



嘉康电子
JIAKANG ELECTRONICS

QJ-16924-79-2024

SPECIFICATION

OF PRODUCTS

CUSTOMER : RI011

PRODUCT NAME: ULTRASONIC TRANSDUCER

PART NUMBER : PSC200K018090H3KA0-B1

VERSION : 2.1

Approved by	Checked by	Drawn by
方 涛 2024.12.26	黄国华 2024.12.26	肖 龙 2024.12.26

ZHEJIANG JIAKANG ELECTRONICS CO., LTD.

Add: No.1188,Jiahang Road,Jiaxing, Zhejiang, China (314001)

Tel: +86-573-82600913 82600953

E-mail: sales88@jkelec.com

Approval Sheet	
Customer	RI011
Supplier P/N	PSC200K018090H3KA0-B1
Customer P/N	

Customer's Approval Certificate	
Checked & Approval by	
Date	

Version	Reason Of Modification	Modification	Drawn	Checked	Approval	Date
2.0	Customer requirements	Version change	肖龙	黄国华	方涛	2024.12.26
2.1	Correct errors	4.2Electrical Specifications	肖龙	黄国华	方涛	2025.01.09
2.1	Add content	4.1 Rating	肖龙	黄国华	方涛	2025.01.09

Please return this copy as a certification of your approval.

1 SCOPE

This product specification is applicable to PSC200K018090H3KA0-B1 ultrasonic transducer.

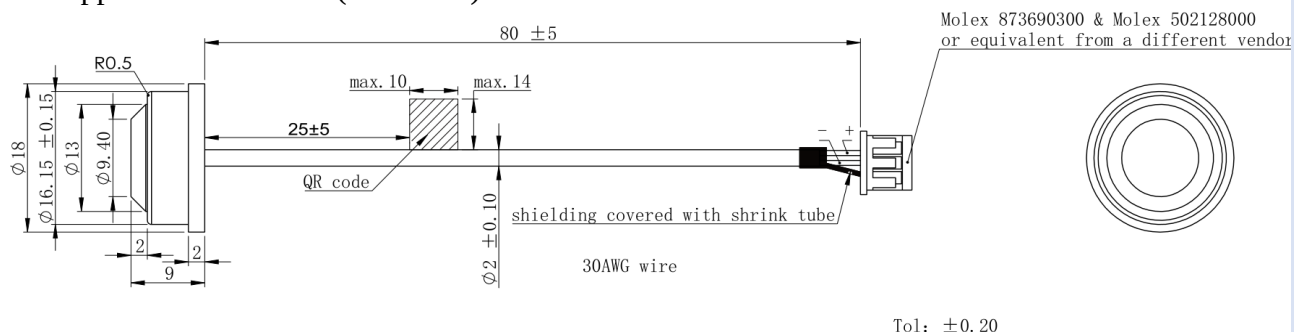
2 PART NO.

PART NUMBERING	CUSTOMER PART NO	SPECIFICATION NO
PSC200K018090H3KA0-B1		

3 OUTLINE DRAWING AND DIMENSIONS

3.1 Appearance: Clear markings, no damage or stains.

3.2 Appearance and Size (Unit: mm)



3.3 Product Reference Pictures



4 ELECTRICAL PERFORMANCE

4.1 Rating

Items	Unit	Content
Operating Temperature Range	°C	-35~70
Storage Temperature Range	°C	-40~85
Tolerate pressure	MPa	≤ 0.5
Working Voltage max.	V	36
Protection Class	—	IP65

4.2 Electrical Specifications

Items	Unit	Content
Center Frequency (Fc)	kHz	$200 \pm 4\%$
Resonance Impedance (Zr)	Ω	$200 \pm 40\%$
Static Capacitance (Cp)	pF	$2000 \pm 20\%$
Signal Sensitivity	mV	≥ 40
Effective bandwidth	kHz	± 10
Directive property	°	16.5 ± 1.5

5 ELECTRIC PERFORMANCE TEST

5.1 Test Conditions

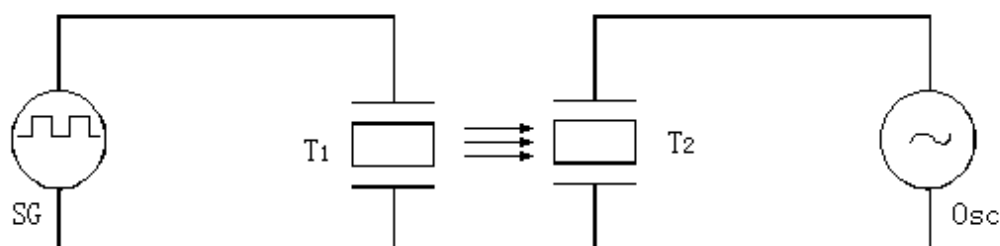
The test should be conducted at a temperature of 15°C ~ 25°C and a relative humidity of 40% ~ 75% R H. Conducted in the environment. When there is a dispute, it should be conducted in an environment with a temperature of 20°C $\pm 2^\circ\text{C}$ and a relative humidity of 55% $\pm 5\%$.

5.2 Test Methods

Item	Test Methods
Center Frequency (Fc)	Measuring radial vibration mode, Agilent 4294A Impedance analyzer /E5100 Network analyzer.
Resonance Impedance (Zr)	Measuring radial vibration mode, Agilent 4294A Impedance analyzer /E5100 Network analyzer.

Static Capacitance (C_p)	Digital Electric Bridge (at 1kHz/1V)
Signal Sensitivity	Standard signal source output voltage 20Vp-p, 10 pulses. Rated frequency square-wave, interval 3ms. Vertical distance of transducer emitter is 40mm. Horizontal ejection. The peak and peak of the oscilloscope receiving voltage .
Effective bandwidth	Method to test the sensitivity of a signal at intervals of 1 kHz to test the sensitivity of the signal for a trace point, taking the change within the range of -3 dB.

5.3 Schematic Diagram of Signal Output Amplitude Testing Circuit



SG—Square wave signal generator Osc—Oscilloscope
T1/T2—Ultrasonic transducer

6 ENVIRONMENTAL TEST

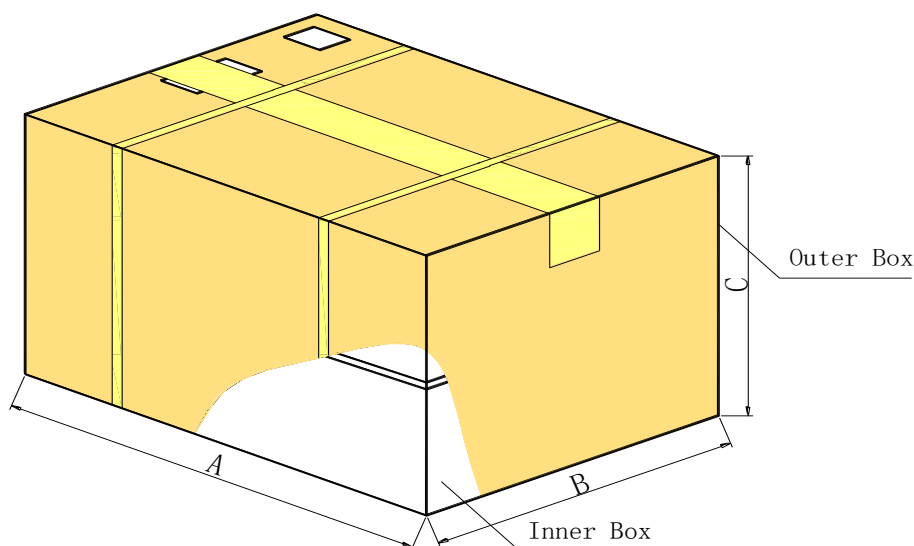
No.	Item	Test Condition	Post test requirements
6.1	High Temperature Exposure	The transducer is subjected to $(85 \pm 3) ^\circ\text{C}$ for $(500 \pm 1)\text{h}$, recover time:24h	Signal output amplitude change $\leq 30\%$
6.2	Low Temperature	The transducer is subjected to $(-40 \pm 3) ^\circ\text{C}$ for $(500 \pm 1)\text{h}$, recover time:24h	Signal output amplitude change $\leq 30\%$
6.3	Temperature Cycle	Subject the transducer to $(-40 \pm 2) ^\circ\text{C}$ for $(30 \pm 3)\text{min}$. followed by a high temperature of $(85 \pm 2) ^\circ\text{C}$ for $(30 \pm 3)\text{min}$ cycling shall be repeated 300 times. recover time:24h	Signal output amplitude change $\leq 30\%$
6.4	Humidity Test	The transducer is subjected to 92%~98% relative humidity , $60^\circ\text{C} \pm 2^\circ\text{C}$ for $(500 \pm 1)\text{h}$, recover time: 24h	Signal output amplitude change $\leq 30\%$

6.5	Vibration	Frequency:10Hz~500Hz;Amplitude:0.75mm/10G;duration:(2±0.1)h*(x,y,z direction).	Signal output amplitude change ≤30%
6.6	Free Fall	Drop the resonator randomly onto a wooden floor from the height of 1000mm 3 times.	Signal output amplitude change ≤30%

7 PACKAGE

In order to protect the product during storage and transportation, the packaging should meet the following requirements.

7.1 Packaging and Dimensions



A: 365mm; B: 320mm; C: 195mm

7.2 Packaging Quantity

Each outer box: 4 inner boxes

Each inner box: 10 plastic bags

Each plastic bag:20 transducers

Total quantity: 200 transducers

8 OTHER

8.1 The main composition of the transducer chip is lead zirconium titanate ceramics. Please pay attention to the local environmental protection regulations when the waste is abandoned.

8.2 This specification mentions the quality of the component as a single unit

under specified test 6.1 conditions. Please ensure the component is thoroughly evaluated in your application.

8.3 The wire of transducer, red for positive, white for negative, When in use, the white wire can be connected with the metal shell.

8.4 Please use the ultrasonic flow transducer inside the same plastic bag for assembly.

8.5 Please return one of these specifications after your signature of acceptance.

8.6 When something gets doubtful with this specification, we shall jointly work to get an agreement.

9 PART NUMBERING

The instructions for naming product number are shown in the table below.

PS	C	200K	018090	H3	KA0	—	B1
①	②	③	④	⑤	⑥		⑦

No.	Code	Code Description
①	PS	Ceramic transducer
②	C	Ultrasonic
③	200K	Nominal Frequency
④	018090	Size
⑤	H3	Ceramic Material Code
⑥	KA0	Special Requirement
⑦	B1	Box Package