

# 規格承認書

## PECIFICATION FOR APPROVAL

客戶

CUSTOMER : 立創

項目

ITEM : 腔体喇叭

型號

TYPE : GSPK2810BOX-4R3W-L100S-2.0T

描述

DESCRIPTION : L28\*W28 \*H10MM 4Ω 1-3W 焊线 S.P.L: 99dB+/- 3dB

客戶料號

CUSTOMER NO. :

規格書號

SPECIFICATION NO.:

版本

EDITION NO. : V1.0

日期

DATE : 2024-5-24

### 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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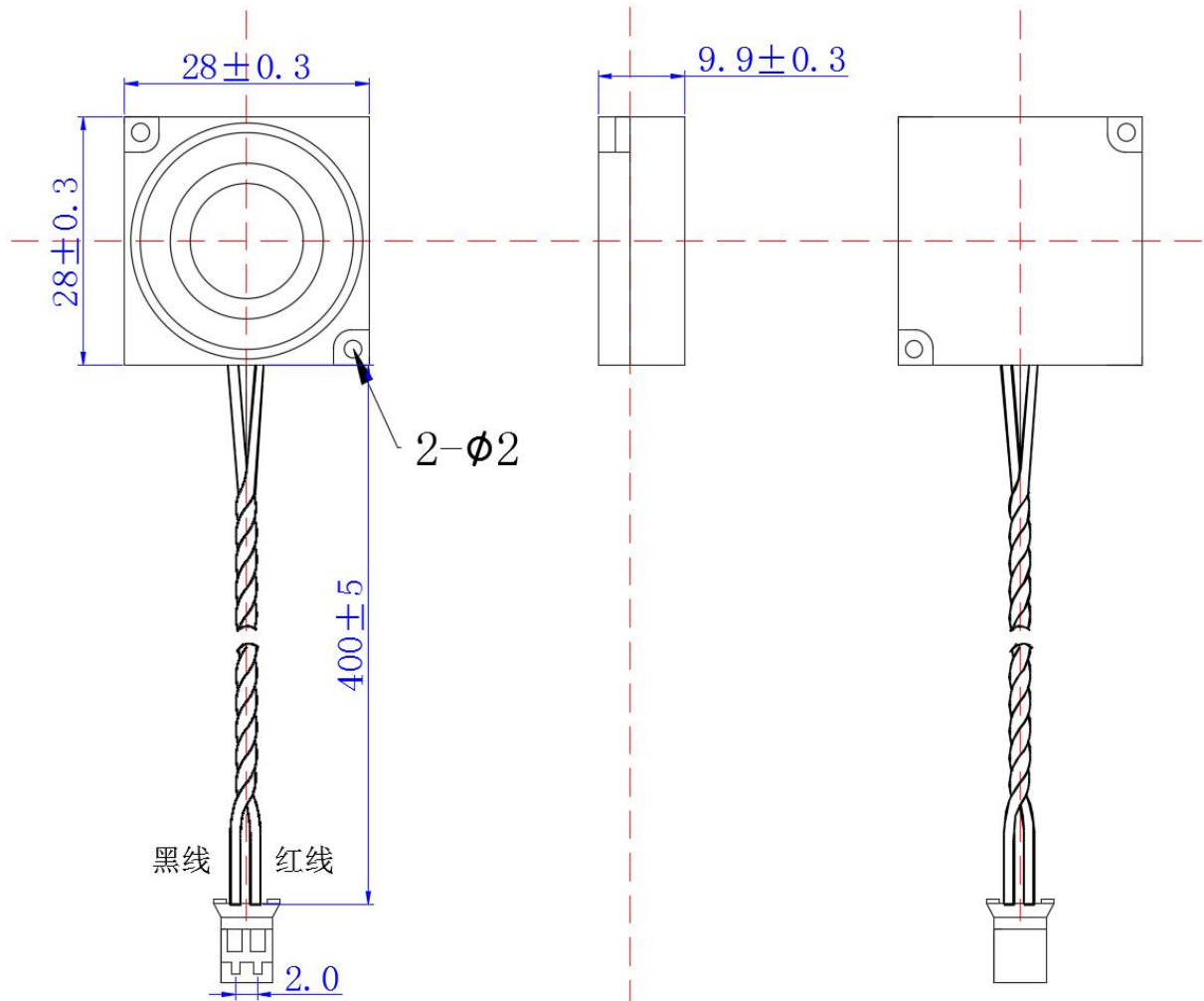
1.电气特性 *Electrical Characteristics*

项目 <i>Item</i>	规格 <i>Specification</i>
型号 <i>Type</i>	<b>音箱 282810-4Ω 3W</b>
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>	<i>mm</i>
磁铁 <i>Magnet</i>	12.5*1.5
音圈 <i>Voice Coil</i>	
阻抗 <i>Nominal Impedance</i>	$4\ \Omega \pm 15\%$ At 1.0KHz
额定输入功率 <i>Rated Input Power</i>	1.0W
最大输入功率 <i>Max. Input Power</i>	3.0W
输出音压 <i>Mean Sound Pressure Level(S.P.L)</i>	$99 \pm 3\text{dB}$ By 0.1W/0.1M at 0.8, 1.0, 1.2, 1.5KHz AVG.
有效频宽 <i>Frequency Range</i>	200~3000Hz
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&amp;Rattles</i>	4.0V
最低共振频率 <i>Lowest Resonanve Frequency(F0)</i>	$500\text{Hz} \pm 15\%$
负载测试 <i>Load Test</i>	White Noise 0.2W, 24Hrs
净重量 <i>Net Weight</i>	7.9g
工作温度 <i>Operation Temperature</i>	-20 °C~+50 °C
存储温度 <i>Storage Temperature</i>	-25 °C~+60 °C
极性 <i>Polarity</i>	<i>Diaphragm Shall Move Forward When Applies A Positive DC. Current To The "+" Or Marked On Terminal</i>

## 2.产品外观 Product Outside View

单位 *Unit*:mm

公差 *Tolerance*:  $\pm 0.5$ mm



NO.	材料 <i>PART</i> AME	材质 <i>MATERIAL</i>	数量 <i>QTY</i>
1	铁壳 <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>	ZHI	1
7	垫圈 <i>Gasket</i>	PAPER	1
8	引线 <i>Wire</i>	UL1007#26#	1
9	端子	2.0T/2P	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°C ± 2°C, 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°C ± 2°C, 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°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。 (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°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(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: 3W</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>

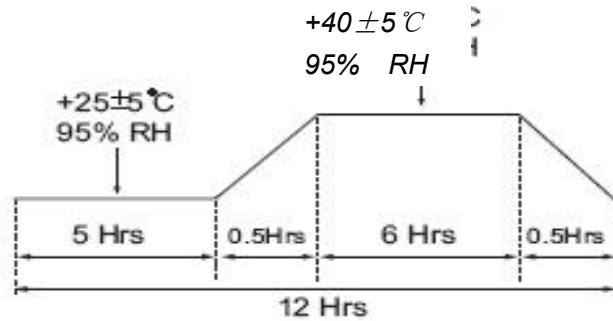


FIG.1

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.*

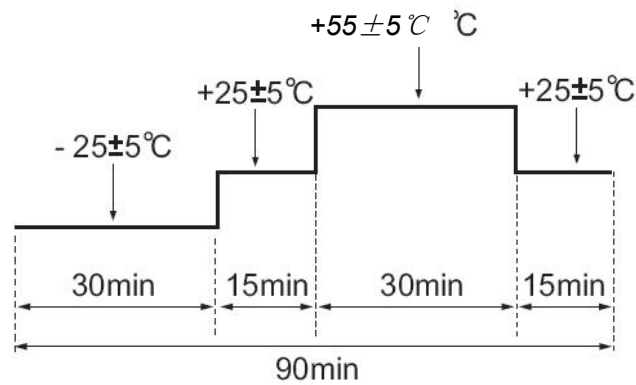


FIG.2

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.*

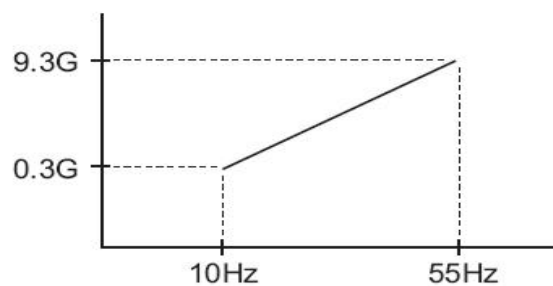
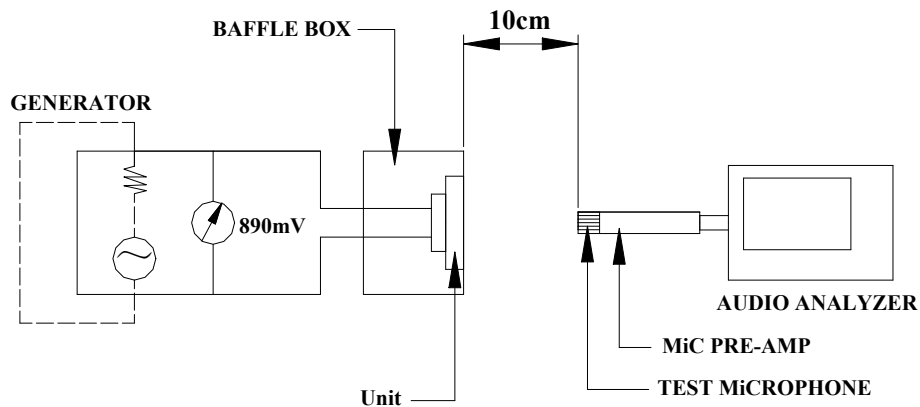


FIG.3

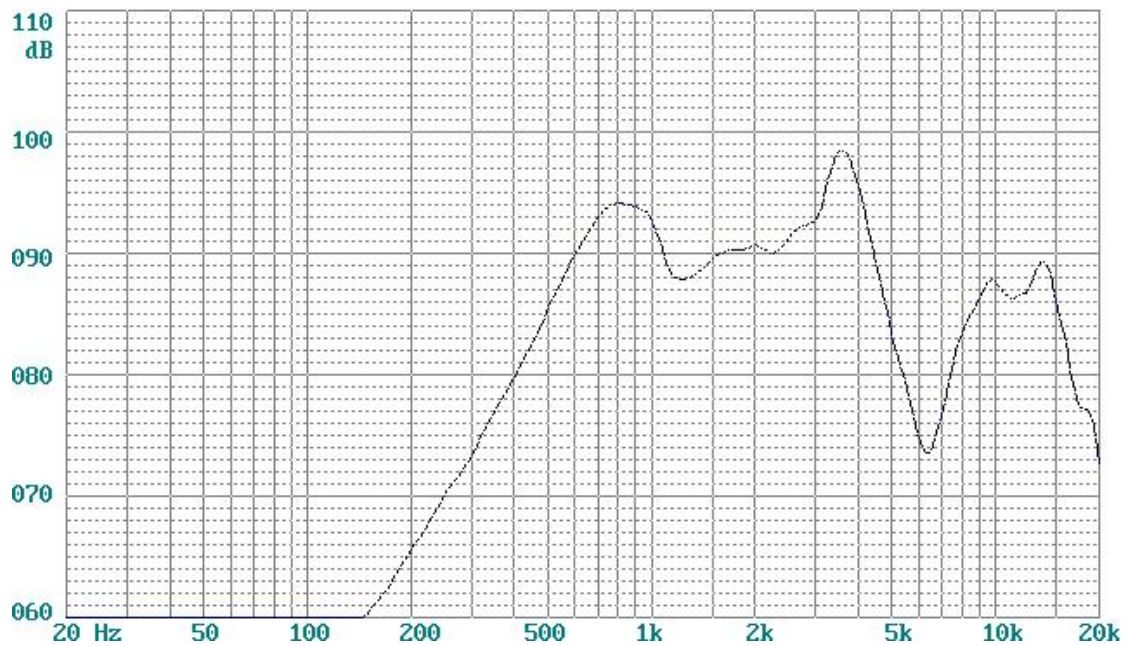
频率10-55-10 (Hz)，单振幅：1.5 (mm) 扫频时间1min，X, Y, Z各方向2小时（共6小时）

*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*



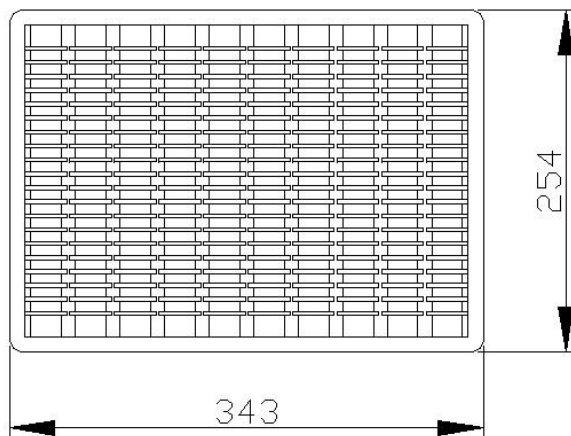
#### 5.频响曲线 *Frequency Response Curve*



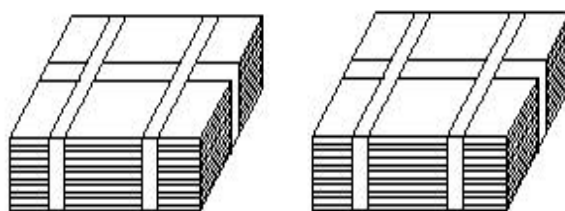
#### 6.正常测试条件 *Normal Test Conditions*

温度 *Temperature*:  $17^{\circ}\text{C} \sim 25^{\circ}\text{C}$   
 湿度 *Relative Humidity*:  $45\% \sim 85\%(\text{RH})$   
 气压 *Air Pressure*:  $86\text{KPa} \sim 106\text{KPa}$   
 判断测试条件 *Judgment Test Conditions*  
 温度 *Temperature*:  $20 \pm 2^{\circ}\text{C}$   
 湿度 *Relative Humidity*:  $60\% \sim 70\%(\text{RH})$   
 气压 *Air Pressure*:  $86\text{KPa} \sim 106\text{Kpa}$

7. 包装方法 *Packing Method*



*100PCS speaker in per tray*



*2000 PCS speaker*

