



Part Number: TC0121-004

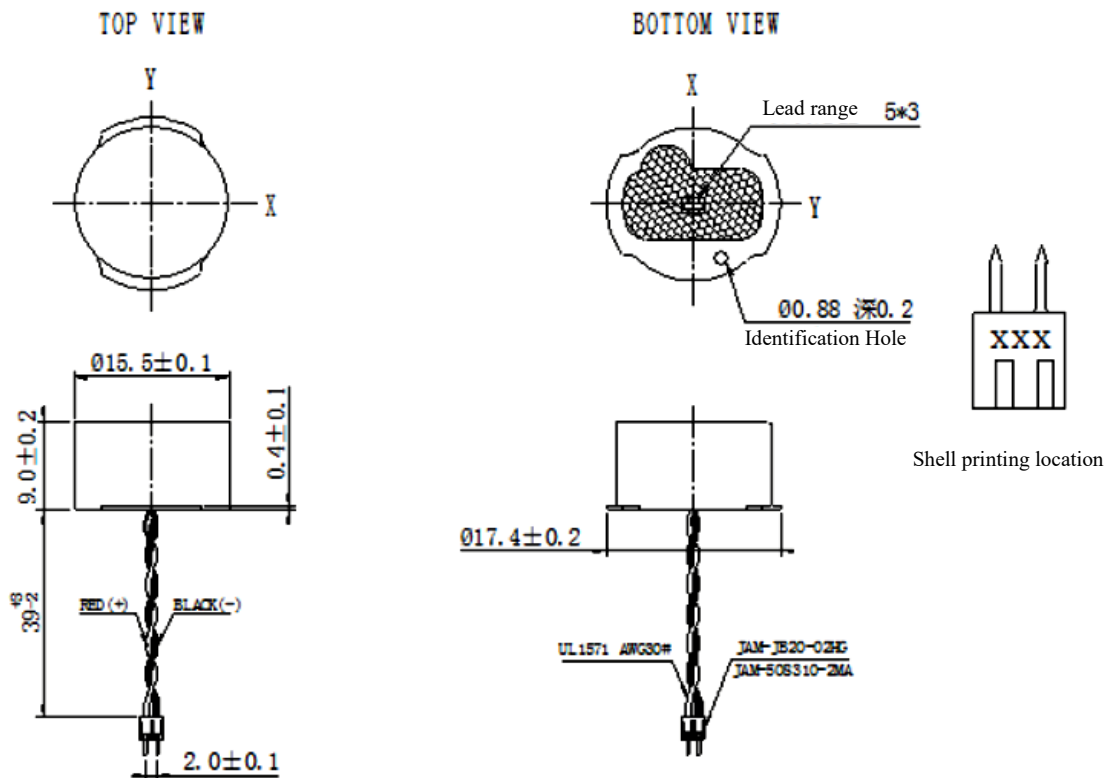
Model Number: T/R55.5-15.5E279Z-L19-01

Overview

The UPA ultrasonic sensor is the core component of Parking systems. It uses ultrasound to measure the distance between the vehicle and the front and rear obstructions.

Applications can include Parking assist systems and Blind zone detection.

Appearance and Dimensions, Unit: mm



Notes:

1. 279 is the color code number, which is the primer (P580-3100 epoxy primer) whichever is the color plate
2. P580-3100 epoxy primer supplier is Shenzhen Dongin Auto Sales & Service Co., Ltd.
3. Except for the exemption of piezoelectric ceramic sheets, the other materials are in compliance with the "RoHS" requirements.
4. The blue plastic shell of the stranded terminal is printed with three white characters "xxx", as shown in the figure, the first digit represents the year of which 6, 7, 8, 9... represents 2016, 2017, 2018, 2019...respectively; the third represents the shipment batch number: 1, 2, 3...
5. The thickness of the primer is $15 \pm 5\mu\text{m}$
6. The product rubber surface does not exceed the surface of the aluminum shell

TENTATIVE RELEASE:

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<u>Part No.</u>	<u>Rev</u>	<u>Title</u>	<u>Sheet No.</u>
TC0121-004	A2	Piezo Ultrasonic Sensor	1 of 6

Electrical Specifications

No.	Items	Specification	Note
1	Resonant Frequency	55.5 ± 1.0 KHz	Impedance analyzer measurement
2	Overall Sensitivity	480-1000 μS	CY00523-UPA-55.5K test board, according to Fig. 1 Test distance M taret Φ75*1000mm PVC pipe, facing the probe
3	Ring time	≤2.20mS at +25°C	CY00523-UPA-55.5K test board, according to Fig. 1 Test residual vibration including fundamental wave
		≤2.6mS at -40 to +85°C	
4	X-axle direction angle	90 ± 15 (Typical)	B&K test system, -6dB full-angle sensitivity, press Fig. 2 test
5	Y-axle direction angle	45 ± 10 (Typical)	B&K test system, -6dB full-angle sensitivity, press Fig. 2 test
6	Capacitance	1300 ± 20% pF	At 1kHz, 25 ± 3°C
7	Max. Input Voltage	160 Vp-p at -40 to +25°C	Operating frequency: 55.5kHz; Pulse number: 20 pulses; Pulse interval: 80ms
		120 Vp-p at +25 to +85°C	
8	Operating Temperature (°C)	-40°C ~ +85°C	
9	Storage Temperature (°C)	-40 ~ +85°C	
10	Insulation Resistance	100M ohm min.	at 100V DC
11	Mean Time to Failure	50000H	Working conditions: Frequency 55.5kHz under normal temperature conditions The number of pulses is 20, and the pulse interval is 80ms.

Test Condition: T-25±3°C, H=45~75%R.H.

Mechanical Performance Parameter

Lead tensile strength: longitudinal traction of 24.9N.

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<u>Part No.</u>	<u>Rev</u>	<u>Title</u>	<u>Sheet No.</u>
TC0121-004	A2	Piezo Ultrasonic Sensor	2 of 6

Residual vibration, sensitivity test

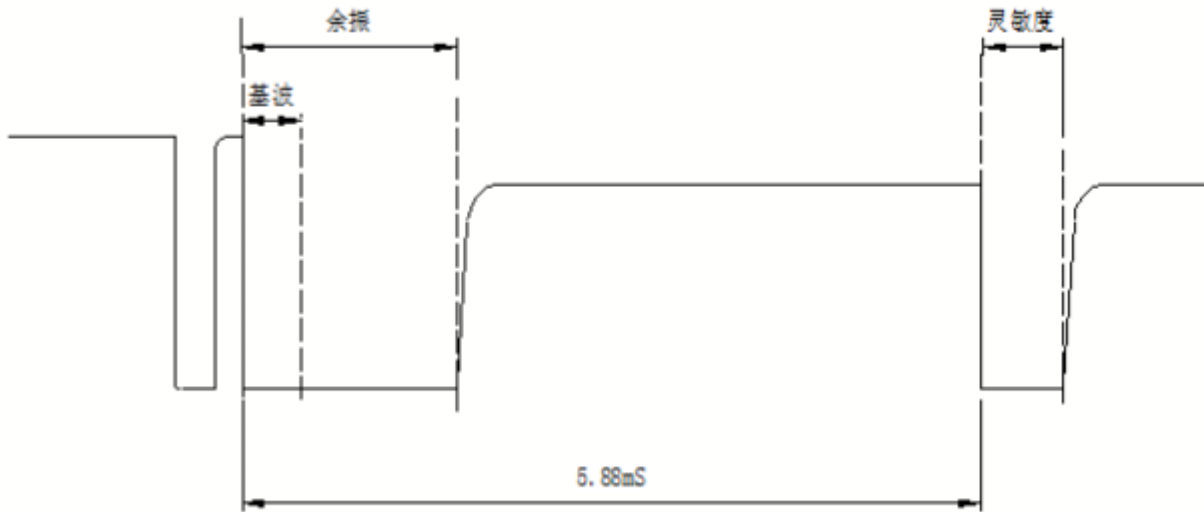
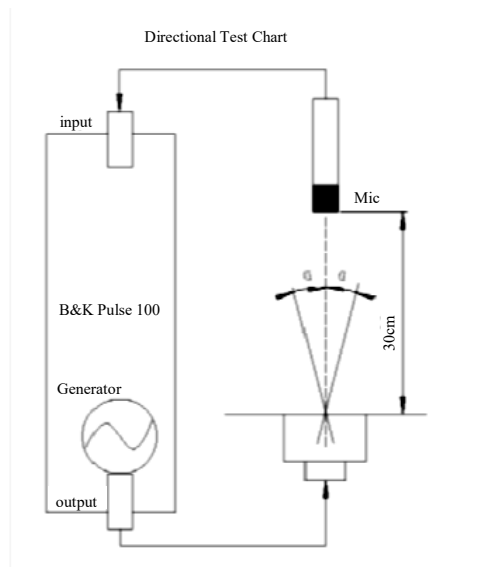


Fig. 1

Directivity test



1. Test conditions: 10Vrms/55.5kHz sine/30cm/
0dB=0.0002 μ bar
2. Test method: Select the rotation α angle, test a sound pressure value every 5 tests.
Sound pressure value
3. The main component is off the map

Fig. 2

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<u>Part No.</u>	<u>Rev</u>	<u>Title</u>	<u>Sheet No.</u>
TC0121-004	A2	Piezo Ultrasonic Sensor	3 of 6

Environment Characteristics

No.	Testing Items	Testing Equipment/Methods/Conditions	Standard Test
1	Impact Test	In the acceleration 980m / s 2 (100G), X, Y, Z three directions, Each direction impacted three times.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6mg (plus the fundamental wave)
2	Landing Test	Handheld products from a height of 1000 ± 10 mm; The concrete floor was subjected to 3 free fall tests.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave).
3	Vibration Test	The product is subjected to a frequency of 10~55Hz, and the amplitude is: 1.5mm, sweep rate: 1oct/min vibration test, X, Y, Z Three directions, 3 hours in each direction	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave)
4	Terminal pull	Apply a pulling force between the lead and the body 2.45N Time 30 seconds, test function and observe appearance.	The product functions normally and the leads are not damaged.
5	High Temperature storage	The product is stored at +85 ± 3 ° C for 1000 h, then Placed under normal temperature for 24 h	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave)
6	Low temperature storage	The product is stored at -40 ± 3 ° C for 1000 h, then Placed under normal temperature for 24 h.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave)
7	High temperature and humidity storage	The product has a temperature of +85 ± 3 ° C and a humidity of 85% RH. Stored under conditions of 1000h, then under normal temperature conditions Place for 24h	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave)
8	Thermal Shock	3.9KΩ resistor in parallel with both ends of the probe at -40°C±3°C Under the condition of 0.5h, heat up to + in 5 minutes Incubate for 0.5 h at 85 ° C ± 3, cycle 1000 times, Then, it was allowed to stand under normal temperature for 24 hours.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave).

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Part No. TC0121-004	Rev A2	Title Piezo Ultrasonic Sensor	Sheet No. 4 of 6
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Environment Characteristics, Continued

No.	Testing Items	Testing Equipment/Methods/Conditions	Standard Test
9	High Temperature power test pulse test	The product is at $+85\pm 3^{\circ}\text{C}$ and the voltage does not exceed 140Vp-p The number of pulses is 20, the interval time is 80ms, and the frequency is 55.5. Working at $\pm 0.5\text{KHz}$ for 118h, then at room temperature for 24 hours.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave).
10	Low temperature power test pulse test	The product is at $-40\pm 3^{\circ}\text{C}$, the voltage does not exceed 140Vp-p, pulse The number of impulses is 20, the interval is 80ms, and the frequency is 55.5. Working at $\pm 0.5\text{KHz}$ for 118h, then at room temperature for 24 hours.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave).
11	High temperature and high humidity	The product has a temperature of $85\pm 3^{\circ}\text{C}$ and a humidity of 85%RH, the voltage does not exceed 140Vp-p, the number of pulses is 20, The interval is 80ms and the frequency is $55.5\pm 0.5\text{KHz}$. Work under conditions of 375h, then put it under normal temperature conditions for 24h.	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave).
12	High and low temperature characteristics	The product is stable at an ambient temperature of $-40 \pm 3^{\circ}\text{C}$ 30min, warmed to $25\pm 3^{\circ}\text{C}$ and the temperature section was stable for 30min. Increased to $+85 \pm 3^{\circ}\text{C}$ temperature range stable 30min	The sensitivity change does not exceed the initial value 40%, the residual vibration does not exceed 2.6ms (plus the fundamental wave)

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Part No. TC0121-004	Rev A2	Title Piezo Ultrasonic Sensor	Sheet No. 5 of 6
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Product Specification

Notes:

1. Precautions

- This product can only be used in a gaseous environment and cannot be used in liquids.
- In order to prevent accidents from work failure, secondary products should be designed with anti-failure function
- If you want to add a casing to the product, separate it between the casing and the sensor with a soft rubber ring. In order not to affect the sensor the vibration, the front end of the sensor should remain free, otherwise the sensor performance will change.

Revision History:

Version	Date (MM/DD/YY)	DWN	Statement
A2	3/20/2017		Updated frequency and wire tolerances

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<u>Part No.</u>	<u>Rev</u>	<u>Title</u>	<u>Sheet No.</u>
TC0121-004	A2	Piezo Ultrasonic Sensor	6 of 6