

MESSRS.**SPECIFICATION FOR APPROVAL****承 認 书**

| | |
|-------------------|-------------------------|
| Product | WATERPROOF TYPE SPEAKER |
| Part No. | HDK-251308ZA-4P1 (RoHS) |
| CUSTOMER | |
| CUSTOMER PART NO. | |

| | | |
|--------------------|--------------------|---------------------|
| Approved By | Checked By | Made By |
| 王台平 MAY-07-2021 | 曹丽萍 MAY-07-2021 | LILY MAY-07-2021 |

常 州 华 龙 电 子 有 限 公 司**DRAGONSTATE ELECTRONIC CORPORATION**

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1. Specification
HDK-251308ZA-4P1 (RoHS)

| ITEM | | SPECIFICATIONS |
|------|--------------------------|---|
| 01 | Type | Dynamic speaker |
| 02 | Dimension | External diameter 25*13 mm |
| 03 | Rated Input Power | 1.2W In 1.0cc Close Box |
| 04 | Max. Input Power | 1.3W In 1.0cc Close Box For 1 Minute |
| 05 | Impedance | 8 ohm \pm 15% at 2000Hz 0.5V |
| 06 | Resonance Frequency (Fo) | 700 \pm 20% Hz (in free air) |
| 07 | Resonance Frequency (Fo) | 950 \pm 20 %Hz (in 1.0cc Close Box) |
| 08 | Sensitivity (S.P.L.) | 100 \pm 3dB/0.1M/1.2W 800---2.0KHz AV In 1.0cc Close Box |
| 08 | Frequency Range | Fo – Fh Hz |
| 09 | Weight | 2.8 g \pm 5%g |
| 10 | Appearance | Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc. |
| 11 | Operation Test | Must be normal at program source – 1.2W |
| 12 | Buzz, Rattle, etc. | Must be normal at sine wave 3.1Vrms(in 1.0cc Close box) from 300~20KHz |
| 13 | Polarity | When positive voltage is applied to the terminal marked (+), diaphragm should move to the front. |
| 14 | Terminal Strength | Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection. |
| 15 | Temperature | Operating temperature: -20℃ to +60℃ Storage temperature: -30℃ to +70℃ |

2.1 Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 20±3℃

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2.2 Standard Test Fixture

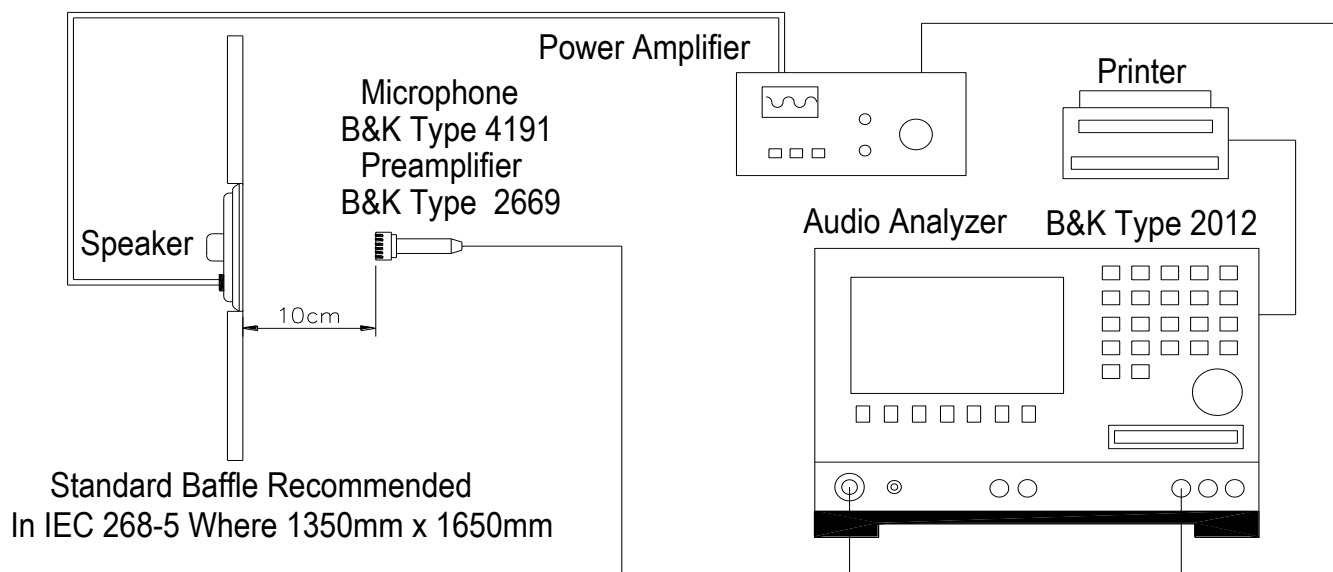
1. Input Power : 1.2W (3.1V)

2. Zero Level : -dB

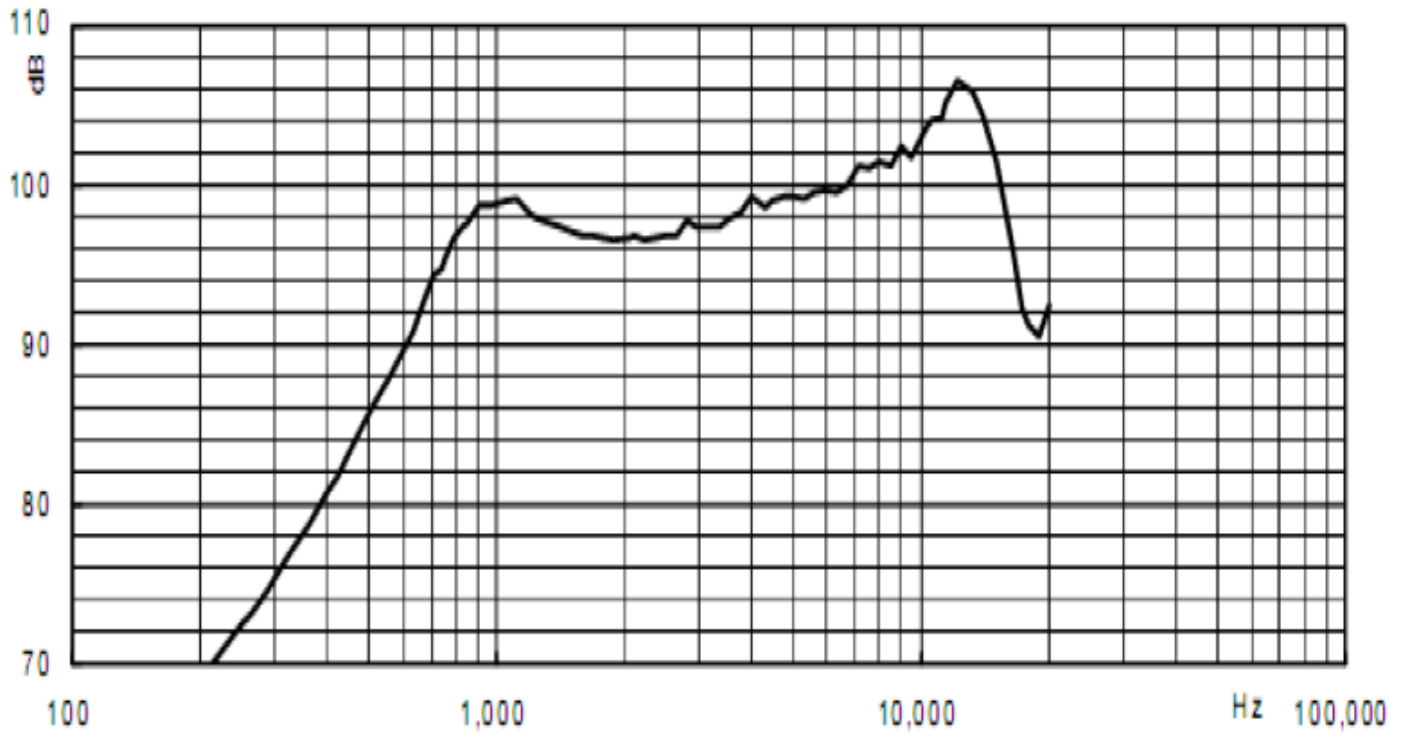
3. Mode : SPEAKER

4. potentiometer Range : 50dB

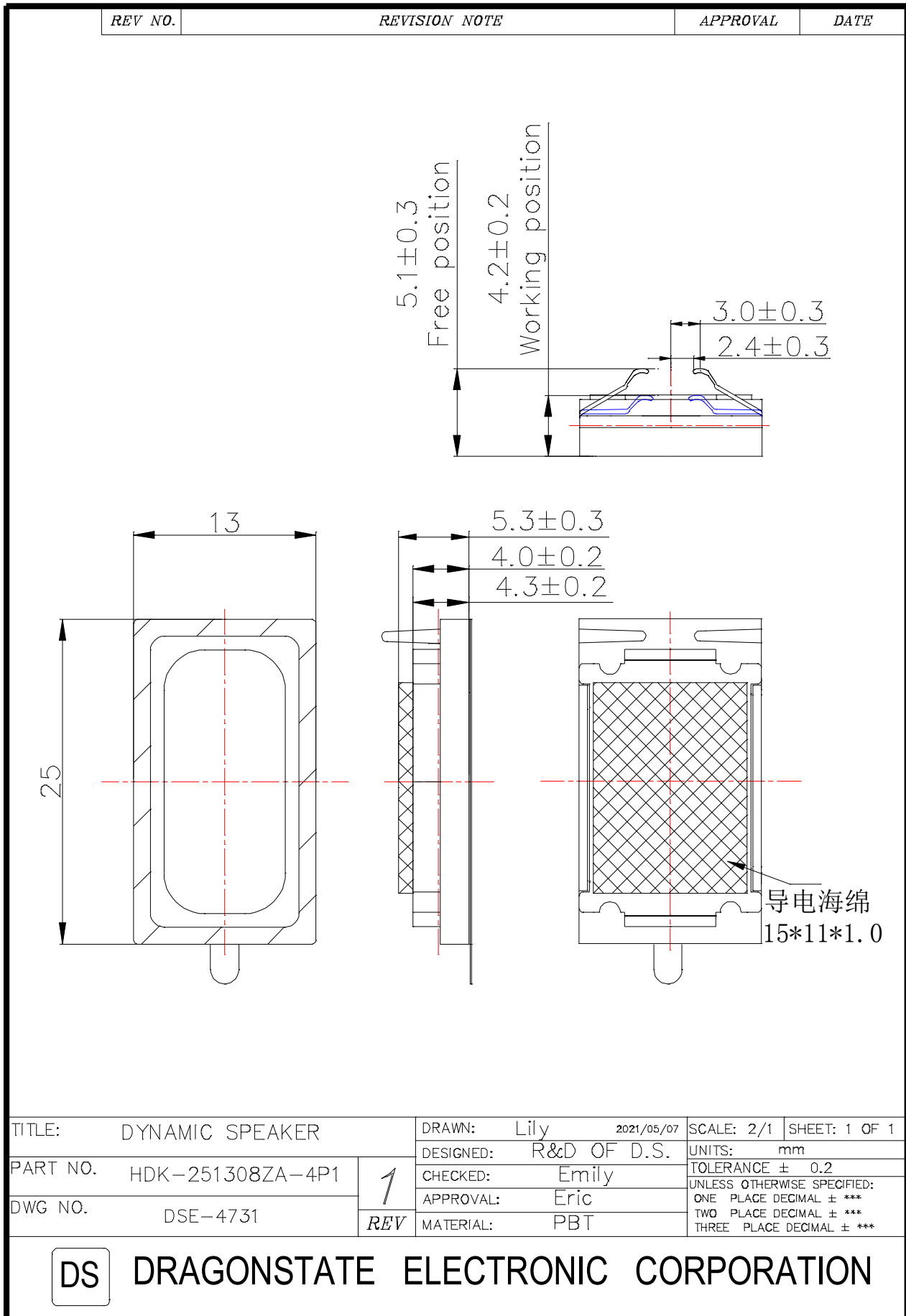
5. Sweep Time : 0.5sec



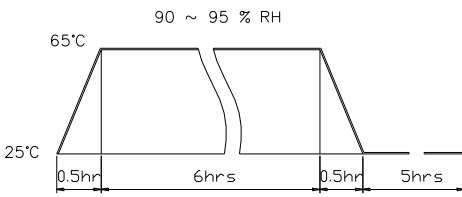
2.3 Frequency Response Curve



3.Dimension




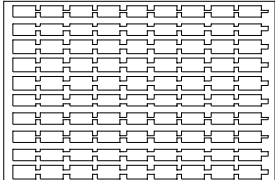
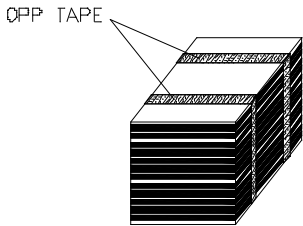
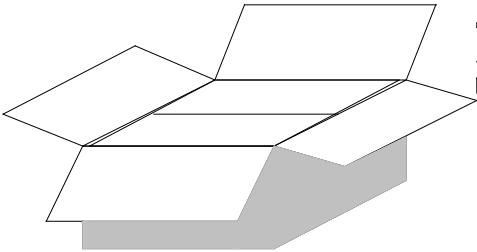
4. Reliability tests

| Items. | | Specifications |
|--|----------------------------|---|
| 01 | High temp. Test | Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check |
| 02 | Low temp. Test | Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check |
| 03 | Humidity test | Keep 96 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% 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>  |
| 05 | Thermal cycle test. | Low temperature: $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$, temperature: $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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 X, y, z 6 direction. 5 times each, total 30 times. |
| 08 | Free drop test | Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times. |
| 09 | Rated Power test | Rated Power white noise is applied for 96 hours in 1.5cc closebox |
| 10 | Protection against liquids | Protected against 30 minutes of immersion under 1M pressure Product without leakage |
| 11 | Max Power test | Max power 1 min on – 2 min off 10 cycles. |
| 12 | Terminal strength test | Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection. |
| Criterion: After these test , the change of S.P.L shall be within ± 3 dB . | | |

Soldering Condition

Recommend using constant branding iron in **15 ~ 30W**, and in temperature range **$350 \pm 10^{\circ}\text{C}$** .

5.Packing

| REV NO. | REVISION NOTE | APPROVAL | DATE |
|---|---------------|------------------------|------|
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>↓</p>  <p>↓</p>  <p>↓</p>  </div> <div style="text-align: left;"> <p>Cover(320*220*5mm) Material: Paper</p> <p>Box(320*220*10mm) 90pcs Material: Paper+Epe</p> <p>OPP TAPE</p> <p>Middle(320*220*120mm) 900pcs(10*90pcs) Material: Paper+Epe</p> <p>Outer Box(490*360*350mm) 3600pcs(4*900pcs) Material: Paper</p> </div> </div> | | | |
| 单位: mm | | | |
| TITLE: packing | | DRAWN: Lily 2013/12/06 | |
| PART NO. | | DESIGNED: R&D OF D.S. | |
| | | CHECKED: Emily | |
| DWG NO. | | APPROVAL: Eric | |
| | | MATERIAL: *** | |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">DS</div> <div style="display: inline-block; vertical-align: middle;"> <div style="border: 1px solid black; padding: 5px; font-size: 2em; margin-right: 10px;">1</div> <div style="text-align: right;">REV</div> </div> | | SCALE: 2:1 | |
| | | SHEET: 1 of 1 | |
| | | UNITS: mm | |
| | | TOLERANCE | |
| | | 20~11 ± 0.3 | |
| | | 10~5 ± 0.2 | |
| | | <4 ± 0.1 | |
| <div style="border: 1px solid black; padding: 5px; display: inline-block; font-weight: bold; font-size: 1.2em;">DS</div> <div style="display: inline-block; vertical-align: middle; font-weight: bold; font-size: 1.2em;"> DRAGONSTATE ELECTRONIC CORPORATION </div> | | | |

