

# PE1605C2A-AU

## Ultra Low Capacitance ESD Protection

**Voltage**

**5 V**

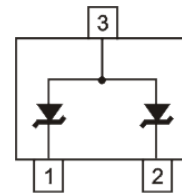
### Features

- ISO10605(C=330pF, R=330Ω) : ±20kV Air, ±15kV Contact
- HBM ≥ ±8KV & CDM ≥ ±2KV
- IEC61000-4-5(Lightning) : 4A(8/20uS)
- Low clamping voltage
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : Molded plastic, SOT-23
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0084 grams

**SOT-23**



## Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
ESD IEC61000-4-2(Air)	V <sub>ESD</sub>	±20	kV
ESD IEC61000-4-2(Contact)		±15	
Typical Thermal Resistance <sup>(Note 1)</sup>	R <sub>θJA</sub>	350	°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<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage <sup>(Note 2)</sup>	V <sub>RWM</sub>	-	-	-	5	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>BR</sub> = 1mA, any I/O pins to GND	5.5	6.9	8	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> =5V	-	-	50	nA
Clamping Voltage	V <sub>CL</sub>	I <sub>PP</sub> = 1A, t <sub>P</sub> = 8/20us, any I/O pins to GND	-	-	10	V
		I <sub>PP</sub> = 4A, t <sub>P</sub> = 8/20us, any I/O pins to GND	-	-	15	
Clamping Voltage TLP <sup>(Note 3)</sup>	V <sub>CL</sub>	I <sub>PP</sub> = 8A, t <sub>P</sub> = 100ns, any I/O pins to GND	-	16	-	V
		I <sub>PP</sub> = 16A, t <sub>P</sub> = 100ns, any I/O pins to GND	-	23.5	-	
Dynamic Resistance	R <sub>DYN</sub>	t <sub>P</sub> = 100ns	-	0.94	-	Ω
Off State Junction Capacitance	C <sub>J</sub>	0Vdc Bias f = 1MHz, Between any I/O pins to GND	-	-	0.6	pF
		0Vdc Bias f = 1MHz, Between any I/O pins	-	-	0.3	

**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<sub>RWM</sub>), 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<sub>0</sub> = 50 Ω, t<sub>P</sub> = 100 ns.

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## TYPICAL CHARACTERISTIC CURVES

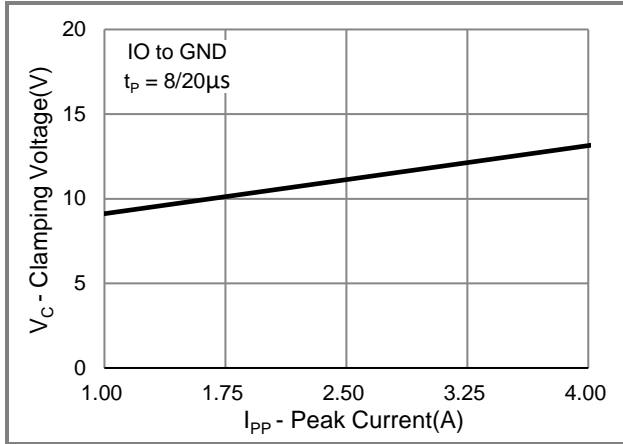


Fig.1 Typical Peak Clamping Voltage

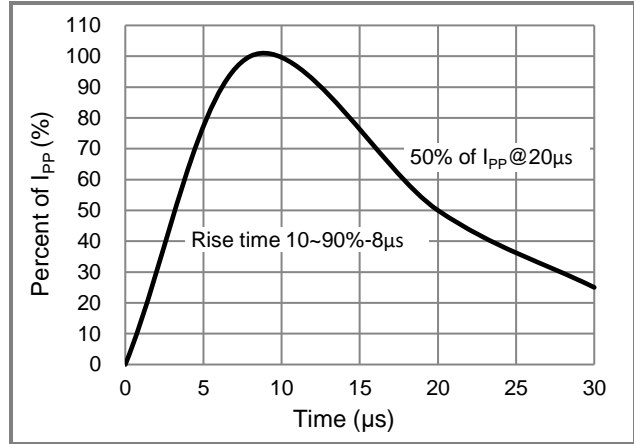


Fig.2 Pulse Waveform

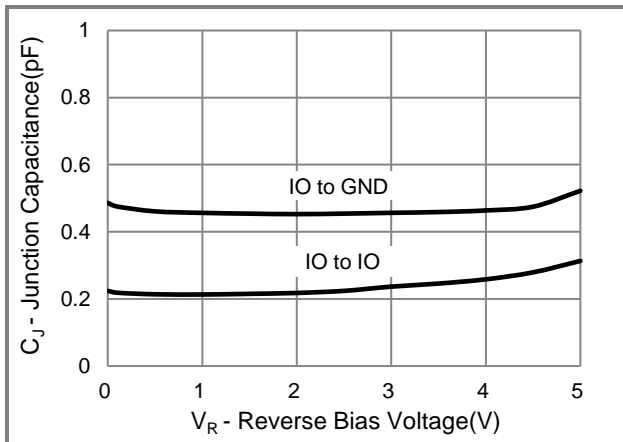


Fig.3 Typical Junction Capacitance

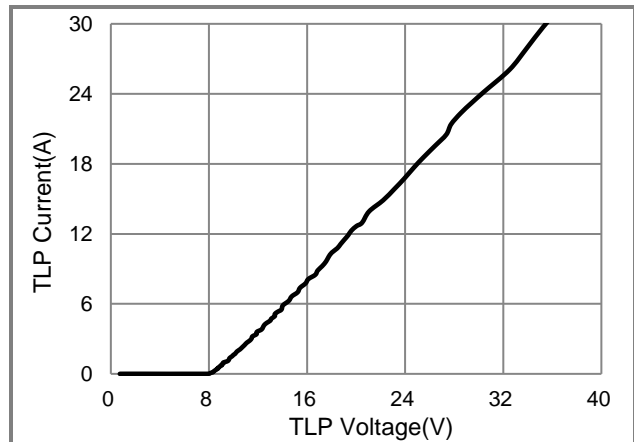


Fig.4 TLP Measurement

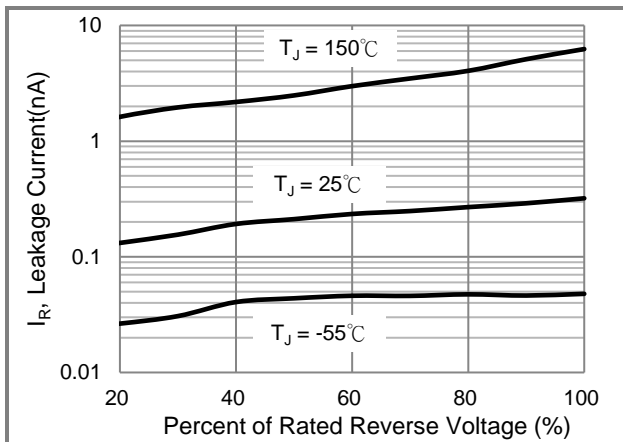


Fig.5 Typical Reverse Characteristics

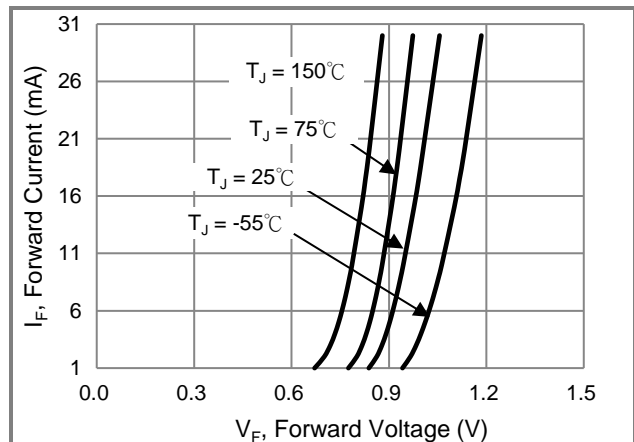


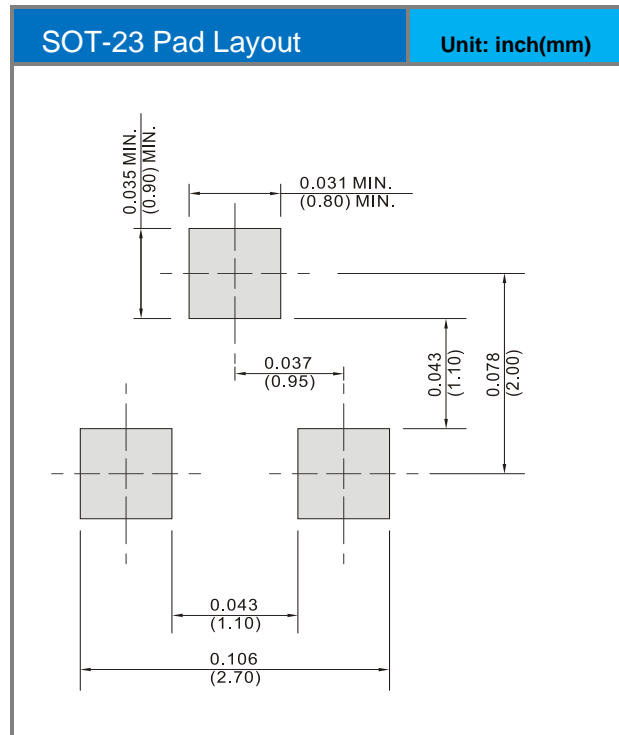
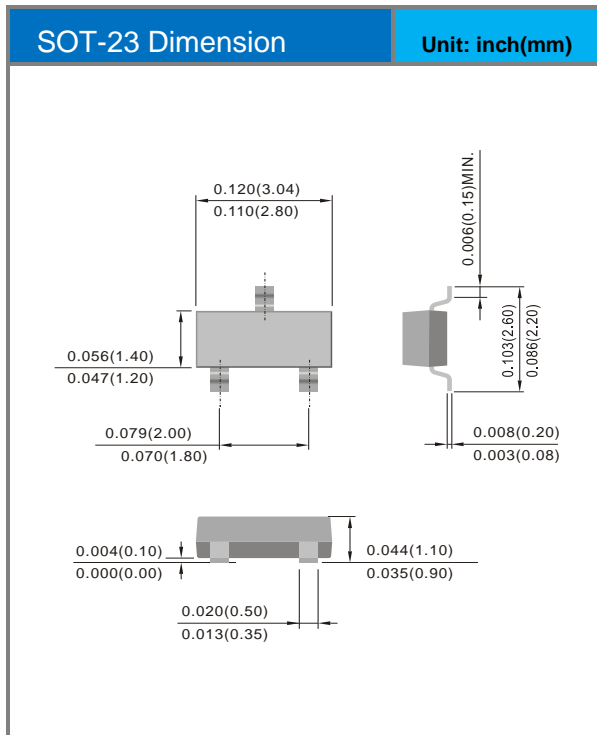
Fig.6 Typical Forward Characteristics

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## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PE1605C2A-AU	SOT-23	3K pcs / 7" reel	KCC

## Packaging Information & Mounting Pad Layout



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