

	Product Specification
Model: ISTO-A1640H12TR	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 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



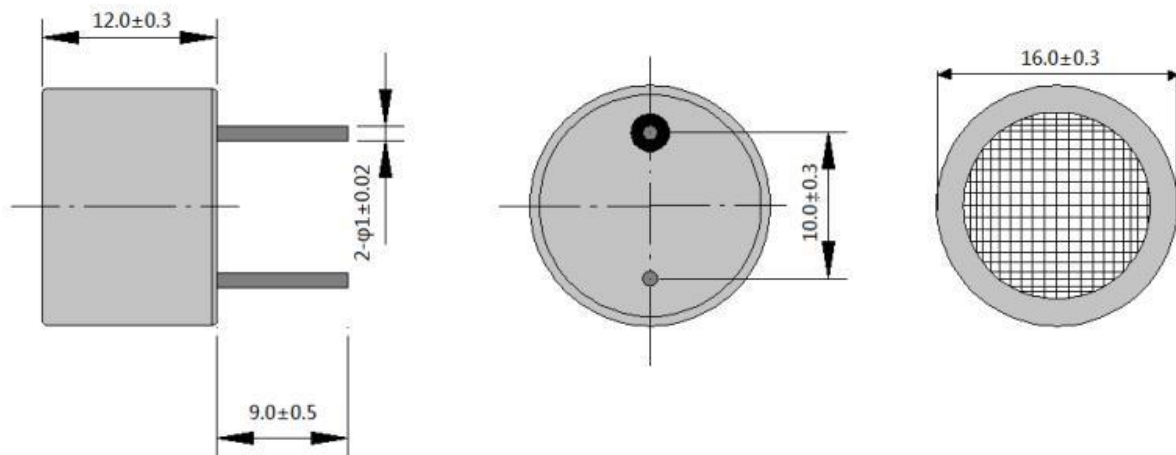
3 Technical Specifications

	Product Specification
Model: ISTO-A1640H12TR	RoHS
Revision: original version	Effective Date: 2016-08-16
Customer:	Page 2 of 6

Item	Value
Using method	Transmitter/Receiver
Nominal Frequency	40±1.0KHZ
Sensitivity	≥-68dB
S P L	≥115dB(10V/30cm/sine wave)
Directivity	80deg
Capacitance	2400pF±20%@1KHz
Detectable range	0.2~18m
Allowable input voltage	120Vp-p(39KHz)
Operating Temperature	-20~ +70℃
Ringing	Max 2.8ms
Housing material	Aluminum
Weight	2.31g

4 Mechanical Drawing

unit: mm



5 Beam Pattern



Product Specification

Model: ISTO-A1640H12TR

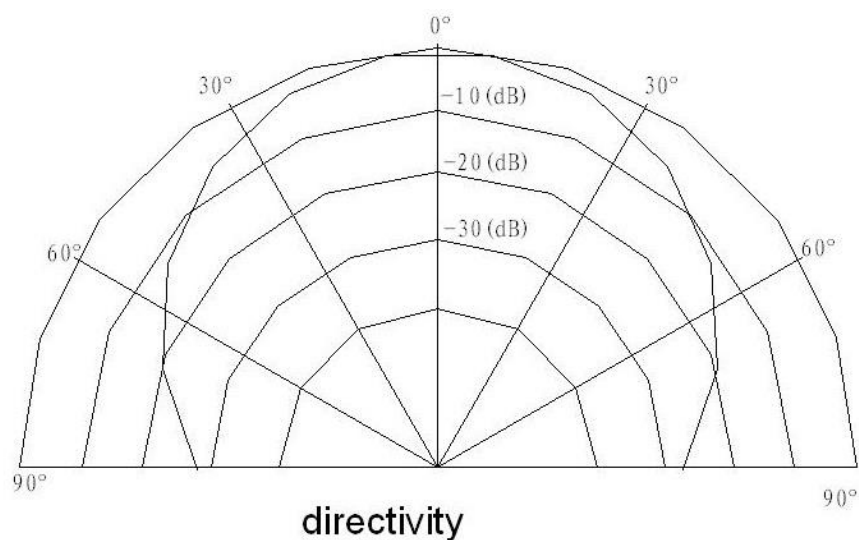
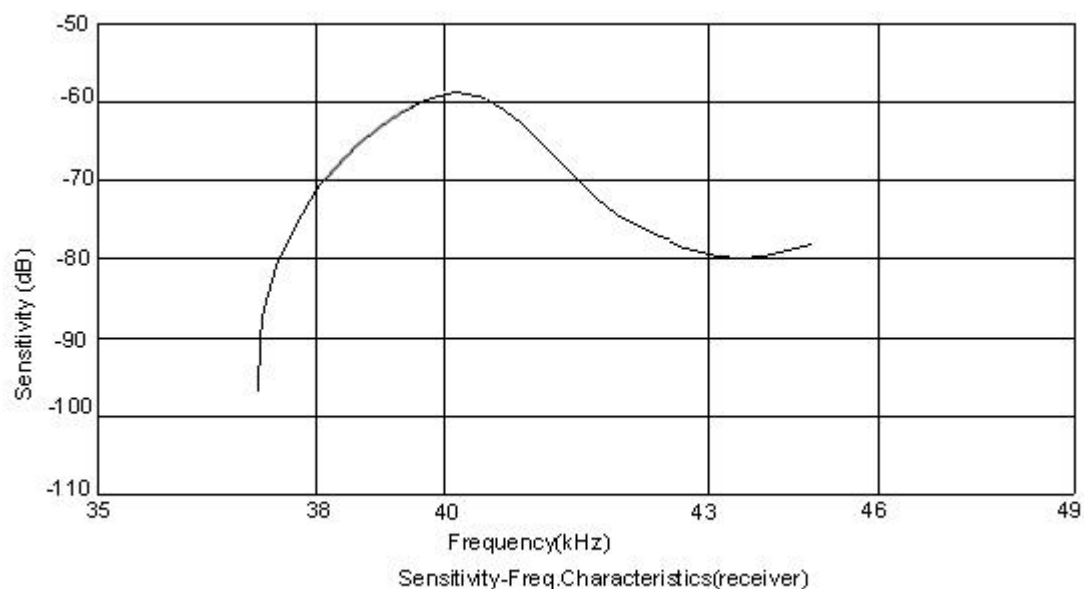
RoHS

Revision: original version

Effective Date: 2016-08-16

Customer:

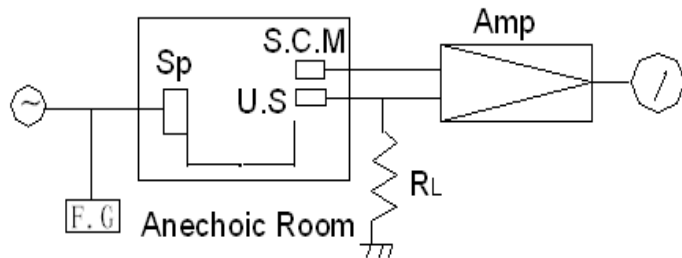
Page 3 of 6



6 Test Circuit

	Product Specification
Model: ISTO-A1640H12TR	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

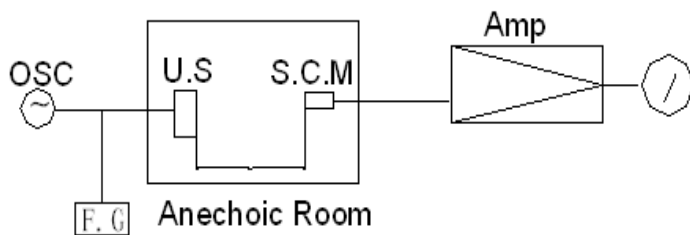
Amp. :Amplifier

OSC. :Oscillator

Sp :Tweeter

F.C. :Frequency Counter

Transmitter



U.S. :Ultrasonic Sensor

S.C.M:Standard Cappacitor Microphone

Amp. :Amplifier

Input voltage:10Vrms

F.C. :Frequency Counter

7 Reliability Test

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



Product Specification

Model: ISTO-A1640H12TR

RoHS

Revision: original version

Effective Date: 2016-08-16

Customer:

Page 5 of 6

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
Seconds.	

Notice:

The variation of the S.P.L or 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.

	Product Specification
Model: ISTO-A1640H12TR	RoHS
Revision: original version	Effective Date: 2016-08-16
Customer:	Page 6 of 6

10 Packaging Details

