Content

Revision

The first version.

1 Applications

Mainly used for ultrasonic ranging, smoke detector, parking system, robot R&D, liquid level measurement and so on.

2 Features

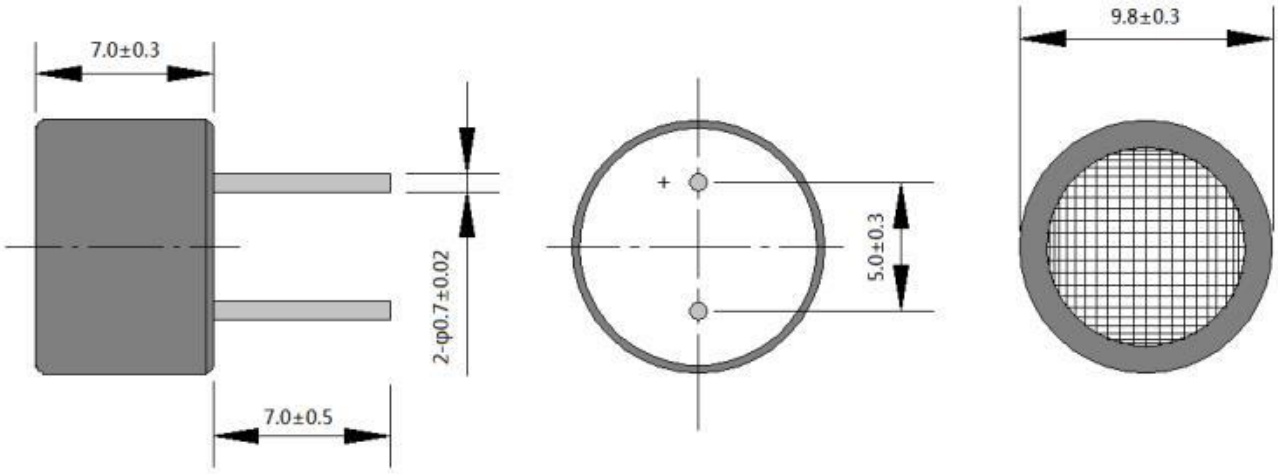
2.1 Dual Use:Transmitter/Receiver
2.2 Compact and light weight.
2.3 High sensitivity and sound pressure
2.4 Less power consumption
2.5 High reliability

3 Technical Specifications

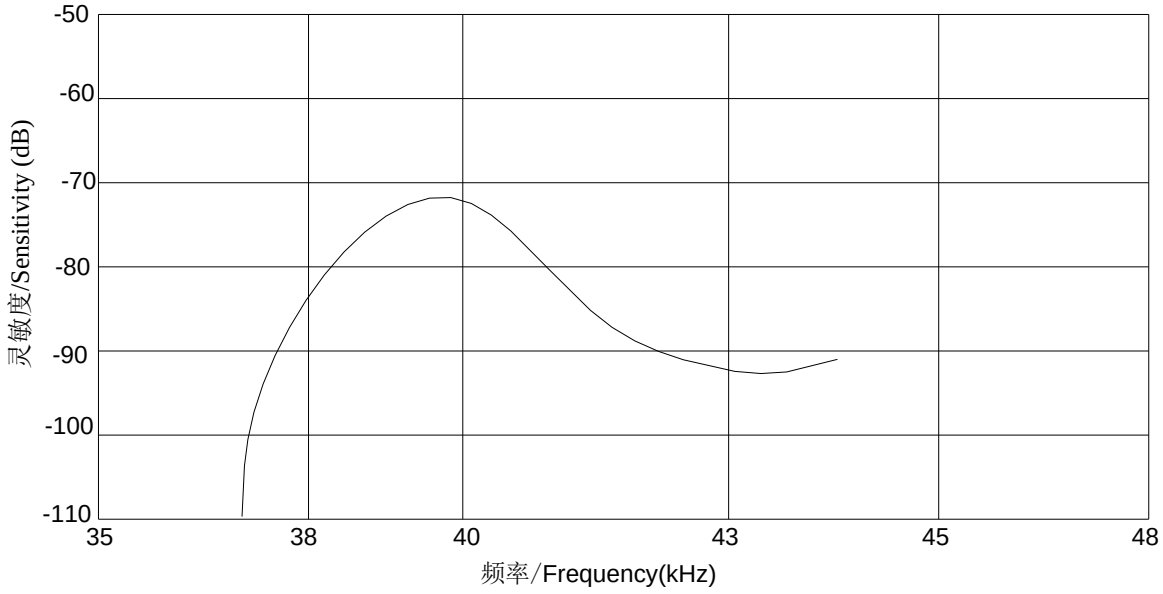
Item	Value
Using method	Transmitter/Receiver
Nominal Frequency	40±1.0KHZ
Sensitivity	≥-75dBV/μMbar
S P L	≥105dB (10V/30cm/sine wave)
Directivity	80deg
Capacitance	2000pF±25%@1KHz
Detectable range	0.2~15m
Operating Temperature	-20~ +80℃
Response time for receiver	Max 1.6
Housing material	Aluminum
Weight	0.74g

3 Mechanical Drawing

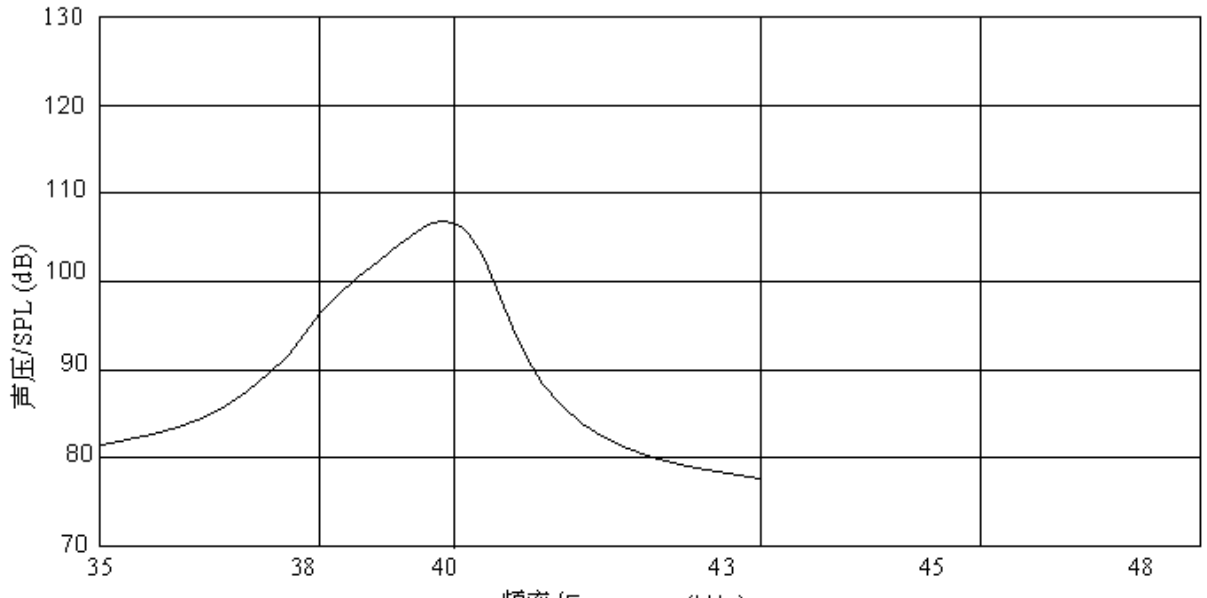
unit: mm



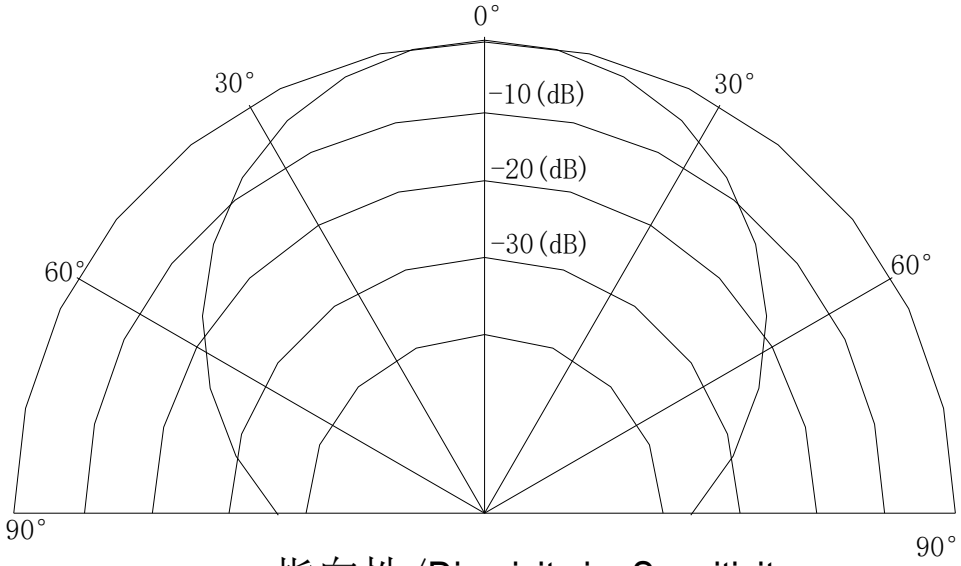
5 Beam Pattern



灵敏度-频率特性图/Sensitivity-Freq.Characteristics



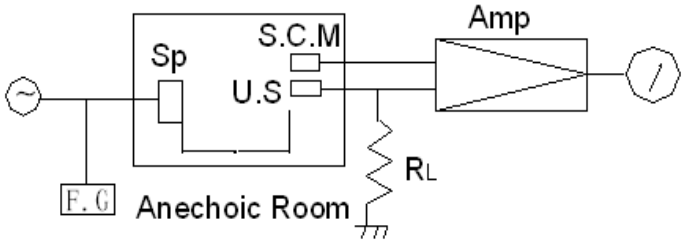
声压-频率特性图/SPL-Freq.Characteristics



指向性/Direcivity in Sensitivity

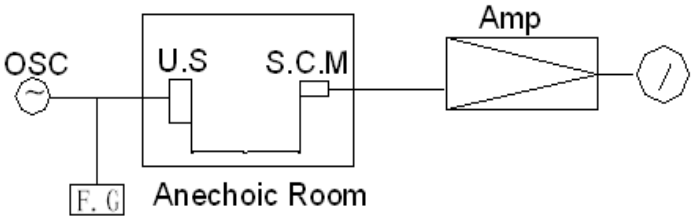
6 Test Circuit

Receiver



RL: 3.9KΩ
U.S :Ultrasonic Sensor
S.C.M:Standard Cappacitor Microphone
Amp. :Ampifier
OSC. :Oscillator
Sp :Tweeter
F.C :Frequency Counter

Transmitter



U.S :Ultrasonic Sensor
S.C.M:Standard Cappacitor Microphone
Amp. :Ampifier
Input voltage:10Vrms
F.C :Frequency Counter

7 Reliability Test

7.1 High Temp. Life Test

Temperature	+85±3℃
Duration	100 hrs

7.2 Low Temp. Life Test

Temperature	-40±3℃
Duration	100 hrs

7.3 Heat Cycle Test

Temperature	+85±3℃ 1hour
	-40±3℃ 1hour
Cycles	10 cycles

7.4 Humidity Test

Temperature	+60±2℃
Relative Humidity	90～95%
Duration	100 hrs

7.5 Vibration Test

Vibration Frequency	10～55Hz
Sweep Period	1.5 min
Direction	x,y&z
Time	2 hours/direction

7.6 Shock Test

Acceleration	sine 100G
Direction	x,y&z
Shock Time	3 times/direction

7.7 Drop Test

Height	1 m on concrete floor
Times	2 times

7.8 Connector Soldering Check:

Immersing terminal up to 1mm below in soldering bath at 260℃ 10 Seconds.

Notice:

The variation of the S.P.L or the sensitivity at 40KHz is within 2dB compared with initial figures at 25℃ in 24 hours after above test conditions.

8 Caution in Use

8.1 Please avoid applying an excessive stress to the transducer because it might be damaged.

8.2 The transducer may generate surge voltage by mechanical or thermal shock. Care should be taken to protect from it in designing your application circuit.

8.3 Please do not apply DC voltage to the transducer.

8.4 Please do not use the transducer in water.

8.5 The piece of sensor may be damaged by force pressure from back of sensor.

8.6 Please well evaluate the painting and electrical characteristic for your coating.

8.7 When used to distinguish between positive and negative.

9 Note

9.1 please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.

9.2 You are requested not to use our product deviating from the agreed specifications.

9.3 We consider it not appropriate to include any terms and conditions with regard to the business transaction in the product specifications, drawings or other technical documents.

10 Packaging Details