

**MESSRS.**

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**SPECIFICATION FOR APPROVAL****承 认 书**

|                          |                                 |
|--------------------------|---------------------------------|
| <b>PRODUCT</b>           | <b>WATERPROOF TYPE RECEIVER</b> |
| <b>PART NO.</b>          | <b>HDR-080932ZA-1P3 (ROHS)</b>  |
| <b>CUSTOMER</b>          |                                 |
| <b>CUSTOMER PART NO.</b> | <b>DK009</b>                    |

|                    |                    |                     |
|--------------------|--------------------|---------------------|
| <b>APPROVED BY</b> | <b>CHECKED BY</b>  | <b>MADE BY</b>      |
| 王台平<br>MAY-14-2019 | 曹丽萍<br>MAY-14-2019 | LILY<br>MAY-14-2019 |

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EDITION:1.1

## 1. Specification

HDR-080932ZA-1P3 (RoHS)

| ITEMS. |                            | SPECIFICATIONS                                     |
|--------|----------------------------|----------------------------------------------------|
| 01     | Type                       | Dynamic 08 x 09mm receiver unit                    |
| 02     | Sensitivity (S.P.L)        | 120dB $\pm$ 3 dB at 1kHz 0.8V                      |
| 03     | Impedance.                 | 32 Ohm $\pm$ 15%                                   |
|        | DC Resistance              | 29 Ohm $\pm$ 15%                                   |
| 04     | Resonance Frequency (FO)   | 430HZ $\pm$ 20% AT FO, 1V                          |
| 05     | Magnet Field Intensity.    | Axial – dB , Radial –dB at 1KHz                    |
| 06     | Nominal Input Power        | 20mW                                               |
| 07     | Max. Input Power.          | Must be normal at a white noise,30mW for 1 minute. |
| 08     | Total Harmonics Distortion | Max 10 % at 1K Hz.                                 |
| 09     | Dustproof And Waterproof   | IP68                                               |
| 10     | Operation temperature      | -30℃ to +70℃                                       |
| 11     | Storage temperature        | -40℃ to +80℃                                       |
| 12     | Weight.                    | 0.3g $\pm$ 5%                                      |

## 2. Measuring method

### 2-1. Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 45% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Judgement

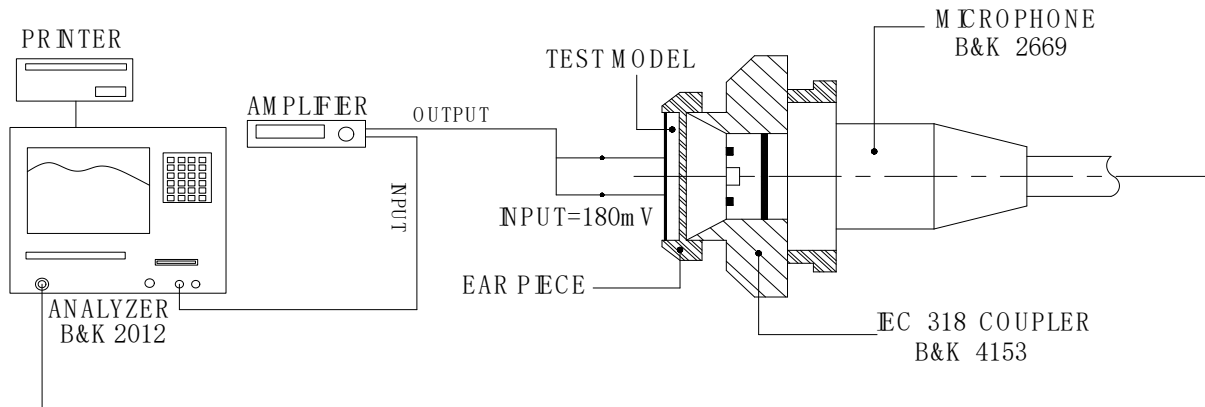
Temperature : 20 $\pm$ 3℃

Relative humidity : 60% ~ 70%,

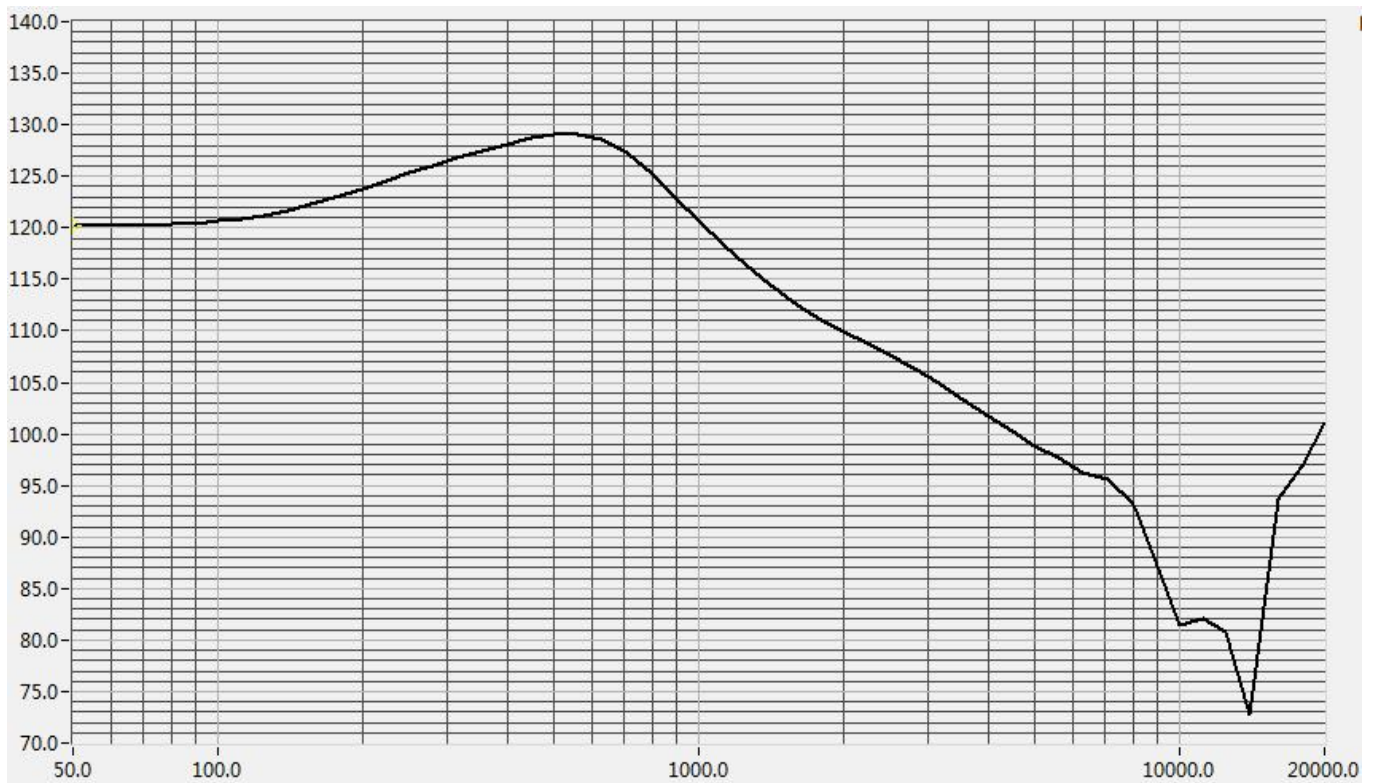
Atmospheric pressure : 860mbar to 1060mbar

## 2-2. Standard Test Fixture

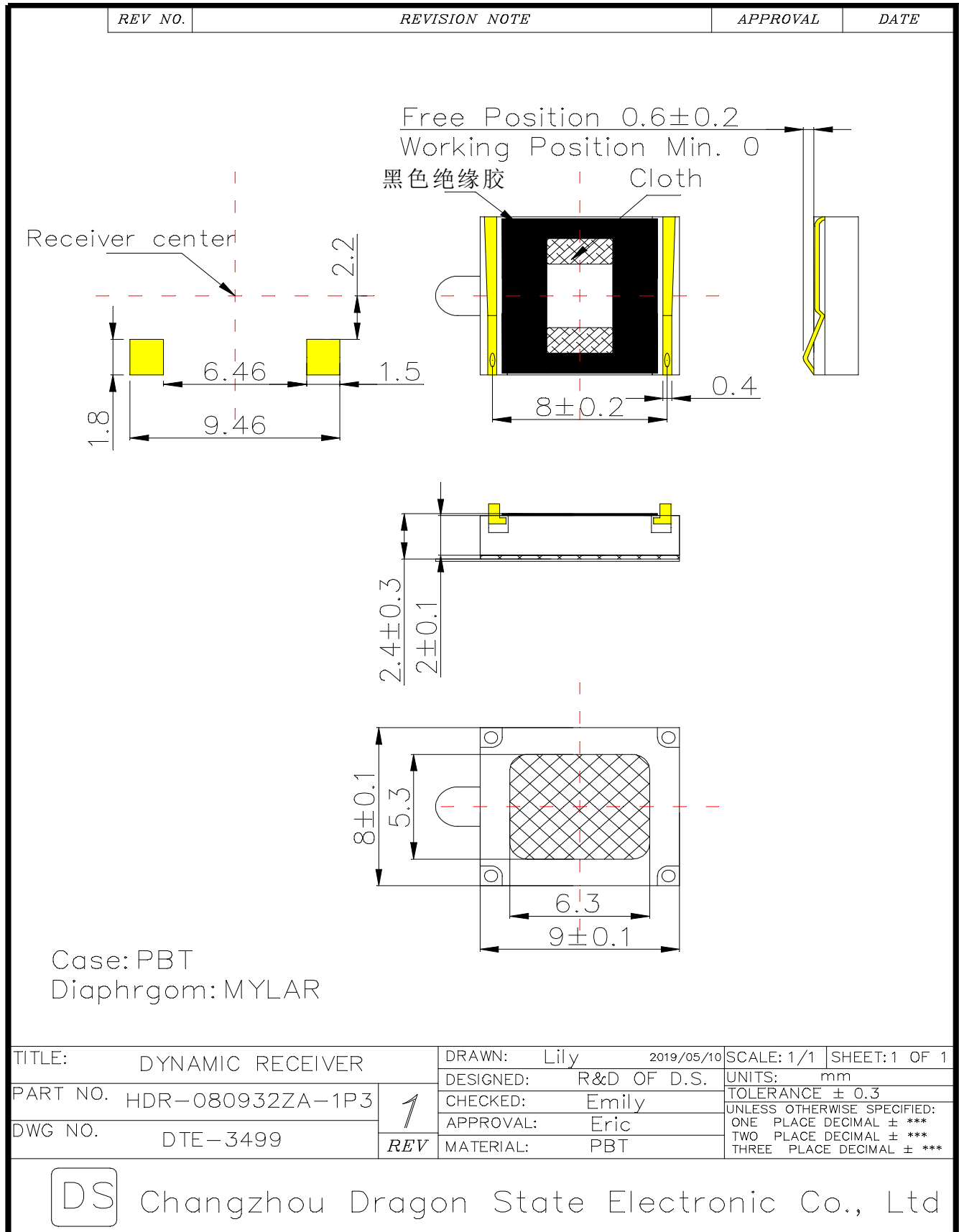
Input signal : 0.8V



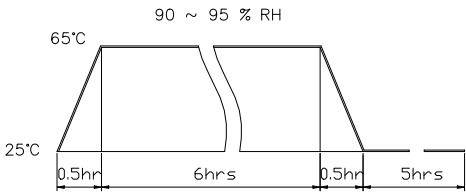
## 2-3 Frequency Response Curve



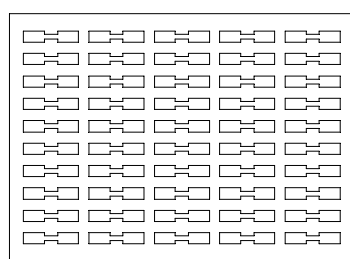
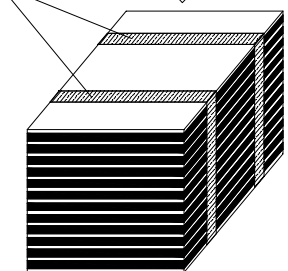
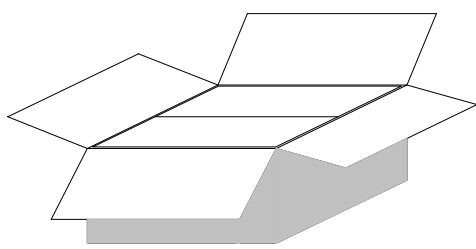
### 3.Dimension



## 4. Reliability Test

| ITEMS. |                            | SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01     | High temp. Test            | Keep 96 hours at $+80^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check                                                                                                                                                                                                                                                                                                                                                   |
| 02     | Low temp. Test             | Keep 96 hours at $-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check                                                                                                                                                                                                                                                                                                                                                   |
| 03     | Humidity test              | Keep 96 hours at $+40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ relative humidity 90% and leave 3 hours in normal temperature and then checked.                                                                                                                                                                                                                                                                                                                          |
| 04     | Temp./humidity cycle       | <p>The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;</p>  <p>The graph shows a temperature profile starting at 25°C, rising to 65°C over 0.5hr, holding at 65°C for 6hrs, and then falling back to 25°C over 0.5hr. A humidity profile of 90 ~ 95 % RH is indicated during the 6hr hold at 65°C. The total cycle time is 7hrs (0.5 + 6 + 0.5).</p> |
| 05     | Thermal Cycle Test.        | Low temperature: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , temperature: $+80^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , cycle: 1 hour/cycle each, and then keep 5 cycles in a room.                                                                                                                                                                                                                                                                                |
| 06     | Vibration                  | 10~200~10Hz Sin-Wave Sweep 15min. 5G(Constant) X,Y, Z 3 direction. 2 hours each, total 6 hours.                                                                                                                                                                                                                                                                                                                                                                      |
| 07     | Fix Drop test              | Fix on Jig. then drop from 152cm height to the concrete floor<br>X,Y, Z 6 direction. 5 times each, total 30 times.                                                                                                                                                                                                                                                                                                                                                   |
| 08     | Free Drop test             | Free drop from 100cm height to the concrete floor<br>X,y, z 6 direction. 1 times each, total 6 times.                                                                                                                                                                                                                                                                                                                                                                |
| 09     | Load test                  | Rated power white noise is applied for 96 hours                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10     | Protection against liquids | Protected against 1 hour of immersion under 2m pressure                                                                                                                                                                                                                                                                                                                                                                                                              |
| 11     | Max Power test             | Max Power 1 min on – 2 min off 10 cycles.                                                                                                                                                                                                                                                                                                                                                                                                                            |

## 5.Packing

| REV NO.                                                                                                                                                                                                                  | REVISION NOTE                                                                                                                                                                                                                                                                                                                                                                                                                                                              | APPROVAL              | DATE          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------|
|                                                                                                                                                                                                                          | <div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Cover(290*225*3mm)<br/>Material: Paper         </div>                                                                                                                                                                                                                              |                       |               |
|                                                                                                                                                                                                                          | <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Box(290*225*10mm)<br/>100pcs<br/>Material: Paper+Epe         </div>                                                                                    |                       |               |
|                                                                                                                                                                                                                          | <div style="text-align: center;">  </div> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">OPP TAPE</div>  </div> <div style="text-align: right; margin-top: 10px;">           Middle(290*225*135mm)<br/>1000pcs(10*100pcs)<br/>Material: Paper+Epe         </div> |                       |               |
|                                                                                                                                                                                                                          | <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Outer Box(515*320*280mm)<br/>4000pcs(4*1000pcs)<br/>Material: Paper         </div>                                                                  |                       |               |
| 单位: mm                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |               |
| TITLE: Packing                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DRAWN: Lily           | 2012/10/17    |
| PART NO.                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DESIGNED: R&D OF D.S. | SCALE: 2:1    |
|                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CHECKED: Emily        | SHEET: 1 of 1 |
| DWG NO.                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPROVAL: Eric        | UNITS: mm     |
|                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | MATERIAL:             | TOLERANCE     |
| 1                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20~11                 | ± 0.3         |
| REV                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10~5                  | ± 0.2         |
|                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <4                    | ± 0.1         |
| <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">DS</div> <div>Changzhou Dragon State Electronic Co., Ltd</div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |               |