SPECIFICATION FOR APPROVAL

承　　認　　書

Description	:	**Micro Dynamic Speaker**
Kingstate Part No.	:	**KDSG37045-020-A3**
Customer's Model No.	:	
Specification No.	:	**DRD-B432**
Number Of The Edition	:	**1.1**

CUSTOMER'S APPROVED SIGNATURE		

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KINGSTATE

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Approved by	Checked by	Issued by
08/08/17	2017.8.7.	王川 **2017.08.07**

A. SCOPE 範疇

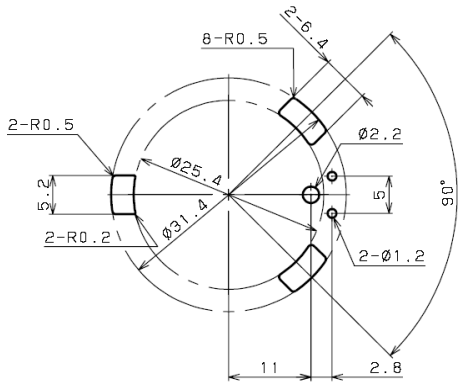
This specification applies speaker, **KDSG37045-020-A3**

此規格書適用於喇叭, **KDSG37045-020-A3**

B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	Φ 37.0 x 22H	
2	Power Rating 功率		W	Rated. 0.2/ MAX. 0.4	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	45 ± 15%	At 1.5KHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	480 ± 20%	At 1.0V
5	Output S.P.L. 音壓位準		dB	92 ± 3dB(0.2 w/0.1m)	At 1.0k,1.5k,2.0k,3.0kHz (Average figures)（Sinewave）
6	Frequency Range 有效頻寬		Hz	380---10K	Output S.P.L. ±10dB
7	Distortion 失真		%	5% Max.	At 1.0kHz , 0.2W
8	Voice Coil 音圈		mm	φ 13.28	
9	Magnet 磁石		mm		Nd-Fe-B（釹鐵硼）
10	Operating temp. 操作溫度		℃	-40 ~ +105	
11	Buzze & Rattle 異常音				Not be audible at 3.0V sine wave between Fo ~ 10KHz 輸入 3.0V 正弦波從 Fo 到 10KHz 之間無異常音
12	Weight 重量		g	9.3	
13	Material 材質			Inner cover: PBT+15% GF cover :Translucent PC / L-1250Y	
14	Environmental Protection Regulation 環保法規			RoHS 2.0	

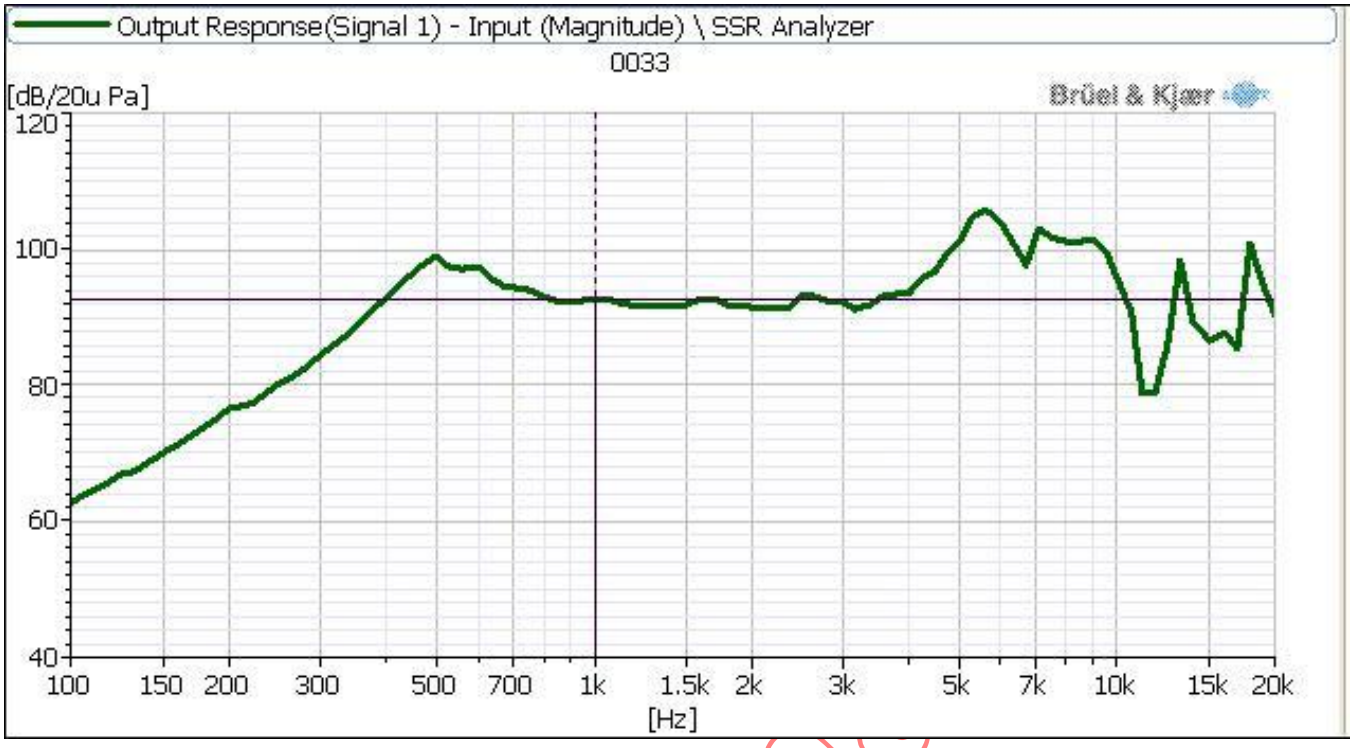
C. RECOMMENDED PCB LAYOUT DRAWING 建議安裝基板尺寸圖



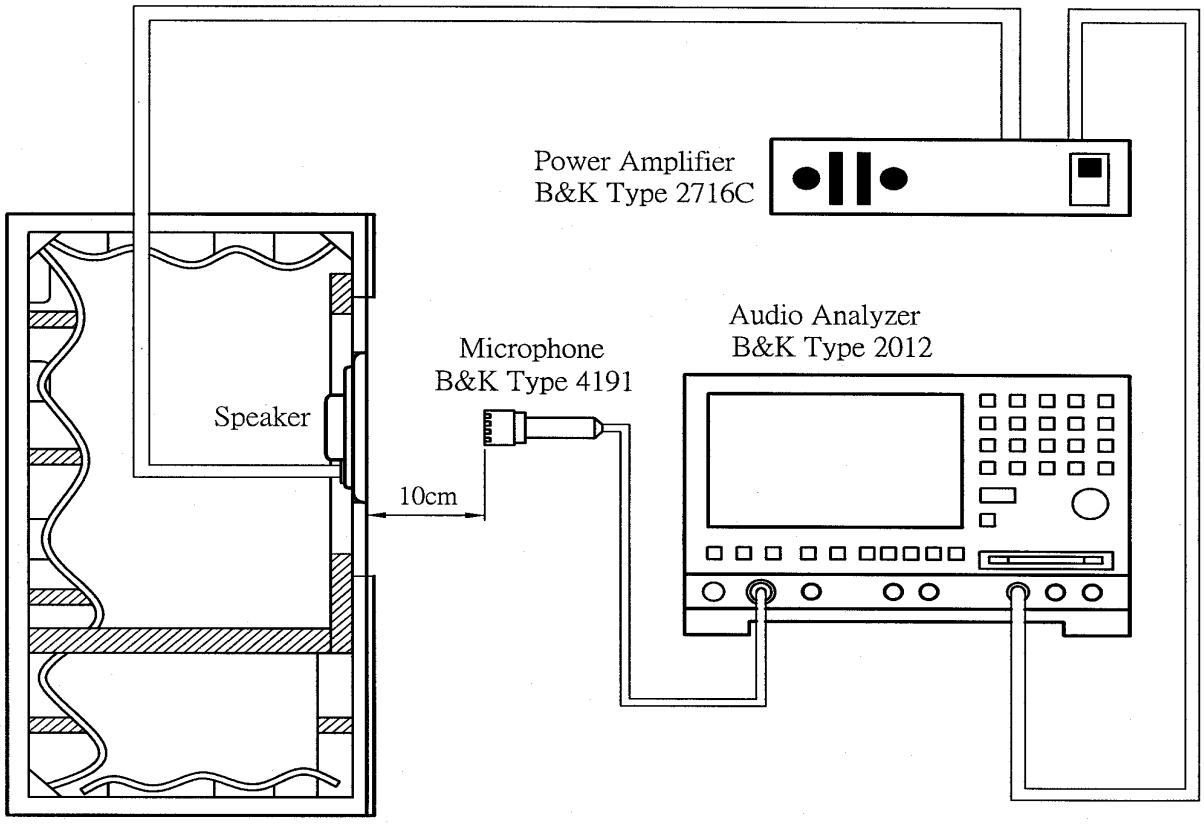
tlerance ±0.1

t=1.6mm

D. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

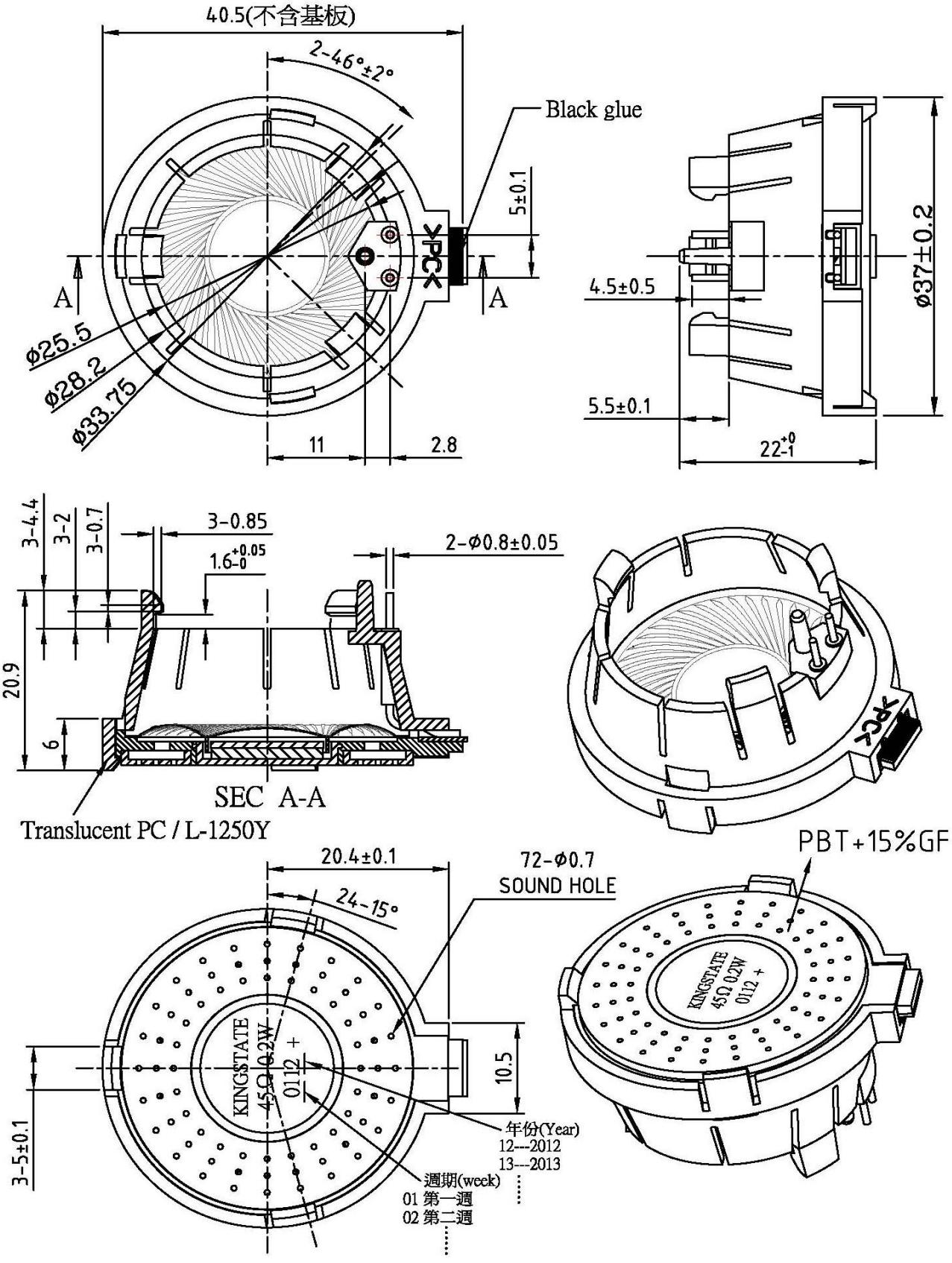


E. MEASUREMENT CIRCUIT 測量線路



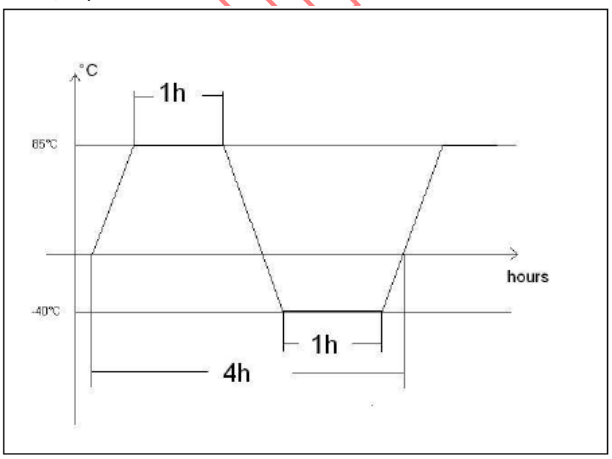
JIS C5531
940mm x 640mm x 1240mm

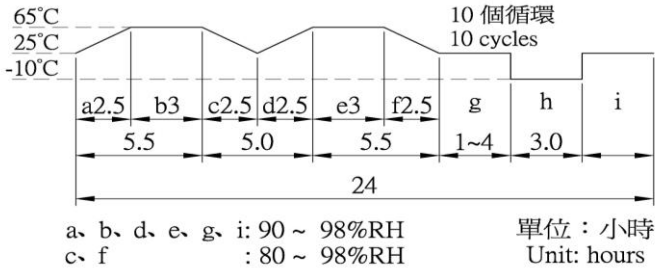
F. APPEARANCE DRAWING 外觀尺寸圖

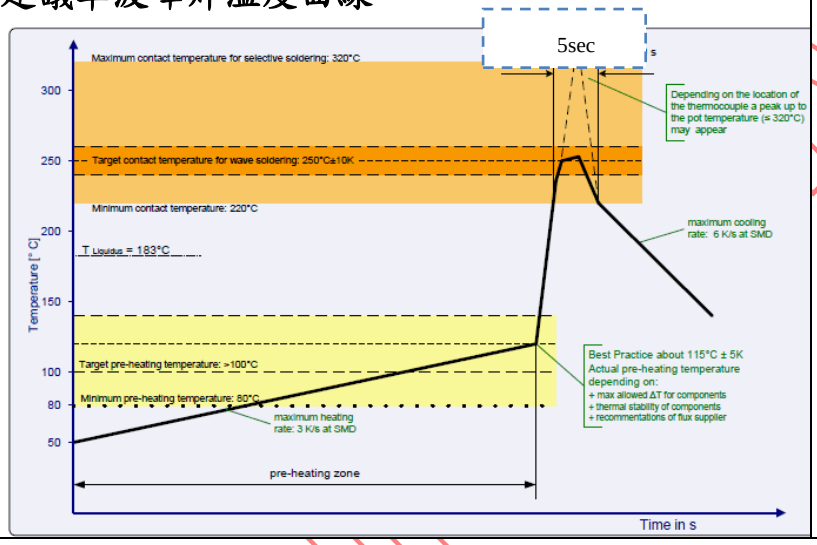


Tol: ± 0.3 Unit: mm

G. RELIABILITY TEST 信賴性試驗

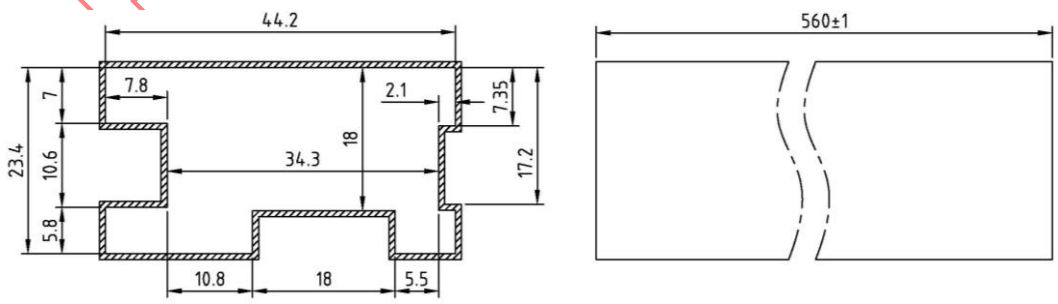
No	Item	Test condition	試驗數量	Evaluation standard
1	Fixed drop Test 固定跌落測試	Fix onto standard Jjg , drop on concrete 100cm height. Every 6 surface x 1 times, Total 6 times. 使用專用治具固定在離地面 100cm 高度跌落，6 面各跌落一次，共計跌落 6 次.	5	Being placed for 4 hours at +25℃, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 3.0V sine wave between Fo ~ 10KHz. Fo should meet initial one. S.P.L. deviation of unit should be within 3Db 經測試後，靜置於+25℃（室溫)環境中 4 小時後，測試後無任何障礙防礙正常操作. 且在輸入 3.0V 正弦波從 Fo 到 10KHz 之間無異常音. Fo 與原規格值相同輸出音壓變化量在 3dB 內
2	vibrations 振動測試	① Pulse shape: sine wave Range of frequency 1 10 – 55 Hz Amplitude +/- 0,375 mm ② Range of frequency 2 55 - 2000Hz Amplitude 5g Frequency sweep 1 oct. / min Duration 24 h each of 3 axis	30	
3	Humidity test 相對濕度測試	After being placed in a chamber at +40±2℃ and 93%RH relative humidity for 500H 置於+40±2℃, 相對濕度 93%環境中 500H	77	
4	Life test 壽命測試	Temperature cycle: total 4h with at least 1h hot and 1h cold (temperature gradient >= 2K/m duration 250 cycles equals 1000h (see figure 1) Number of components: 100 pieces (50 for test signal no. 1, 50each for test signal no. 2) 熱 1 小時，冷 1 小時加溫度變化，共 4 小時為 1 個循環，共要 250 次循環，1000 小時.  Test signal 1:Altemating ON for 50 sec./OFF for 150 sec; Logarithmic Sweep 3.0V_{eff} symmetrical sine signal, 380…10000Hz,sweep time 50 seconds. 測試一 提供 3V 的 380HZ~10KHZ 的對稱正弦波信號，以對數頻率掃描 50sec，ON 50 秒， OFF 150 秒，250 cycles Test signal 2:Atemating ON for 50 sec./OFF for 50 sec; Symmetrical rectangular signal,8V_{PP},18000Hz. 測試二 提供 8Vp-p 的 18KHZ 的方波信號，Duty On 50%，ON 50 秒， OFF 50 秒， 250 cycles	100(各 50pcs)	

5	Temp. cycle test 溫度循環測試		5	
6	Ordinary Temp life 常溫壽命測試	Room Temperature, 440Hz, 0.2W input , working 1000hours 在室溫下，440Hz、0.2W、工作 1000 小時	5	
7	High Temp life 高溫壽命測試	+105℃，440Hz、0.2W input, working 500hours +105℃，440Hz、0.2W、工作 500 小時	5	
8	Low Temp life 低溫壽命測試	-40℃，440Hz、0.2W input, working 500hours -40℃，440Hz、0.2W、工作 500 小時	5	
9	Max power test 最大功率測試	Room temp. input: 440Hz、0.4W, 1min/on-2min/off, 10 cycles. 在室溫下，440Hz、0.4W, 1 分鍾開，2 分鍾關，10 個循環	5	
10	Solder Heat Resistane 端子焊錫耐熱性測試	Solder temperature: 350±10℃ Soaking time: 3.5±0.5sec 焊錫溶解溫度：350±10℃ 浸漬時間：3.5±0.5 秒	5	
11	Solderability 端子焊接性測試	40℃, 90~95%RH 條件下放置 240 小時後， 焊錫槽溶錫溫度：265±5℃ 焊錫浸漬時間：2±0.5sec Pretreatment: 40℃, 90~95%RH x 240hours Soldering into solderbath: Solder Temp. 265±5℃ Soaking Time 2±0.5sec	5	95% surface of leade pins must be covered with fresh solder and no soldering holessshould be found. Pin95%表面要沾錫，不可假焊.
12	PIN Terminal strength 端子拉力強度	Pulled in the direction along the pin axis. 22.2N, 沿著端子方向進行負荷測試	5	No damage and cutting off. 不鬆動,不脫落.
13	Bending Test 卡扣折彎測試	Folder the snap joint back and forth in 90° angle for 3 times 在安裝卡扣腳位處施力, 朝向產品外側來回折彎 90 度, 三次	5	Disconnection of snap joint is not allowed. 卡扣腳位不可斷開

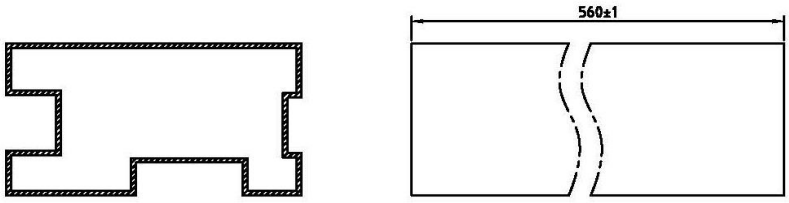
14	Single Wave Soldering 單波峰焊	1. Refer to installment of item C suggestion of the specification, take the below parts section that the PIN, snap joint and position column which are inserted through the PCB as soldering point. 2. Single wave soldering at 260˚ 3. Soldering for 5 second. 1. 依本規格書 C 項建議之安裝方式，PIN 腳、卡扣及塑膠圓定位柱通過 PCB 的部份作為焊點. 2. 單波峰焊 260˚C， 3. 焊錫浸泡時間 5 秒 **Recommended Temperature Profile For single wave soldering** **建議單波峰焊溫度曲線** 	5	1. Apply 1.0KG pull strength that perpendicular to the PCB board on the right side of product for 3 second, no structure damage. 2. Height of plastic position column shall be accorded with size specification. 1. 垂直于 PCB 板在產品正面施加 1.0KG 的拉力，持續 3 秒，而不發生結構性破壞 2. .塑膠圓定位柱過單波峰焊后高度符合尺寸規格

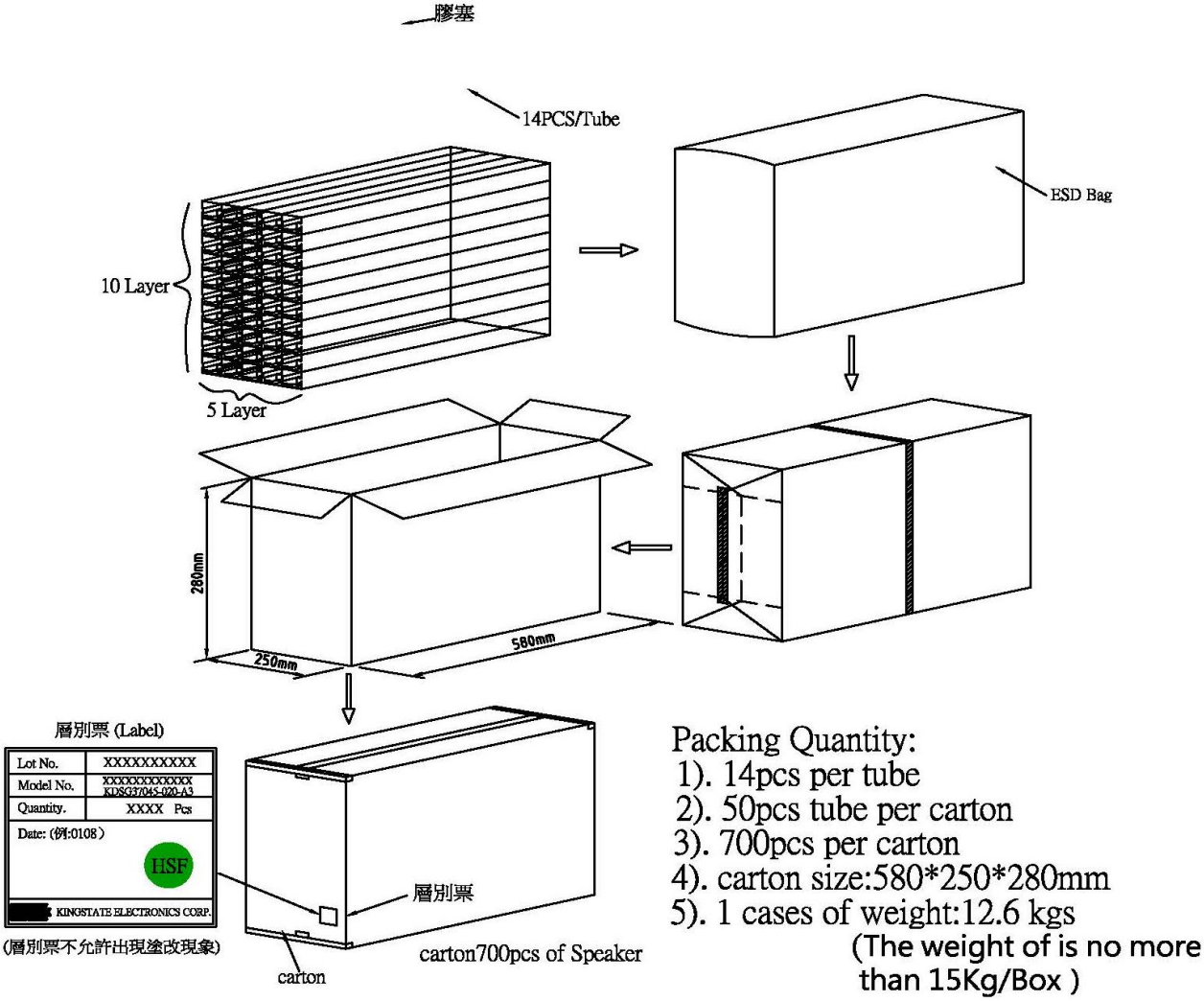
J. PACKING STANDARD 包裝規格

1) Tube Drawing (Material: PS)



2) Carton Packing





Packing Quantity:
1). 14pcs per tube
2). 50pcs tube per carton
3). 700pcs per carton
4). carton size:580*250*280mm
5). 1 cases of weight:12.6 kgs
(The weight of is no more than 15Kg/Box)

3) Packing with wooden board