

規格承認書

PECIFICATION FOR APPROVAL

客戶

CUSTOMER :

項目

ITEM :

型號

TYPE :

描述

DESCRIPTION :

客戶料號

CUSTOMER NO. :

規格書號

SPECIFICATION NO.:

版本

EDITION NO. :

日期

DATE :

腔体长方形喇叭（带耳朵）
GSPK531815BOX-4R3W-L100
53*18*14.8mm 4ohm 2.5W S.P.L: 89dB+/- 3dB
V1.0
2025-3

客戶承認

CUSTOMER CONFIRM AND SIGN

檢查 TESTED BY	審核 CHECKED BY	承認 APPROVED BY

東莞市贏海電子有限公司

DONGUAN INGHAI ELECTRONICS CO.,LTD

製作 ISSUED BY	審查 CHECKED BY	確認 APPROVED BY
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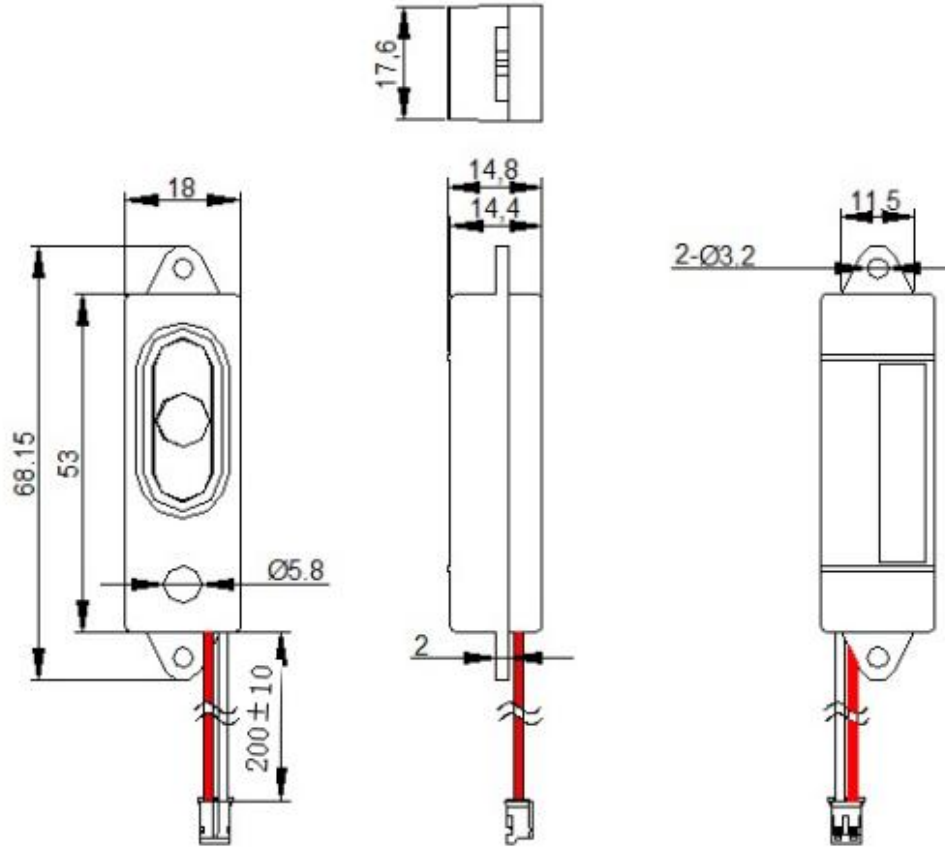
1.电气特性 *Electrical Characteristics*

项目 <i>Item</i>	规格 <i>Specification</i>
型号 <i>Type</i>	音箱 531815 (3516 喇叭)
外观尺寸 <i>Dimension</i>	<i>Shown As Mechanical Drawings</i>
标示 <i>Marking</i>	<i>Shown As Mechanical Drawings</i>
膜片厚度 <i>Mylar Thickness</i>	
磁铁 <i>Magnet</i>	9.5*1.8 N38
音圈 <i>Voice Coil</i>	$k's \sqrt{10.3 \times 0.06 \times 3.8} \Omega$
阻抗 <i>Nominal Impedance</i>	$4 \Omega \pm 15\% \text{ At } 1.0\text{KHz}$
额定输入功率 <i>Rated Input Power</i>	2W
最大输入功率 <i>Max. Input Power</i>	2.5W
输出音压 <i>Mean Sound Pressure Level(S.P.L)</i>	$89 \pm 3\text{dB}$ By 0.1W/0.1M at 0.8, 1.0, 1.2, 1.5KHz AVG.
有效频宽 <i>Frequency Range</i>	200~20000Hz
失真率 <i>Distortion</i>	5%Maximum At 0.89V Rated Input At 1.0KHz/Nom Power
异常音试验电压 <i>Buzzes&Rattles</i>	2.83V
最低共振频率 <i>Lowest Resonanve Frequency(F0)</i>	$1200\text{Hz} \pm 15\%$
负载测试 <i>Load Test</i>	White Noise 2W, 24Hrs
净重量 <i>Net Weight</i>	9.85g
工作温度 <i>Operation Temperature</i>	$-20^\circ\text{C} \sim +50^\circ\text{C}$
存储温度 <i>Storage Temperature</i>	$-25^\circ\text{C} \sim +60^\circ\text{C}$
极性 <i>Polarity</i>	Diaphragm Shall Move Forward When Applies A Positive DC. Current To The "+" Or Marked On Terminal

2.产品外观 *Product Outside View*

单位 *Unit:mm*

公差 *Tolerance: ±0.2mm* 立创出货焊线长 **L100MM** 可以找原厂订制线长和端子



NO.	材料 <i>PARTAME</i>	材质 <i>MATERIAL</i>	数量 <i>QTY</i>
1	U 杯 <i>Frame</i>	SPCC	1
2	磁铁 <i>Magnet</i>	Nd-Fe-B	1
3	华司 <i>Washer</i>	SPCC	1
4	PCB 板 <i>Terminal</i>	FR-4	1
5	音圈 <i>Voice Coil</i>	Cu	1
6	振动膜 <i>Diaphragm</i>	PET	1
7	胶壳 <i>Gasket</i>	PAPER	1
8	端子线 <i>Wire</i>	UL1007#26*2P*2.54 端子红黑并 线	1

3.可靠性试验 *RELIABILITY TEST*

试验项目 <i>ITEM</i>	测试方法 <i>METHOD OF TEST</i>	标准 <i>STANDARD</i>
高温试验 <i>Dry Heat Test</i>	+55℃±2℃, 96h, 恢复 2 小时后测量 <i>After being placed in a chamber with +55 ±2 °C for 96 hours and then being placed in natural condition for 2 hours, sounder shall be measured.</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>
低温试验 <i>Cold Test</i>	-25℃±2℃, 96h, 恢复 2 小时后测量 <i>After being placed in a chamber with -25 ±2 °C for 96 hours and then being placed in natural condition for 2 hours, sounder shall be measured.</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>
恒定湿热试验 <i>Humidity Test</i>	将产品置于+40℃±5℃, 相对湿度保持在 95%中的环境中放置 96h, 恢复 2 小时后测量。 (见图 FIG.1) <i>After being placed in a chamber with, 95%R.H. at +40 °C ± 5 °C for 96 hours and then being placed in natural condition for 2 hours, sounder shall be measured.</i> <i>(Attached FIG.1)</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>
温度循环试验 <i>Temperature Cycle Test</i>	产品在-25℃的试验箱和温度为+55℃的试验箱各放置 30 分钟, 为一次温度循环。产品承受 5 次温度循环后, 放置 2h 后进行测量(见图 FIG.2) <i>After being placed in a chamber at -25 °C ± 5 °C for 30 minutes, sounder shall be placed at room temperature(+20 °C). After 15 minutes at this temperature, sounder shall be placed in a chamber at +55 °C ± 5 °C. After 30 minutes at this temperature, sounder shall be returned to room temperature(+20 °C) for 15 minutes. After 5 above cycles, sounder shall be measured after being placed in natural condition for 2 hours. (Attached FIG.2)</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test</i>
振动试验 <i>Vibration Test</i>	频率 10-55-10(Hz), 单振幅: 1.5 (mm) 扫频时间 1min ,X,Y,Z 各方向 2 小时 (共 6 小时) (见图 FIG.3) <i>Sounder shall be measured after being applied vibration of amplitude of 1.5mm with 10-55Hz band of vibration frequency . Make this text for directions of X,Y,Z for 2Hrs each (Total 6Hrs)Sweep time is 1 minute. (Attached FIG.3)</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>
跌落试验 <i>Drop Test</i>	於水泥地面上高度 1 公尺处, 依包装实体一角三棱作自由落体试验, 试验结束后包装外观无大改变, 内部喇叭外观和电性能符合要求。 <i>The speaker inside the packing must be OK after text.</i> <i>Direction of drop:1 corner,3 edges and 6 faces.</i> <i>Height:1 meter.</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>
负载试验 <i>Load Test</i>	白噪音 0.2W, 连续 24 小时, 恢复 2 小时后外观、电性能符合要求 <i>Noise: White noise(EIA filter)</i> <i>Power: 2W</i> <i>Duration: 24hours</i>	试验后所有指标都符合要求 <i>All specification must be satisfied after the test.</i>

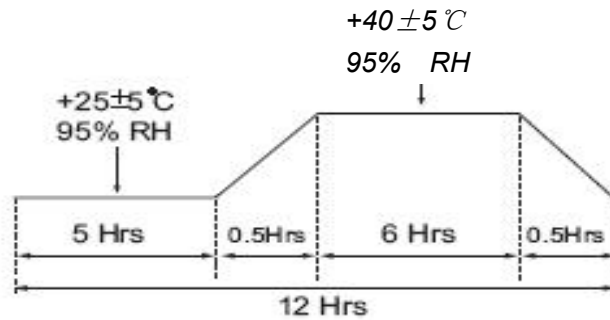


FIG.1

将产品置于+40°C±5°C，相对湿度保持在95%中的环境中放置96h，恢复2小时后测量。
After being placed in a chamber with, 95%R.H. at +40 °C ± 5 °C for 96h and then being placed in natural condition for 2 hours, sounder shall be measured.

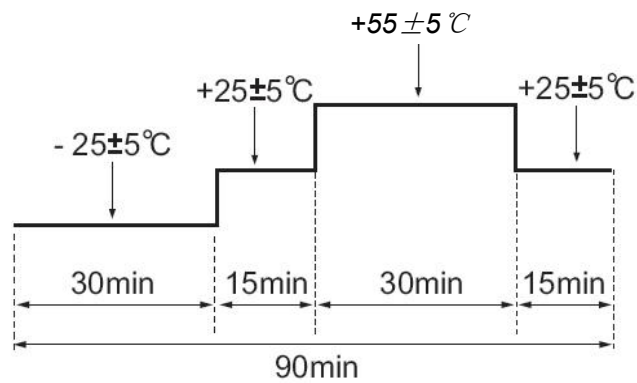


FIG.2

产品在-25°C的试验箱和温度为+55°C的试验箱各放置30分钟，为一次温度循环。产品承受5次温度循环后，放置2h后进行测量

After being placed in a chamber at -25 °C ± 5 °C for 30 minutes, sounder shall be placed at room temperature(+20 °C). After 15 minutes at this temperature, sounder shall be placed in a chamber at +55 °C ± 5 °C. After 30 minutes at this temperature, sounder shall be returned to room temperature(+20 °C) for 15 minutes. After 5 above cycles, sounder shall be measured after being placed in natural condition for 2 hours.

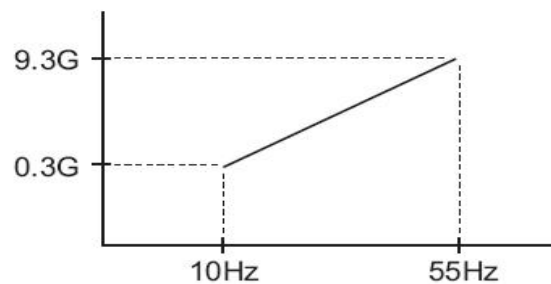
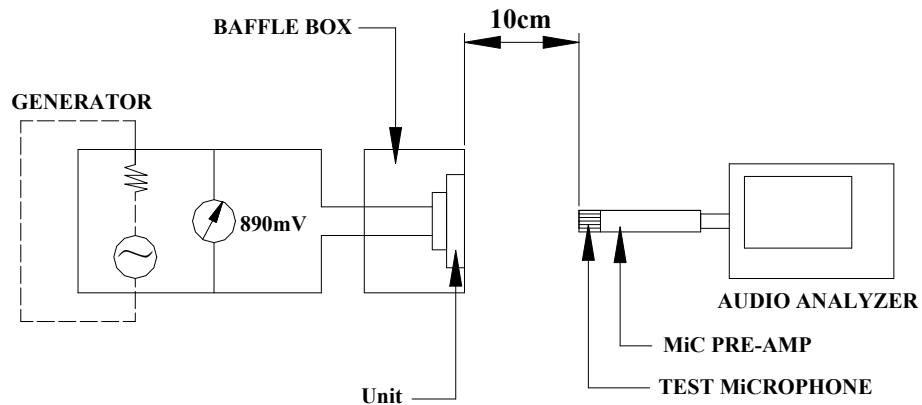


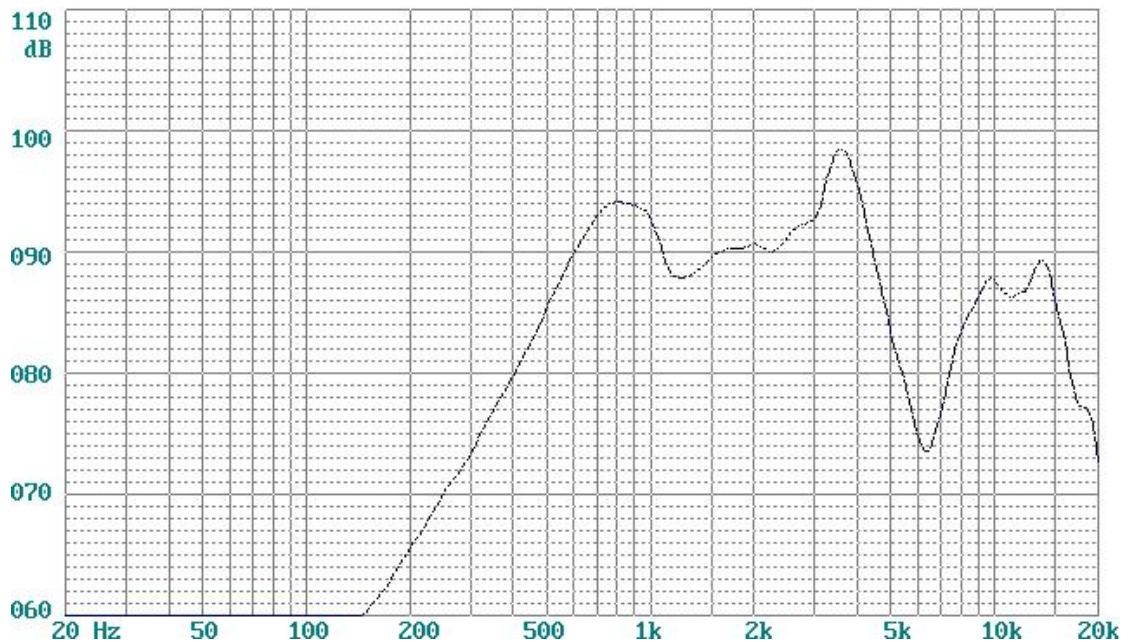
FIG.3

频率10-55-10(Hz)，单振幅：1.5 (mm) 扫频时间1min，X,Y,Z各方向2小时（共6小时）
Sounder shall be measured after being applied vibration of amplitude of 1.5mm with 10-55Hz band of vibration frequency. Make this text for directions of X,Y,Z for 2Hrs each (Total 6Hrs) Sweep time is 1 minute.

4.测试原理图 *Measuring Circuit*



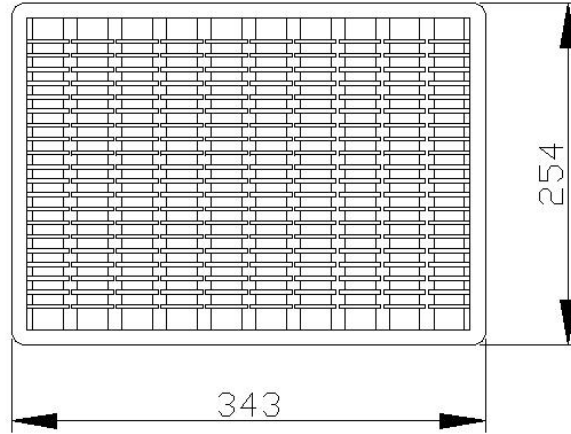
5.频响曲线 *Frequency Response Curve*



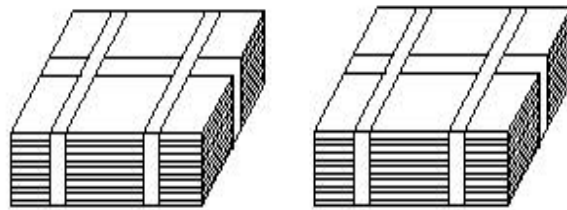
6.正常测试条件 *Normal Test Conditions*

- 温度 *Temperature:* 17 °C ~ 25 °C
- 湿度 *Relative Humidity:* 45% ~ 85%(RH)
- 气压 *Air Pressure:* 86KPa ~ 106KPa
- 判断测试条件 *Judgment Test Conditions*
- 温度 *Temperature:* 20 ± 2 °C
- 湿度 *Relative Humidity:* 60% ~ 70%(RH)
- 气压 *Air Pressure:* 86KPa ~ 106Kpa

7. 包装方法 *Packing Method*



100PCS speaker in per tray



2000 PCS speaker

