

MESSRS.

SPECIFICATION FOR APPROVAL**承 认 书**

Product	动态式扬声器 DYNAMIC SPEAKER
Part No.	HDK-151108ZA-9W5-BOX(RoHS)
Customer	
Customer Part No.	M50-A

Approved By	Checked By	Made By
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EDITION:1.1

1.Specification

HDK-151108ZA-9W5-BOX(RoHS)

ITEM		SPECIFICATIONS	
01	Type 属性	Dynamic speaker 动态式扬声器	
02	Dimension 尺寸	External diameter 15*11mm 外径 15*11mm	
03	Rated Input Power 额定输入功率	1.0W 额定 1.0W	
04	Max. Input Power 最大输入功率	1.2W For 1 Minute 1.2W 在内 1 分钟	
05	Impedance 阻抗	8 ohm $\pm$ 15% at 2000Hz 1.0V	
06	Resonance Frequency (Fo) 谐振频率	850Hz $\pm$ 20% at Fo 1V	
07	Sensitivity (S.P.L.)灵敏度	94dB (1.0W / 0.1m) $\pm$ 3 dB	at AVE 1.0K,1.2K,1.5K,2.0KHz
08	Frequency Range 频率范围	Fo – 20KHz	
09	Total Harmonics Distortion 谐波失真	Max 10% at 1 KHz,1.0W.	
10	Weight 重量	3.5g $\pm$ 0.2g	
11	Appearance 外观	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc. 沒有會影響功能的:損壞,裂痕,鏽跡,變型等	
12	Operation Test 工作测试	Must be normal at program source – 1.0W 测试的工作功率為 1.0W	
13	Buzz, Rattle, etc.异音测试	Should not be audible at 2.83V sine Wave between 300 to 5KHz 加電壓 2.83V 频率 300 到 5KHz 的正旋波時不會聽到任何杂音	
14	Polarity 极性	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front. 正電壓接至(+)極時,音膜振動是朝向喇叭前方	
15	Terminal Strength 端子强度	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection. 能夠承受 1kg 負載達 30 秒不會造成任何損壞	
16	Temperature 温度	Operating temperature: -20°C to +60°C 工作温度: -20°C to +60°C Storage temperature: -30°C to +70°C 储存温度: -30°C to +70°C	

2-1. Test Condition 测试条件

Standard 标准测试

Temperature 温度 : 15 ~ 35℃

Relative humidity 相对湿度 : 25% ~ 85%,

Atmospheric pressure 大气压力 : 860mbar to 1060mbar.

Basic 基本测试

Temperature 温度: 20±3℃

Relative humidity 相对湿度: 60% ~ 70%,

Atmospheric pressure 大气压力: 860mbar to 1060mbar

2-2. Standard Test Fixture 标准测试设备

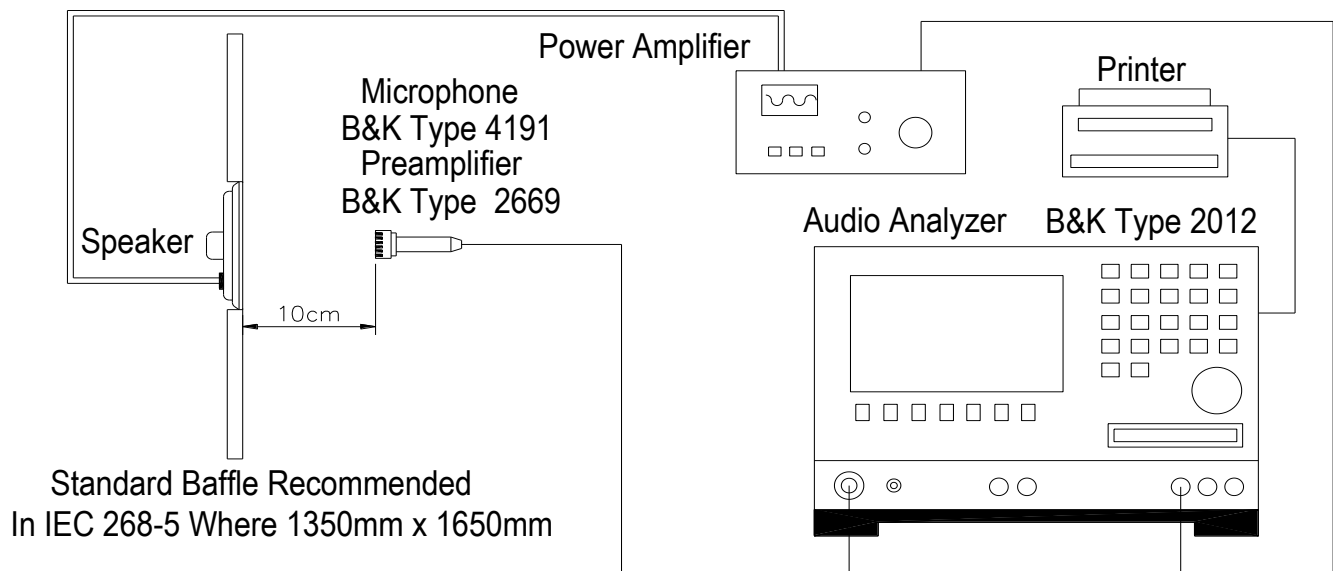
1. Input Power 输入功率: 1.0W (2.83V)

2. Zero Level : -dB

3. Mode 模式: SPEAKER 喇叭

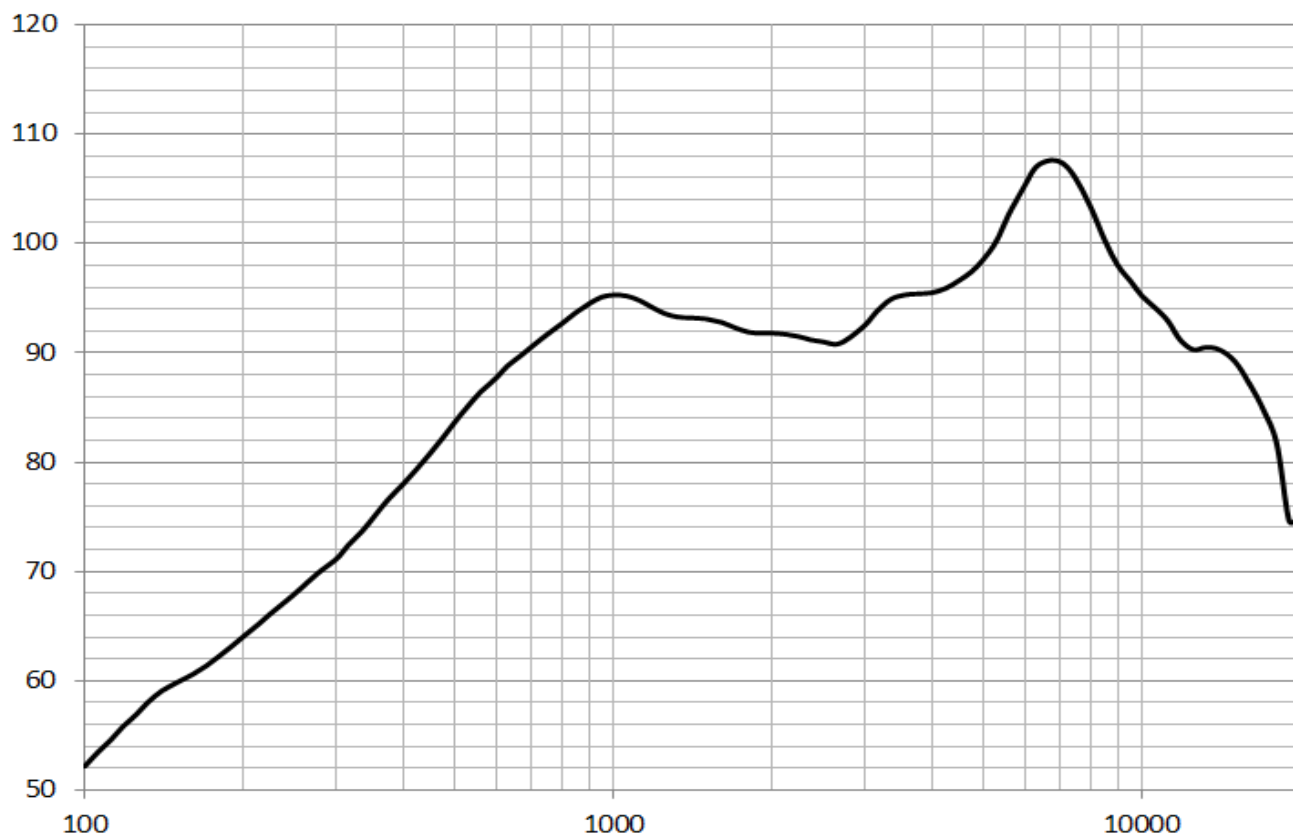
4. potentiometer Range : 50dB

5. Sweep Time 扫描时间: 0.5sec

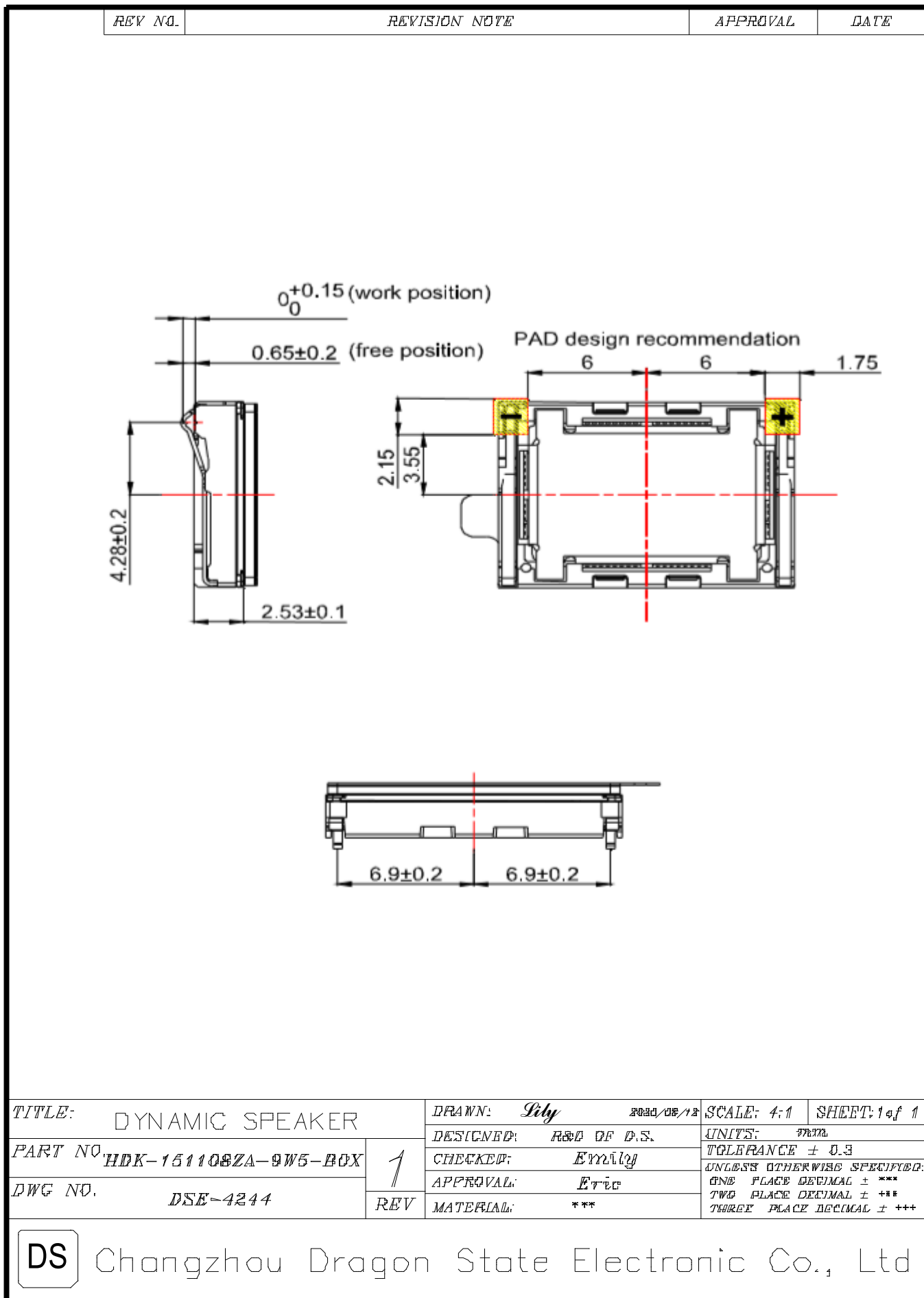


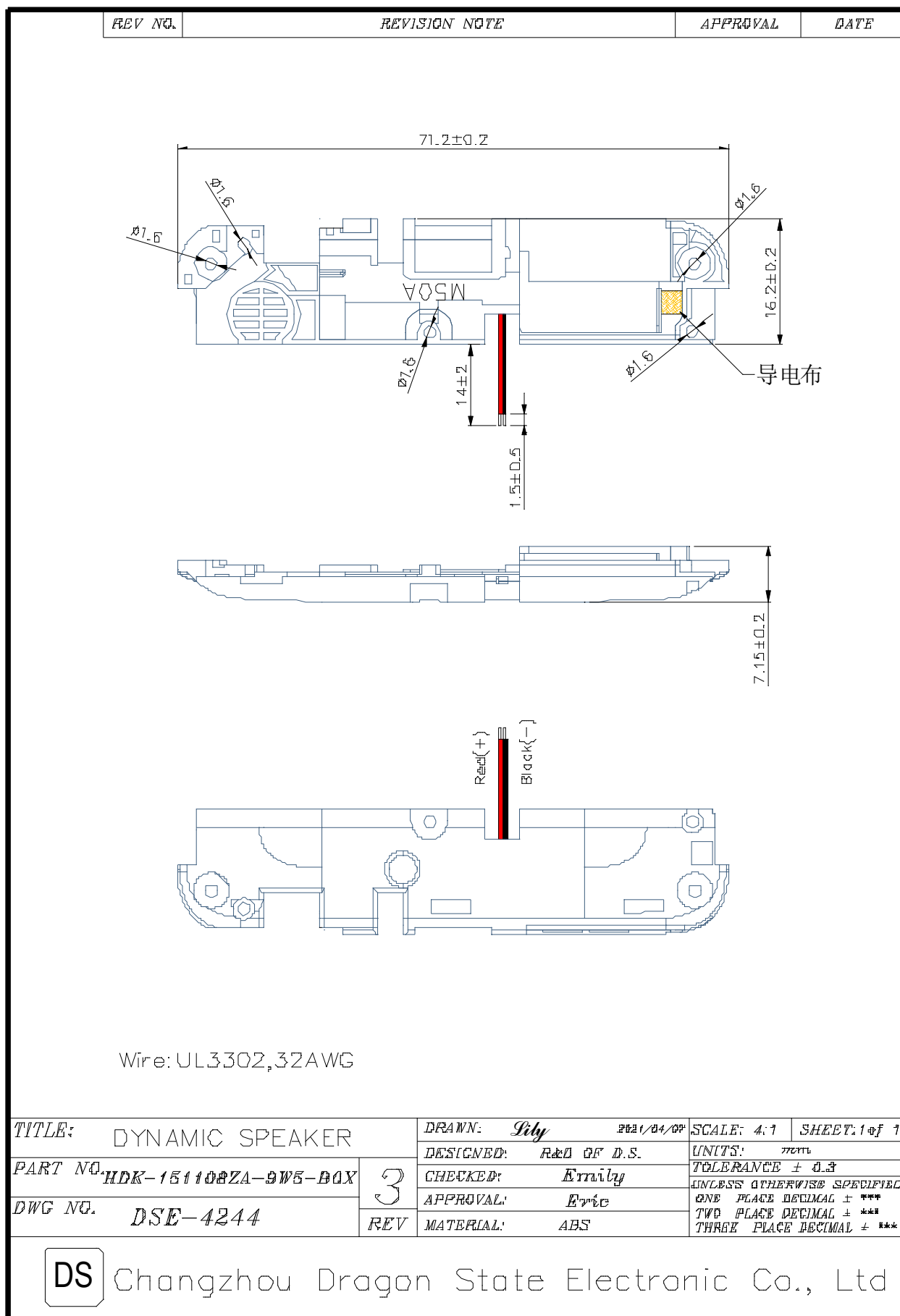
2.3 Frequency Response Curve 频响曲线

FR (1.0W/2.83V At 0.1m in pallet)

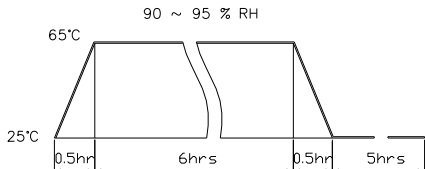


3.Dimension

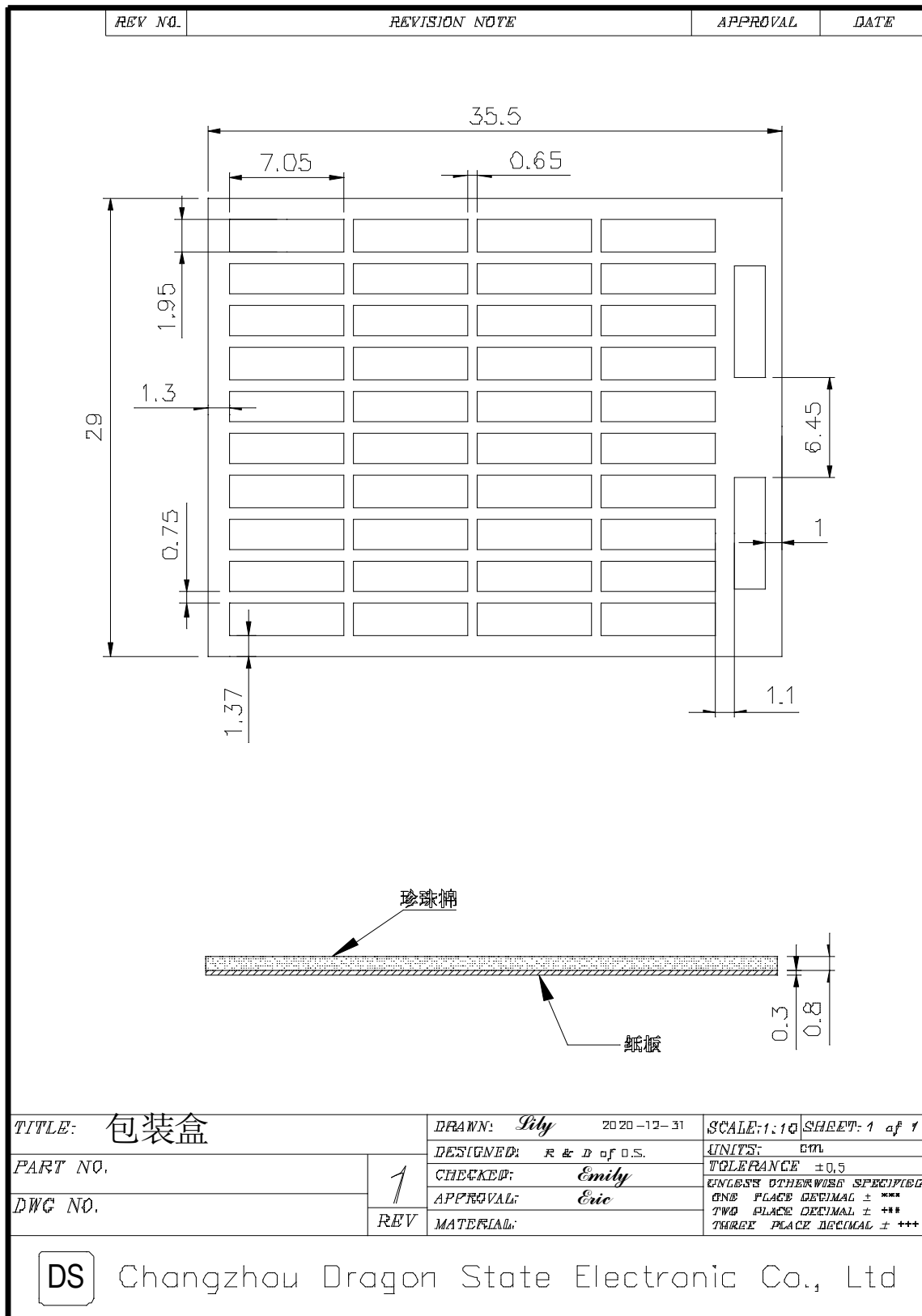




4. Reliability Test 可靠性测试

Items.		Specifications
01	High temp. Test 高温测试	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 持续 96 小时, 在常温下存放 3 小时后测试
02	Low temp. Test 低温测试	Keep 96 hours at $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 持续 96 小时, 在常温下存放 3 小时后测试
03	Humidity test 湿度测试	Keep 96 hours at $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked. $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 相对湿度 95%持续 96 小时, 在常温下存放 3 小时后测试
04	Temp./Humidity cycle 温湿度循环测试	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of; 在以下条件 5 次循环, 每次 12 小时, 在常温下存放 3 小时后测试  The graph shows a temperature cycle between 25°C and 65°C. The temperature rises from 25°C to 65°C over 0.5 hours, stays at 65°C for 6 hours, and then falls back to 25°C over 0.5 hours. The relative humidity is 90% to 95% RH during the 6-hour high-temperature plateau. The total cycle time is 7 hours (0.5 + 6 + 0.5). A 5-hour dwell at 25°C follows each cycle.
05	Thermal cycle test. 热循环测试	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. 低温 $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 高温 $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 一小时一个周期, 同一个试验箱 5 个周期
06	Vibration 振动测试	10~200~10Hz sin-wave sweep 15min. 5G(constant) X,Y, Z 3 direction. 2 hours each, total 6 hours. 10~200~10Hz 正弦波振动 15 分钟, X,Y, Z 三个面, 2 小时一次, 共 6 小时
07	Fix drop test 固定跌落测试	Fix on jig. Then drop from 152cm height to the concrete floor X, y, z 6 direction. 5 times each, total 30 times. 固定夹具中, 152cm 跌落水泥地, X,Y, Z 六个面, 每面 5 次, 共 30 次
08	Free drop test 自由跌落测试	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times. 100cm 跌落水泥地, X,Y, Z 六个面, , 每面 1 次, 共 6 次
09	Rated Power test 额定功率测试	Rated Power pink noise is applied for 96 hours 额定功率粉噪声持续 96 hours
10	Max Power test 最大功率测试	Max power 1 min on – 2 min off 10 cycles. 最大功率 1 分钟通, 停 2 分钟, 10 次循环
11	Terminal strength test 拉力测试	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection 1kg 拉力 30 秒, 没有导致产品损坏
Criterion: After these test , the change of S.P.L shall be within $\pm 3 \text{ dB}$. 所有试验后, 音压都在 $\pm 3 \text{ dB}$ 之内		

5.Packing 包装



[illegible]