



SPECIFICATION FOR ULTRASONIC SENSOR

| | | | |
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| TOTAL PAGE | 10 | www.bestarsensor.com | ROHS |
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|--------------|---------------|-------------|---------------|
| Customer | | Model Name | BPU1458IFAH09 |
| Customer P/N | | Product No. | 101901 |
| Date | 20. Dec. 2012 | Issue No. | BS/TEU01.306B |
| Page | 01 of 10 | Issue Date | 2012/12/20 |

Approval:

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- 2.Features
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- 9.Packing
- 10.History change record

| Drawn by | Checked by | Approved by | Customer approved |
|----------|------------|-------------|-------------------|
| 倪雪晴 | 邹东平 | 李红元 | |

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BPU1458IFAH09



1.Applications

This specification covers the water proof type ultrasonic ceramic transducer which are used for ultrasonic ranging and parking sensor of automobile.

2.Features

- 2.1) Water proof and dual use
- 2.2) Compact and light weight.
- 2.3) High sensitivity and sound pressure.
- 2.4) Less power consumption.
- 2.5) High reliability

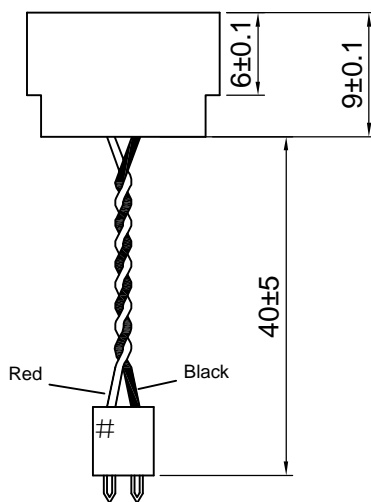
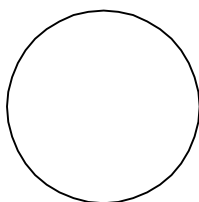
3.Technical terms

| No. | Item | Unit | Specification |
|-----|-------------------------|------|-------------------|
| 1. | Construction | | Water Proof |
| 2. | Using Method | | Dual Use |
| 3. | Center Frequency | KHz | 58±1 |
| 4. | Sound Pressure Level | dB | ≥85(30cm/10Vrms) |
| 5. | Sensitivity | dB | ≥-90dB/V/ μ bar |
| 6. | Echo Pulse Width | us | ≥200(at 1.5m) |
| 7. | Ringing | ms | ≤1.6 |
| 8. | Capacitance | pF | 2000±25% at 1KHz |
| 9. | Directivity | ° | 110×50deg |
| 10. | Operating Tem.Range | °C | -40 to +85 |
| 11. | Storage Tem.Range | °C | -40 to +85 |
| 12. | Allowable Input Voltage | Vp-p | 160 |
| 13. | Housing Material | | Aluminum |

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| B | 2012.12.20 | 倪雪晴 | | Checked by: | 邹东平 | Ultrasonic Sensor | |
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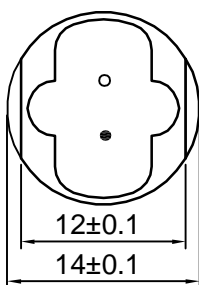
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Lead wire
1571-30# Red,Black
connector pitch 2mm

: JAM code



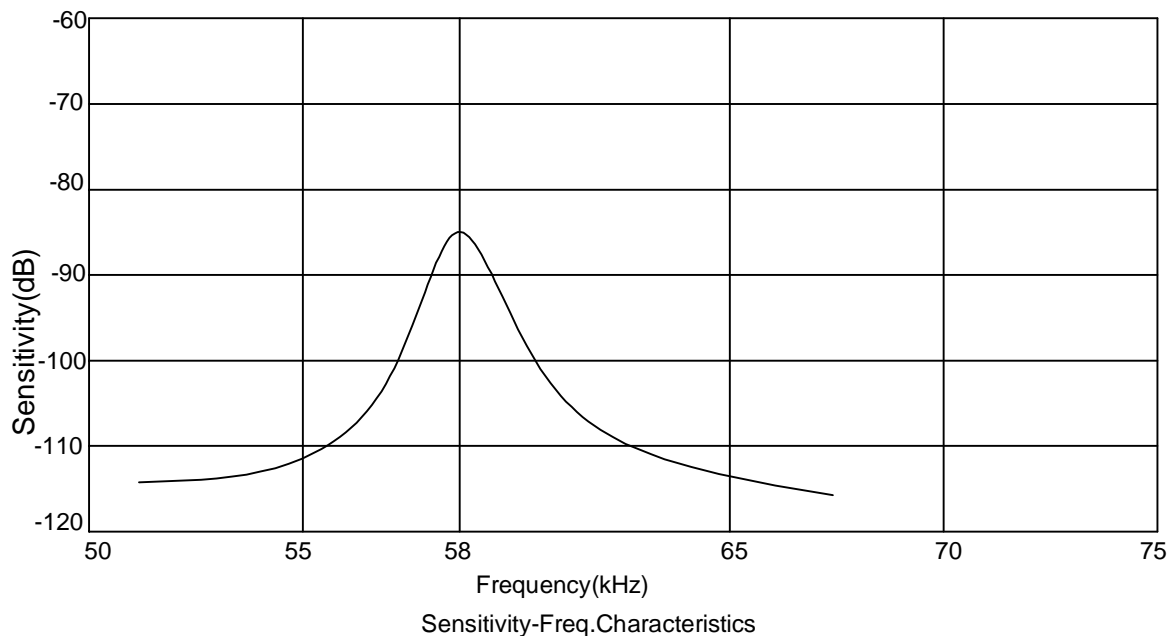
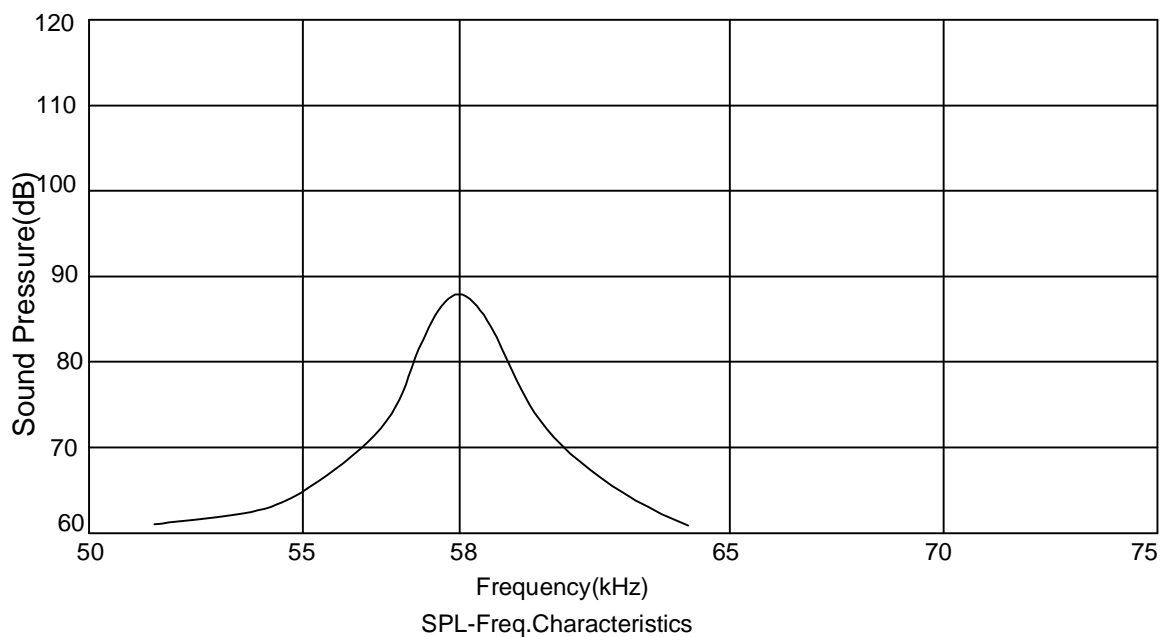
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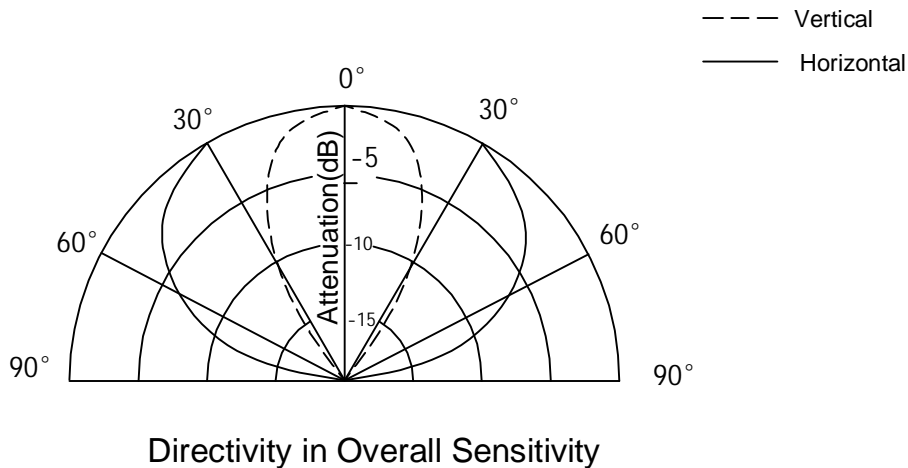
5. Beam Pattern



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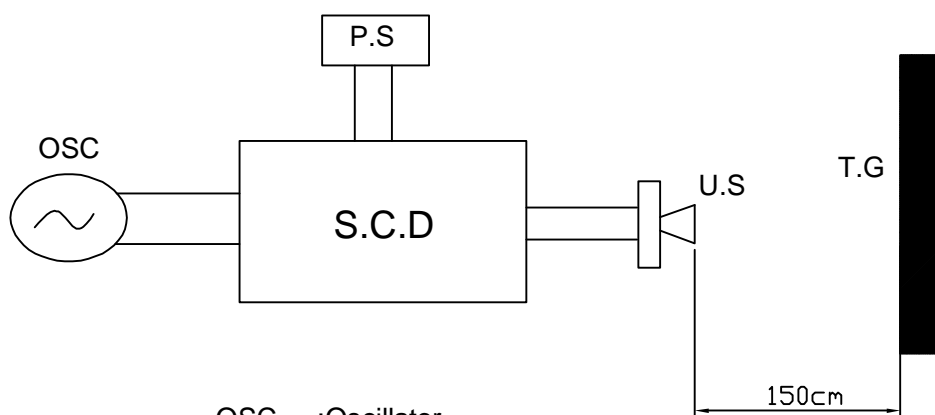
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6. Test circuit

Echo&Ringing test circuit

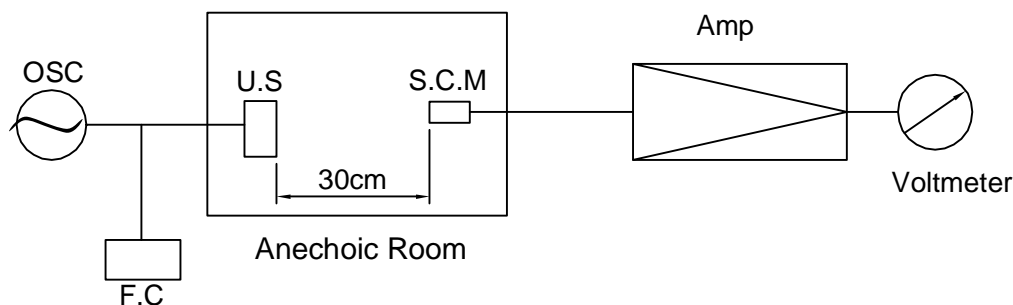


- OSC : Oscillator
- P.S : Power supply
- S.C.D : Special circuit diagram
- U.S : Ultrasonic Sensor
- T.G : Target

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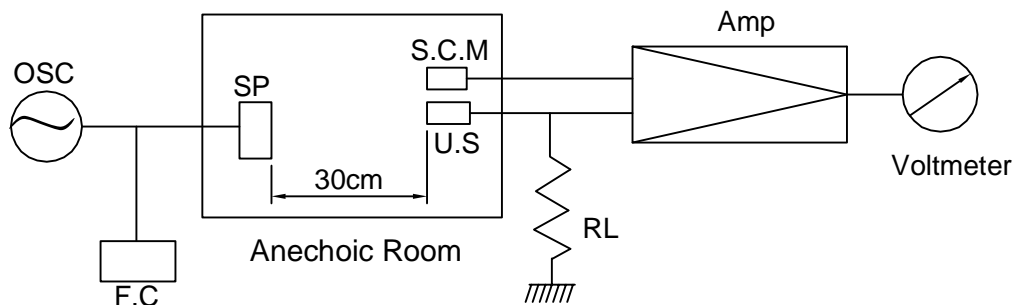
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S.P.L test circuit



OSC. :Oscillator
 F.C :Frequency Counter
 U.S :Ultrasonic Sensor
 S.C.M:Standard Cappacitor Microphone
 Amp. :Amplifier

Sensitivity test circuit



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

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7. Reliability Test

- 7.1 High temp.life test
 - Temperature +85± 3°C
 - Duration 1000hrs
- 7.2 Low temp.life test
 - Temperature -40±3°C
 - Duration 1000hrs
- 7.3 Humidity Test
 - Temperature +85±3°C
 - Relative Humidity (90±5) %
 - Duration 500hrs
- 7.4 Heat Cycle Test Resistance
 - Temperature +85±3°C 30min
 - 40±3°C 30min
 - Cycles 3000cycles
 - (Sensor paralleled resistance 3.9 Kohm. Temperature conversion T<5min.)
- 7.5 Vibration Test
 - Vibration Frequency 10~200Hz
 - Sweep Period 15min
 - Acceleration 43.12m/s² (4.4G)
 - Direction 3(x.y&z)
 - Time 96hours/direction
- 7.6 Shock test
 - Acceleration sine 980 m/s² (100G)
 - Direction 3 (x.y&z)
 - Shock times 3 times/direction
- 7.7 Drop test
 - Height 1m onto concrete floor
 - Times 10 times
- 7.8 Pull Strength
 - Tensile strength 10N
 - (Duration time:10S , 2 PIN tensile strength)
- 7.9 Connector soldering check:
 - Immersing terminal up to 1mm below base in soldering bath at 260 °C 10 seconds

Notice:

The variation of the S.P.L is within 3dB and other parameters are within 30% at 58 kHz, for 24 hours at 25°C after above test condition, compared with initial figures.

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8. Notice

8.1 Export Control <For customers outside The People's Republic of China>

No BeStar products should be used or sold, through any channel, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to (1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or (2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

8.2 Please contact our sales representatives or product engineers before using the products in the specification or catalogue for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this specification.

- a) Aircraft equipment or Aerospace equipment
- b) Undersea equipment and Power plant equipment
- c) Medical equipment and Transportation equipment (vehicles, trains, ships, etc.)
- d) Traffic signal equipment i Disaster prevention / crime prevention equipment
- e) Data-processing equipment including Application of similar complexity and/or reliability requirements to the applications listed above

8.3 Product specifications and catalogues are subject to change and our products in them may be discontinued without advance notice.

Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

8.4 Please read rating and CAUTION (for storage, operating, rating, soldering, mounting and handling) in this specifications in order to prevent smoking and/or burning, etc.

8.5 Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our specifications and catalogues. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.

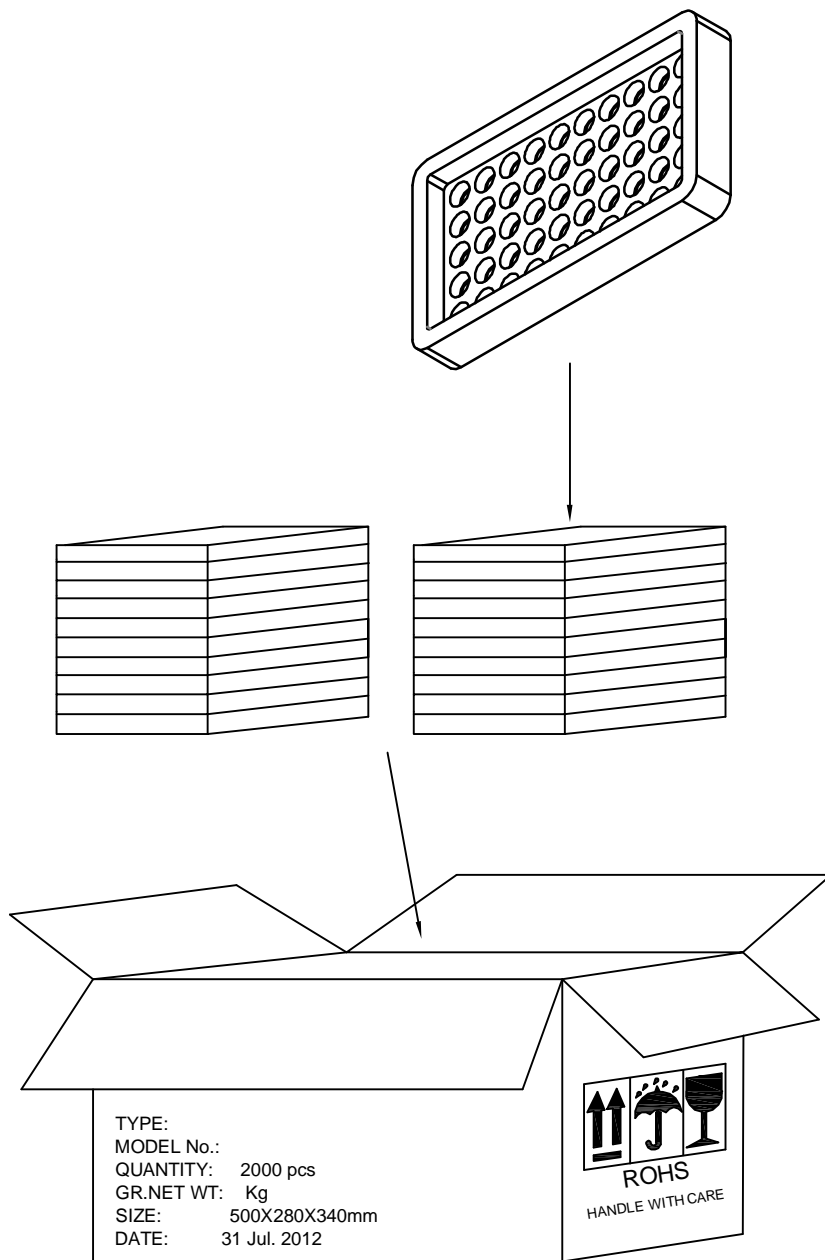
8.6 No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

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9.Packing



- 1)50 pcs/tray
- 2)40 trays/carton
- 3)2000 pcs/carton in total
- 4)carton size: 500X280X340m m

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10. History change record

| version No. | Change Items | | Date | Drawn | Approved |
|-------------|-------------------|-------------------|------------|-------|----------|
| | Before | After | | | |
| A | | | 2012.07.31 | 倪雪晴 | 李红元 |
| B | Wire length 35 mm | Wire length 40 mm | 2012.12.20 | 倪雪晴 | 李红元 |
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