

A. Scope

This specification applies ultrasonic sensor T/R4010FBP

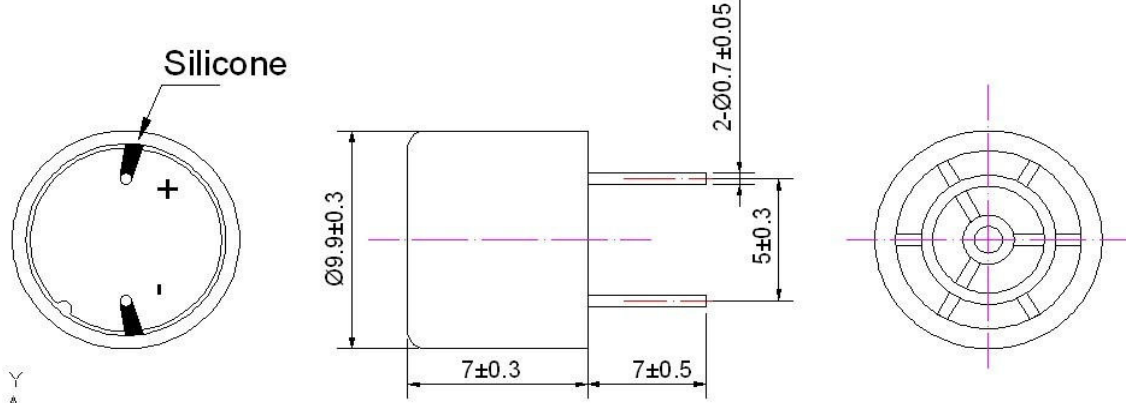
B. Characteristics

- 1) Open structure and dual use
- 2) Compact and light weight
- 3) High sensitivity and sound pressure
- 4) Less power consumption
- 5) High reliability
- 6) RoHS compliance

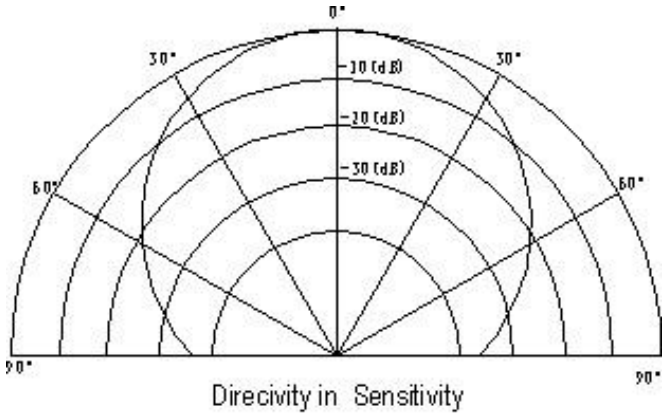
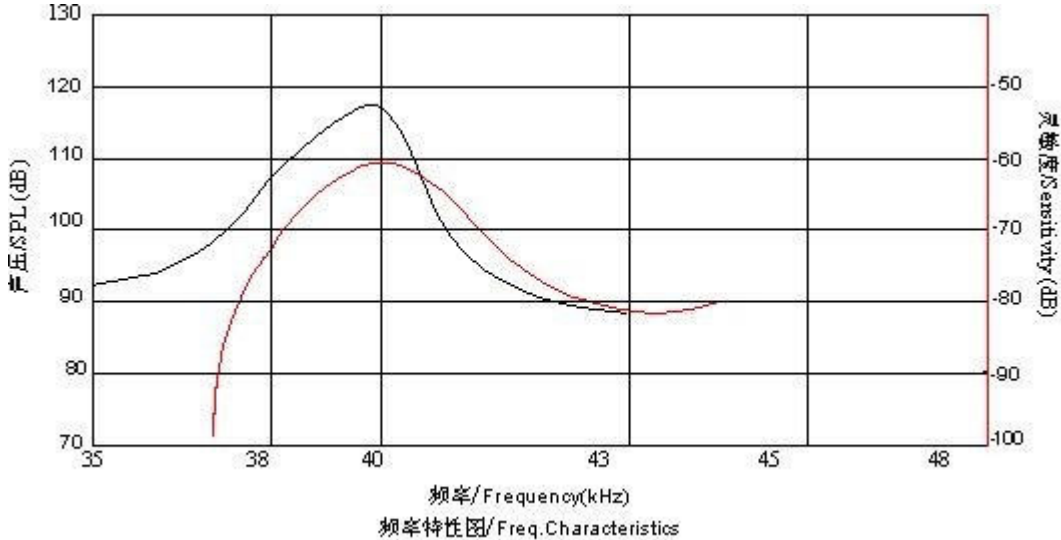
C. Technical terms

No.	Item	Unit	Specification
	Allowable input voltage	Vrms	30(at 100kHz)
1	Construction		Open
2	Using method		dual
3	Nominal Frequency	Hz	40k
4	S P L	dB	≥ 100 (10V/30cm/sine wave)
5	Sensitivity	dBV/ μ Bar	≥ -70
6	Directivity	deg	70
7	Capacitance	pF	2550 \pm 30%@1KHz
8	Detectable range	m	0.2...6
9	Ringing time	mS	1.5
10	Housing material		ABS (black)
11	Operating Temperature	$^{\circ}$ C	-30....+85
12	Weight	g	0.7

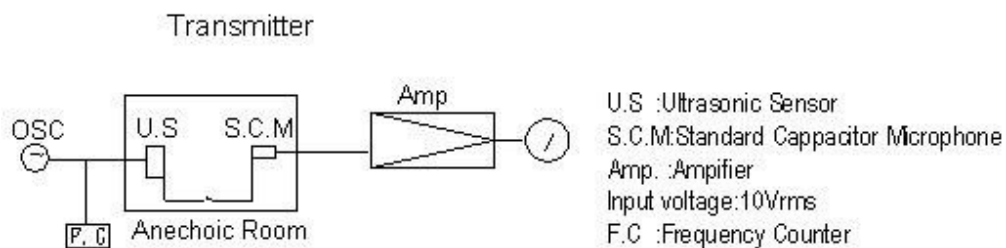
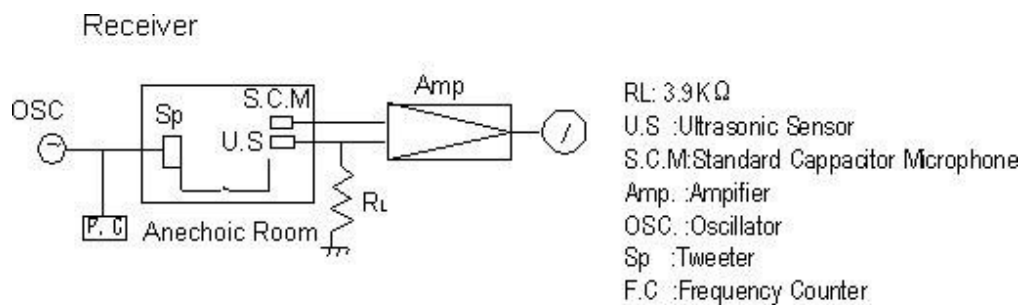
D .Drawing



E. Beam Pattern



F. Test Circuit



G. Reliability test

ITEMS METHOD OF TEST AND MEASUREMENTS	PERFORMANCE	
Coldness withstanding	<i>After 96 hours of being exposed to -30°C environment, should be returned to normal environment(25°C) for 2 hours, then re-proceed to test.</i>	<i>All sensitivity or sound output level should not change more than +/-3 dB</i>
<i>Humidity After 96 hours of being exposed to +80°C environment, should be returned to normal environment(25°C) for 2 hours, then re-proceed to test. withstanding Hotness withstanding</i>	<i>After 96 hours of being exposed to 25°C 10%~90%RH environment . sensitivity or sound output level should not change more than 6 dB in the humidity range</i>	<i>All sensitivity or sound output level should not change more than +/-3 dB</i>
Durability	<i>Testing after 1,000 hours actual continuous operation. (at standard measurement conditions)</i>	<i>All sensitivity or sound output level should not change more than +/-3 dB</i>
Drop withstanding	<i>A natural drop from 75cm high down to the ground.(surface of 10mm thick wooden board)</i>	
Solderability Test	Lead terminals are immersed in rosin for 3 seconds and then immersed in solder bath of +280 ±5°C for 3 ±1 seconds . 90% min. lead terminals shall be wet with solder (Except the edge of terminals).	

H. Notes

■ Design restriction/ Precautions

- 1. This sensor is designed for use in air environment. Do not use it in liquid.**
- 2. In the case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe to the design.**
- 3. In the case where this sensor is to be shocked or impacted, fit a “V” wave-guide on the sensor, which also is to improve receiving sensitivity.**

■ Usage restriction/ Precautions

- 1. To prevent sensor malfunction, operational failure or any deterioration of its characteristics, do not use this sensor in the following, or similar conditions:**
 - a) In strong shock or vibration.**
 - b) In high temperature and humidity for a long time.**
 - c) In corrosive gases or sea breeze.**
 - d) In an atmosphere of organic solvents.**
 - e) In dirty and dusty environments that may contaminate the sensor front.**
 - f) Over specified allowable input voltage.**
- 2. Do not solder adding stress on outer lead, also do not apply stress like spin or pressure just after soldering. In case you form the leads, support the root firmly.**

■

Warranty

Time limit

Warranty period is 12 months after delivery.

Scope

Defective sensors attributable to manufacturer's responsibility shall be replaced for free during the warranty period. However, following cases are out of the scope.

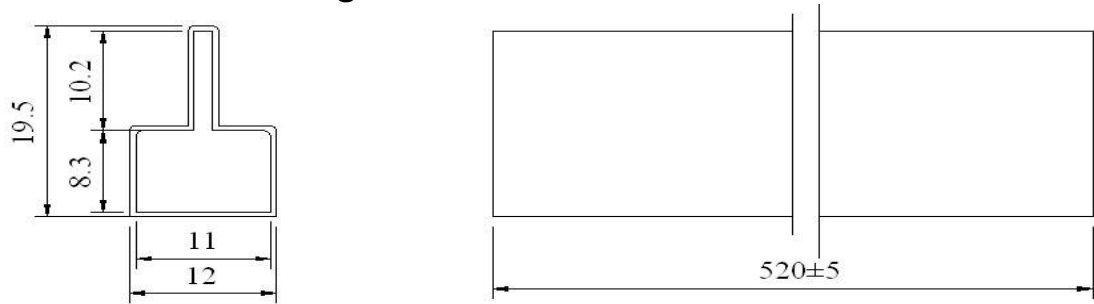
- a) Unsuitable handling or misuse by user.**
- b)**

Modification or repair by user.

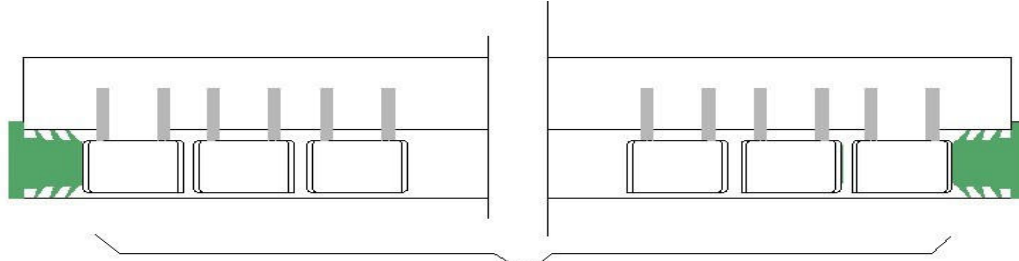
- c) Any other case not due to manufacturer's responsibility such as natural calamity, accident, etc.**

This scope covers only replacement. Any loss derived from failure or malfunction of the sensor, or cost on replacing is excluded from this warranty scope.

I. Standard Packing

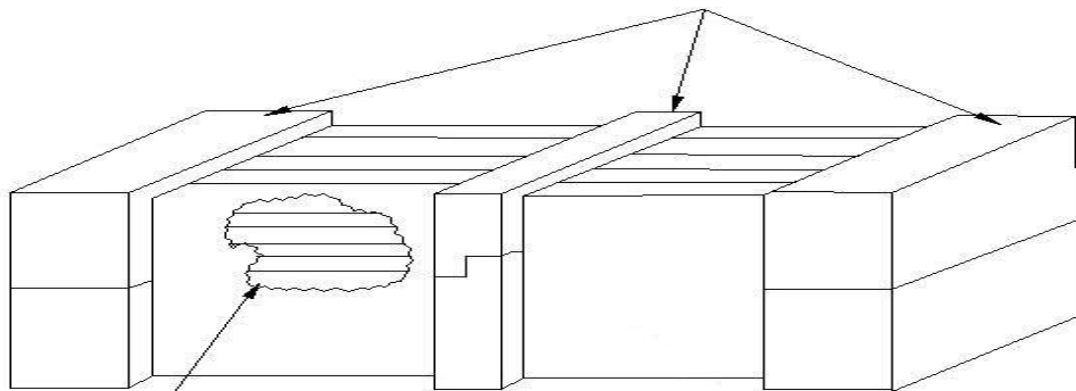


Unit:mm

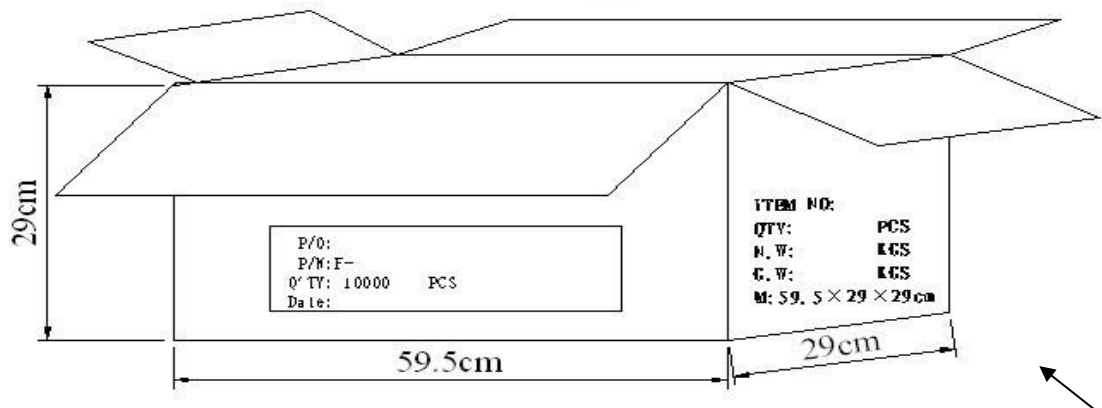


Total: 50pcs

holder (polyfoam: ps)



magazine (PVC)



Carton

- Note:**
- 1) Each magazine contains 50 pcs.**
 - 2) Total quantity $50\text{pcs} \times 200 \text{ MG} = 10000\text{pcs}$.**