Ultrasonic Sensor
Transceiver

Application

This specification covers the water proof type ultrasonic ceramic transducer which are used for receiver and transmitter of ultrasonic waves.

Features

- Water proof and dual use
- Compact and light weight
- High sensitivity and sound pressure
- Less power consumption
- High reliability

Specifications

Construction	: Water Proof
Using Method	: Dual Use
Centre Frequency	: 48 ±1kHz
Sound Pressure Level (dB)	: ≥90 (30cm/10V rms)
Sensitivity (dB)	: ≥-90dB/V/µbar
Beam pattern	: 110 × 50°
Capacitance (pF)	: 2,500 ± 25% at1kHz
Operating Temperature Range	: -40°C to +85°C
Storage Temperature Range	: -40°C to +85°C
Allowable Input Voltage (Vp-p)	: 160Vp-p
Housing Material	: Aluminium

Diagram

Aluminum case surface

6±0.1

9±0.1

Lead wire

AWG30 Red, Black
connector pitch 2mm

30 ±5

Red   Black

12±0.1

14±0.1
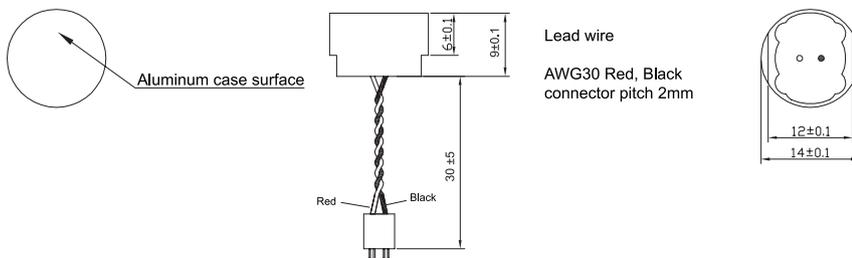
Dimensions : Millimetres

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Crimp Information

SPH-002T crimp

Contact

5.7(.224)
2.85(.112) 2.05(.081)
1.0 (.039)
2.08 (.082)
1.5 (.059)
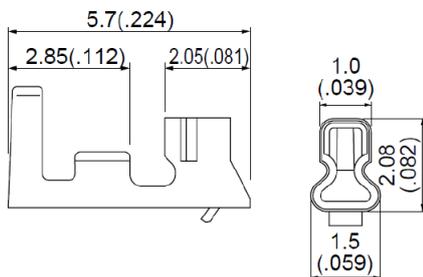
| Part Number	Applicable Wire		
	mm²	AWG	Insulation O.D (mm)
SPH-002T-P0.5S	0.05 to 0.22	30 to 24	0.9 to 1.5
Material and Finish			
Phosphor Bronze, Tin-Plated			

Housing

B
1.9 (.075)
A
2.0 (.079)
Circuit No.1
0.5 (.020)
4.5(.177)
6.35(.250)
□0.6(.024)
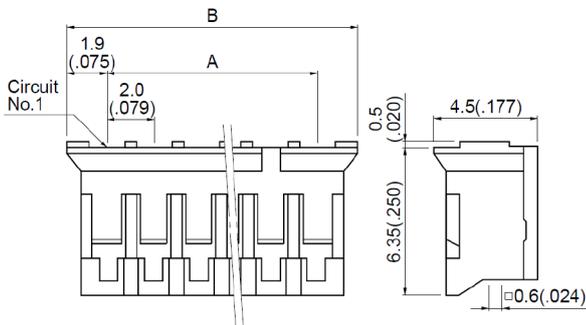
Circuts	Dimension (mm)	
	A	B
2	2	5.8
Material and Finish		
Nylon 66, UL94V-0, Natural (white)		

Dimensions : Millimetres

Beam Pattern:
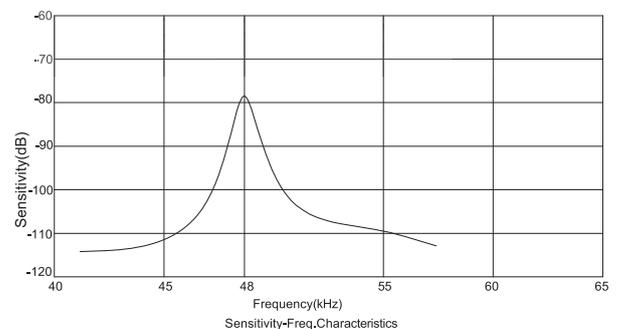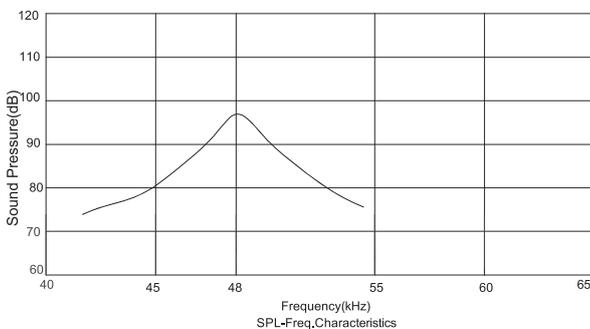

SPL-Freq.Characteristics

Sensitivity-Freq.Characteristics

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Direcivity in Overall Sensitivity
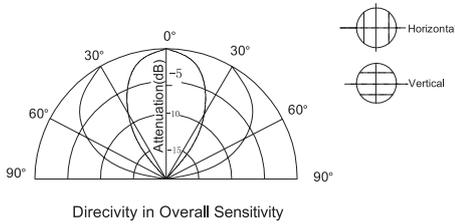
Test Circuit:

S.P.L test circuit
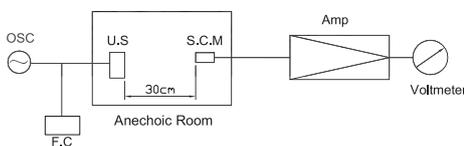
OSC.   : Oscillator
F.C   : Frequency Counter
U.S   : Ultrasonic Sensor
S.C.M   : Standard Capacitor Microphone
Amp.   : Amplifier

sensitivity test circuit
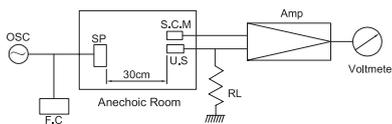
OSC.   : Oscillator
F.C   : Frequency Counter
U.S   : Ultrasonic Sensor
S.C.M   : Standard Capacitor Microphone
Amp.   : Amplifier
SP   : Tweeter
RL   : 3.9kΩ

Echo&Rest.Resonant Time test circuit
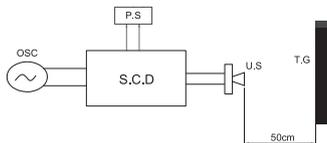
OSC   : Oscillator
P.S   : Power supply
S.C.D   : Special circuit diagram
U.S   : Ultrasonic Sensor
T.G   : Target

Part Number Table

Description	Part Number
Transceiver, 48kHz, 14mm, Metal	MCUSD14A48S09RS-30C

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