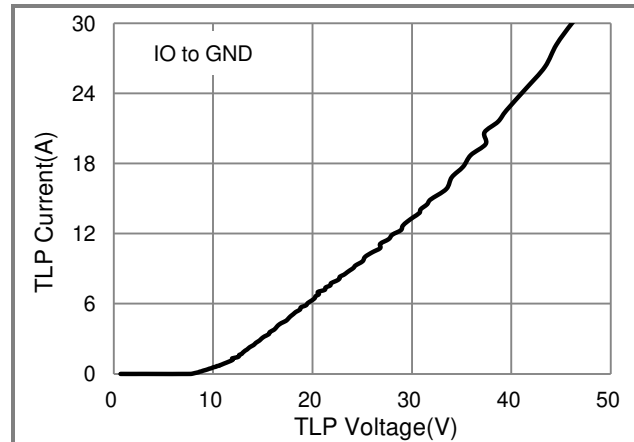


Fig.4 TLP Measurement

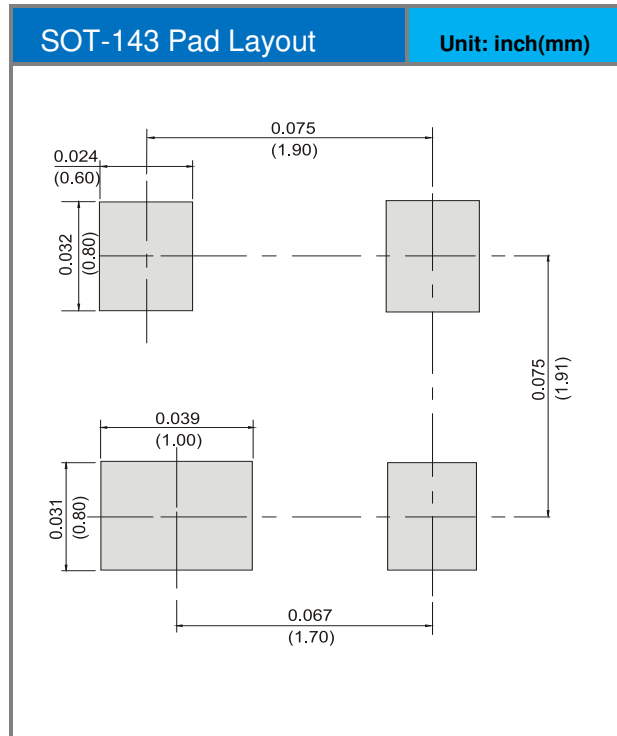
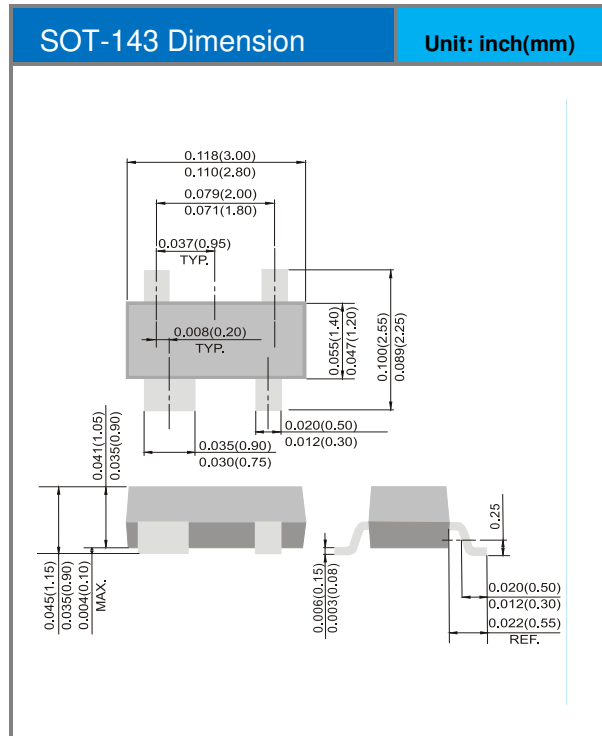


# PE1805C2A4

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
PE1805C2A4_R1_00001	SOT-143	3K / 7" Reel	U5V0	Halogen Free

## Packaging Information & Mounting Pad Layout





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