

	Product Specification
Model: ISTO-A1640H10R	RoHS
Revision: original version	Effective Date: 2016-08-16
Customer:	Page 1 of 6

Content

	page
Revision	1
1 Applications.....	1
2 Features.....	1
3 Technical Specifications.....	1
4 Mechanical Drawing	2
5 Beam Pattern	2
6 Test Circuit	3
7 Reliability Test.....	4
8 Caution in Use.....	5
9 Note.....	5
10 Packaging Details.....	6

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 Receiver: "R" mark on housing
- 2.2 Compact and light weight
- 2.3 High sensitivity
- 2.4 Less power consumption
- 2.5 High reliability



3 Technical Specifications



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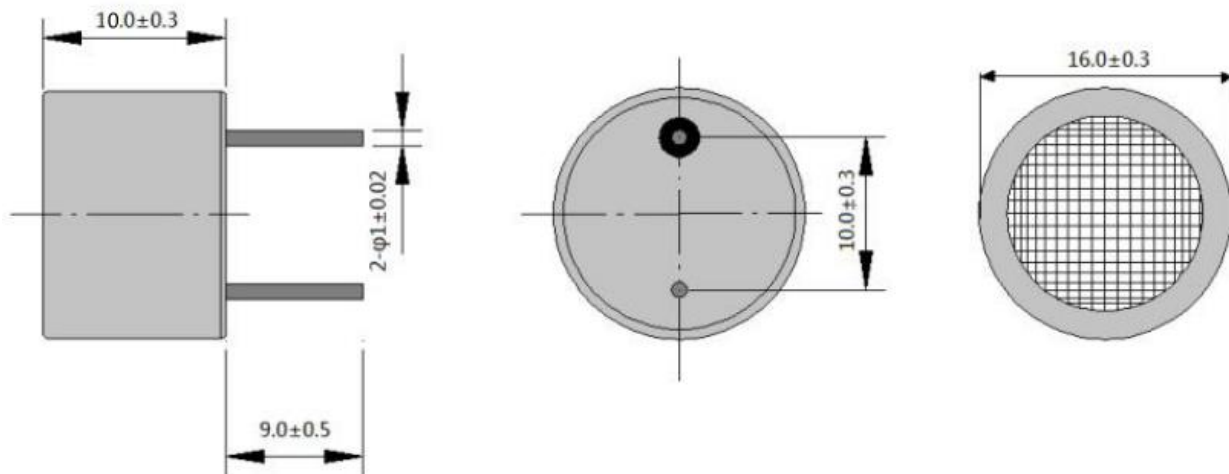
Customer:

Page 2 of 6

Item	Value
Using method	Receiver
Nominal Frequency	$40 \pm 1.0\text{KHz}$
Sensitivity	$\geq -68\text{dBV}/\mu\text{Mbar}$
Directivity	80deg
Capacitance	$2200 \pm 20\% @ 1\text{KHz}$
Allowable input voltage	150Vp-p(40KHz)
Detectable range	0.2~18m
Operating Temperature	-20~ +70°C
Housing material	Aluminum
Weight	2.31g

4 Mechanical Drawing

units:mm



5 Beam Pattern



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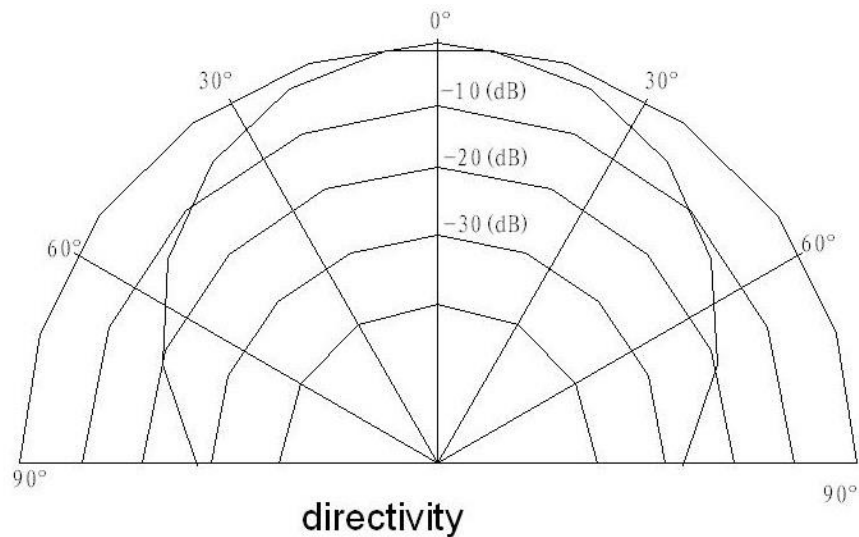
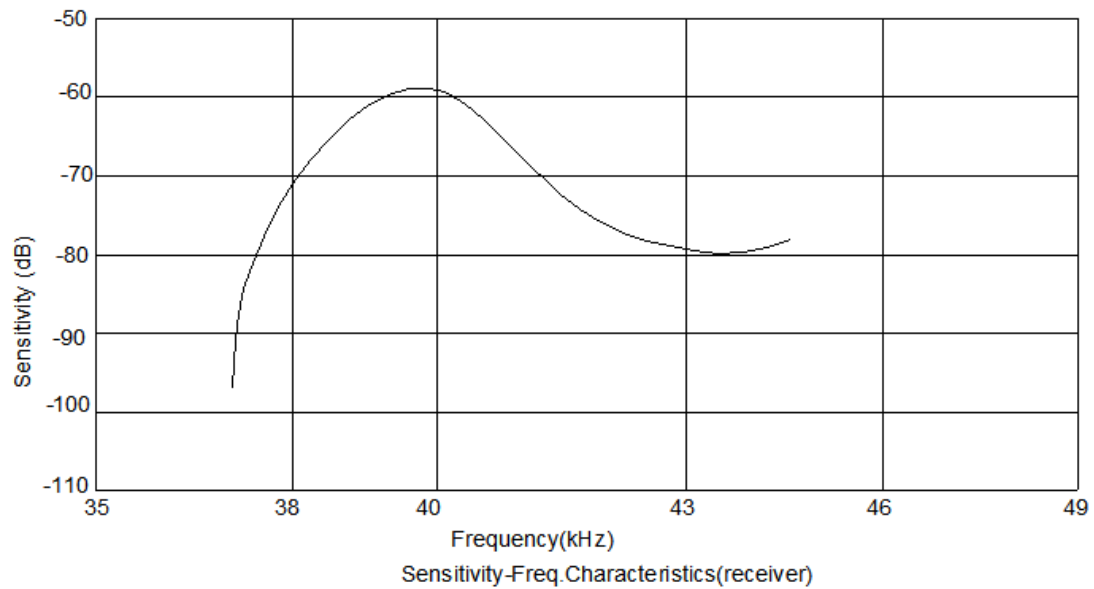
RoHS

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Customer:

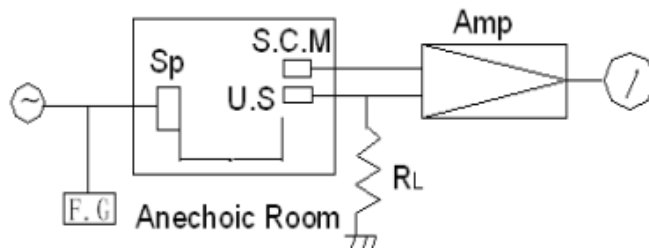
Page 3 of 6



6 Test Circuit

	Product Specification
Model: ISTO-A1640H10R	RoHS
Revision: original version	Effective Date: 2016-08-16
Customer:	Page 4 of 6

Receiver



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

7 Reliability Test

- 7.1 High Temp. Life Test
 - Temperature $+85 \pm 3^{\circ}\text{C}$
 - Duration 100 hrs
- 7.2 Low Temp. Life Test
 - Temperature $-40 \pm 3^{\circ}\text{C}$
 - Duration 100 hrs
- 7.3 Heat Cycle Test
 - Temperature $+85 \pm 3^{\circ}\text{C}$ 1hour
 - $-40 \pm 3^{\circ}\text{C}$ 1hour
 - Cycles 10 cycles
- 7.4 Humidity Test
 - Temperature $+60 \pm 2^{\circ}\text{C}$
 - 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°C 10

	Product Specification
Model: ISTO-A1640H10R	RoHS
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Customer:	Page 5 of 6

Seconds.

Notice:

The variation of the sensitivity at 40KHz is within 2dB compared with initial figures at 25°C 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.

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Revision: original version	Effective Date: 2016-08-16
Customer:	Page 6 of 6

10 Packaging Details

