



敏思传感技术有限公司

MinSi (Henan) Sensing Technology Co., Ltd.

产品承认书

SPECIFICATION

客户名称 CUSTOMER	
产品名称 PRODUCTION	超声波传感器
产品型号 MODEL	MS-US-18BS
版本号 VERSION NO	A2.0

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请妥善保管本说明书, 以便在您日后需要时能及时查阅并获得帮助。

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A. SCOPE

This specification applies Ultrasonic Sensor MS-US-18BS

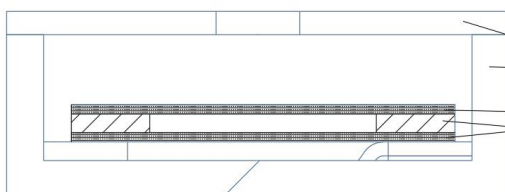
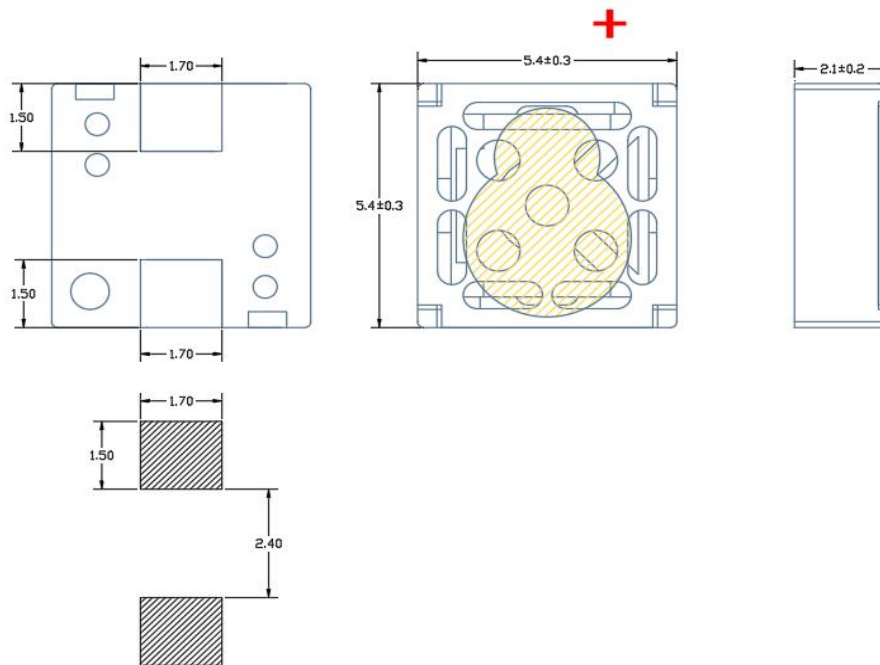
B. SPECIFICATION

1	Center frequency(KHz)	40 ± 1.0 KHz	
2	Receiving sensitivity (dB)	≥ -65 at 40KHz 6Vp-p/15cm/ 0dB=1V/Pa	
3	SPL (dB)	≥ 95 at 40KHz	6Vp-p 15cm 0dB=20uPa
4	Directivity (deg)	60°	
5	Capacitance (pF)	$4500 \pm 20\%$	
6	Max. input voltage(Vp-p)	10Vp-p	
7	Housing Material	304 stainless steel / LCP	
8	Operating temperature $^\circ\text{C}$	$-20 \sim +70$	
9	Storage temperature $^\circ\text{C}$	$-30 \sim +75$	

C. APPEARANCE DRAWING

Tol : ± 0.5

Unit: mm



NO	Part name	Material	Quantity
1	House	plastic	1
2	Dustcover	steel	1
3	Oscillating plate	PZT	2
4	Gasket	Epoxy	1

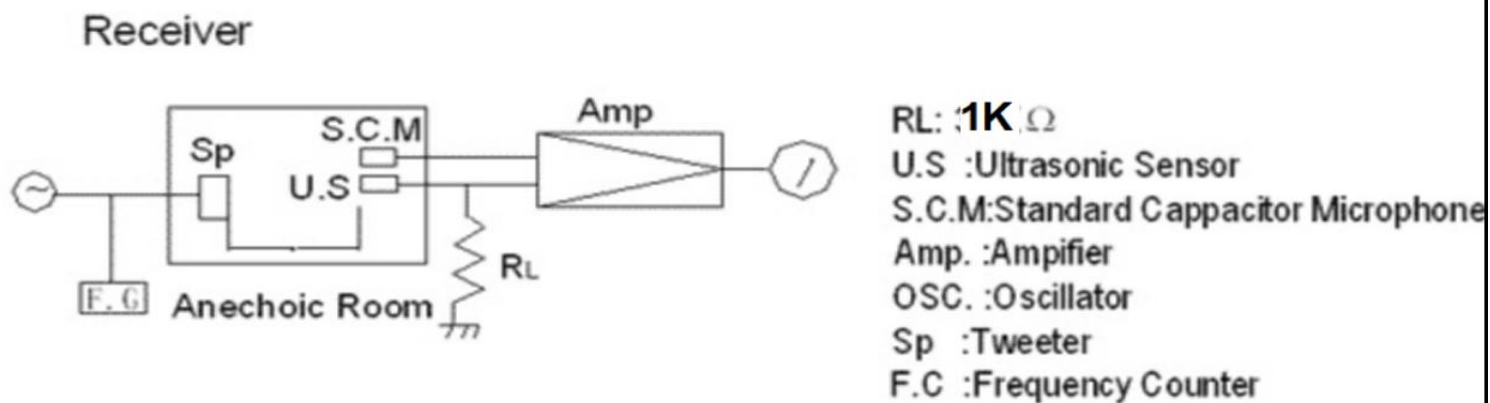
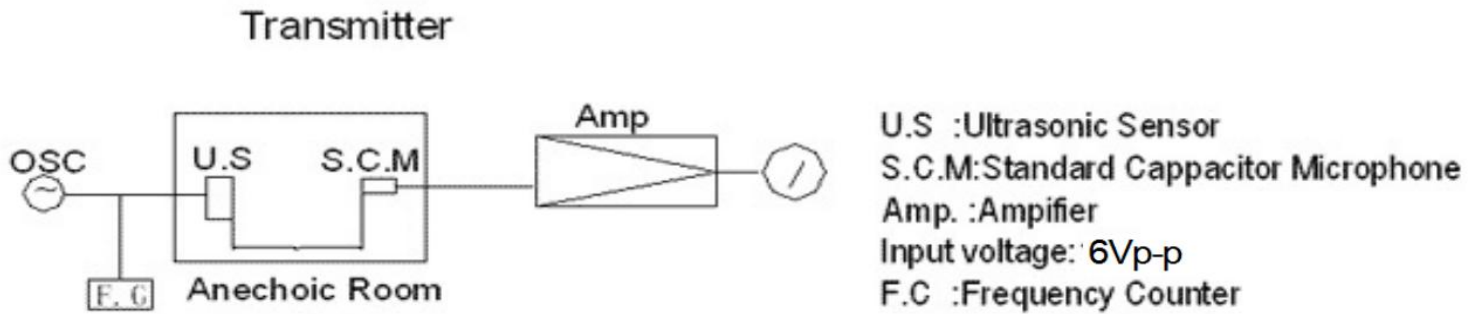
D.TESTING METHOD

Standard Measurement conditions

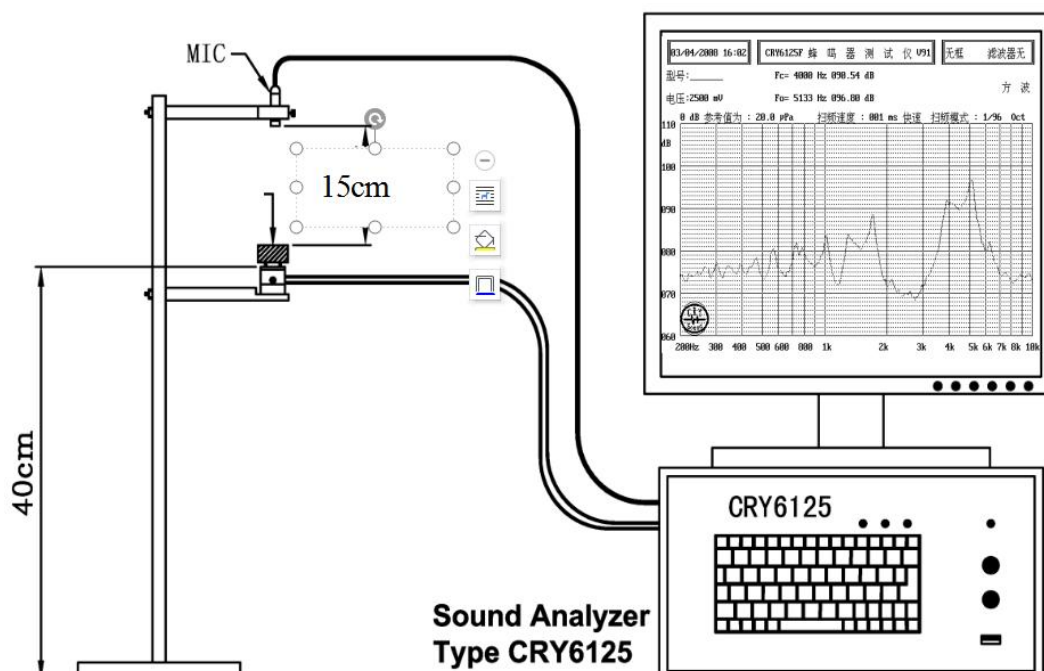
Temperature: $25 \pm 2^\circ\text{C}$ Humidity: 45-65%

Acoustic Characteristics:

The oscillation frequency, current consumption and sound pressure are measured by the Measuring instruments shown below

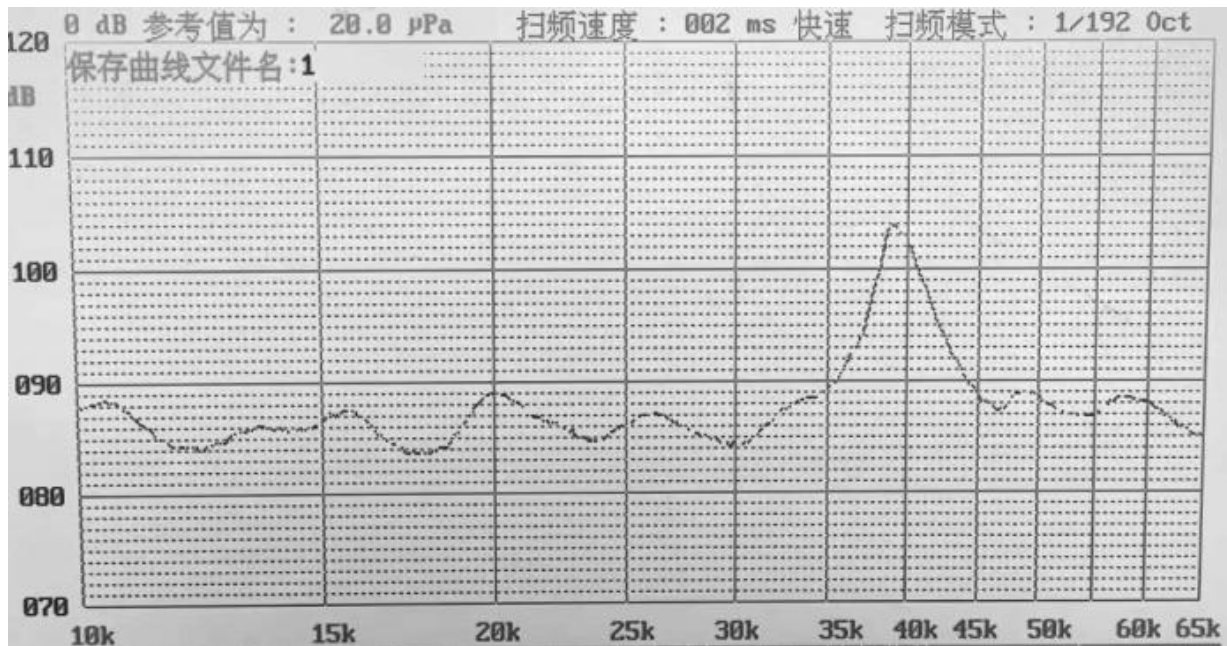


In the measuring test, Sensor is placed as follows:

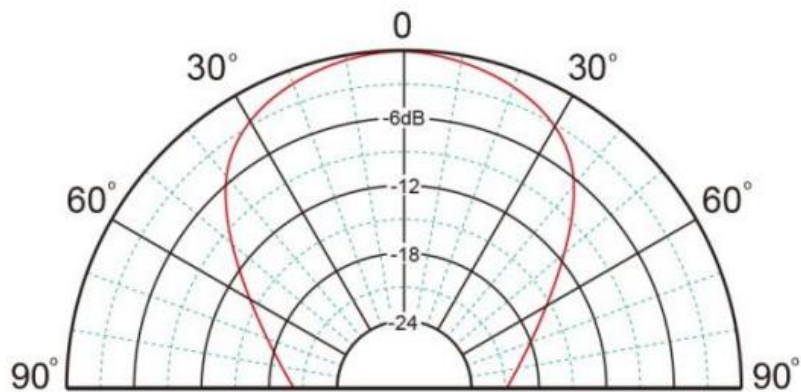
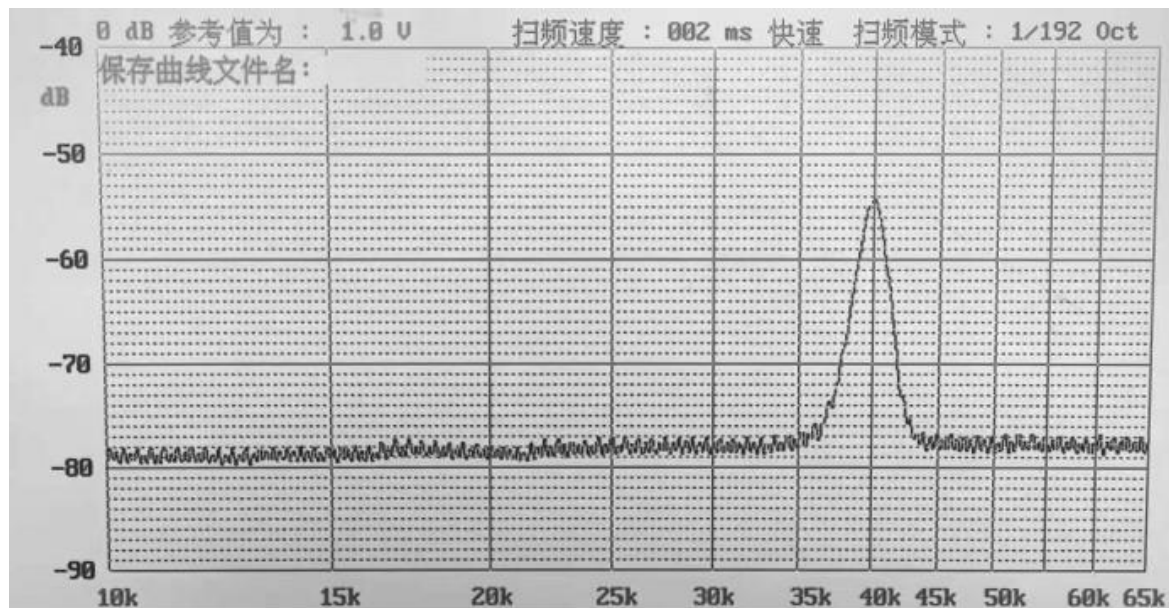




SPL- Frequency



Sensitivity- Frequency





E. RELIABILITY TEST

NO.	ITEM	TEST CONDITION AND REQUIREMENT
1	High Temperature Test (Storage)	After being placed in a chamber with $75 \pm 2^\circ\text{C}$ for 96 hours and then Being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$.
2	Low Temperature Test (Storage)	After being Placed in a chamber with $30 \pm 2^\circ\text{C}$ for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$.
3	Humidity Test	After being Placed in a chamber with 90-95% R.H. at $40 \pm 2^\circ\text{C}$ for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$.
4	Temperature Cycle Test	The part shall be subjected to 5 cycles. One cycle shall be consist of: Allowable variation of SPL after test: $\pm 10\text{dB}$.
5	Drop Test	Drop on a hard wood board of 4cm thick, any directions, 6 times, at the height of 75cm. Allowable variation of SPL after test: $\pm 10\text{dB}$.
6	Vibration Test	After being applied vibration of amplitude of 1.5mm with 10 to 55 Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$.
7	Solderability Test	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of $300 \pm 5^\circ\text{C}$ for 3 1 seconds. 90% min. lead terminals shall be wet with solder Allowable variation of SPL after test: $\pm 10\text{dB}$.
8	Terminal Strength Pulling Test	The force of 9.8N(1.0kg) is applied to each terminal in axial direction for 10 seconds. Allowable variation of SPL after test: $\pm 10\text{dB}$.

TEST CONDITION.

Standard Test Condition	:	a) Temperature : $+5 \sim +35^\circ\text{C}$	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般测试条件	:	a) 温度 : $+5 \sim +35^\circ\text{C}$	b) 湿度 : 45-85%	c) 气压 : 860-1060mbar
Judgment Test Condition	:	a) Temperature : $+25 \pm 2^\circ\text{C}$	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
争议时测试条件	:	a) 温度 : $+25 \pm 2^\circ\text{C}$	b) 湿度 : 60-70%	c) 气压 : 860-1060mbar

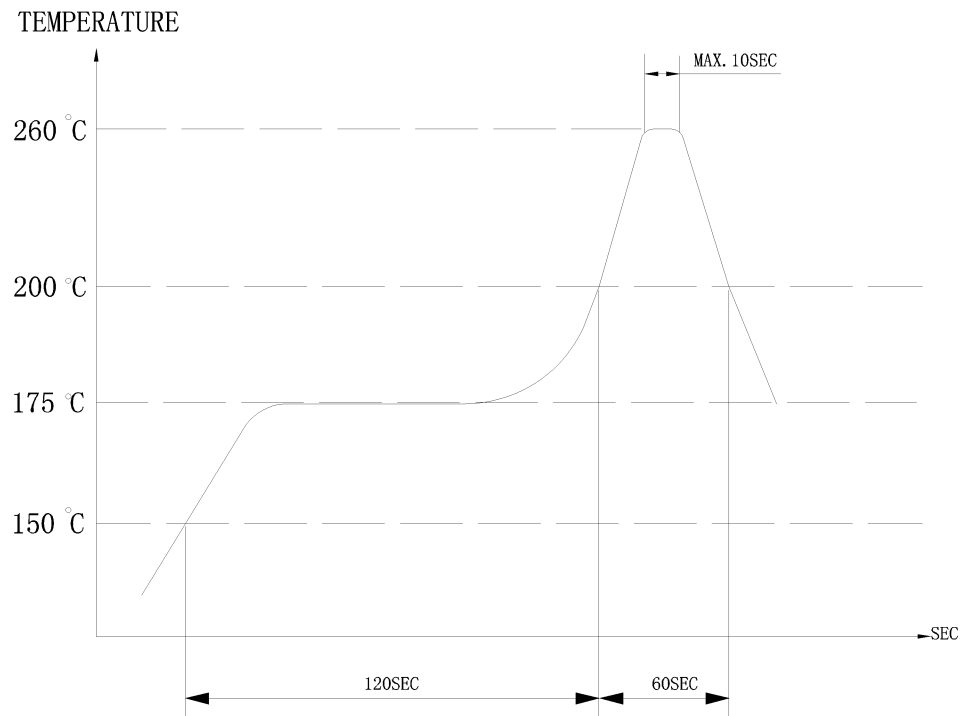


F. Soldering Condition

(1)Recommendable reflow soldering condition is as follows

(Reflow soldering is twice)

Note:It is requested that reflow soldering should be executed after heat of product goes down to normal.



Heat resistant line

(Used when heat resistant reliability test is performed)

(2)Manual soldering

Manual soldering temperature 350 °C within 5 sec.



G. PACKING STANDARD

