

SPECIFICATION FOR APPROVAL

承認書

Description : Micro Dynamic Speaker

Singatron Part No. : SES171008S-06D

Customer's Model No. : _____

Specification No. : DRO-7503

Number Of The Edition : 1.2

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

A. SCOPE 範疇

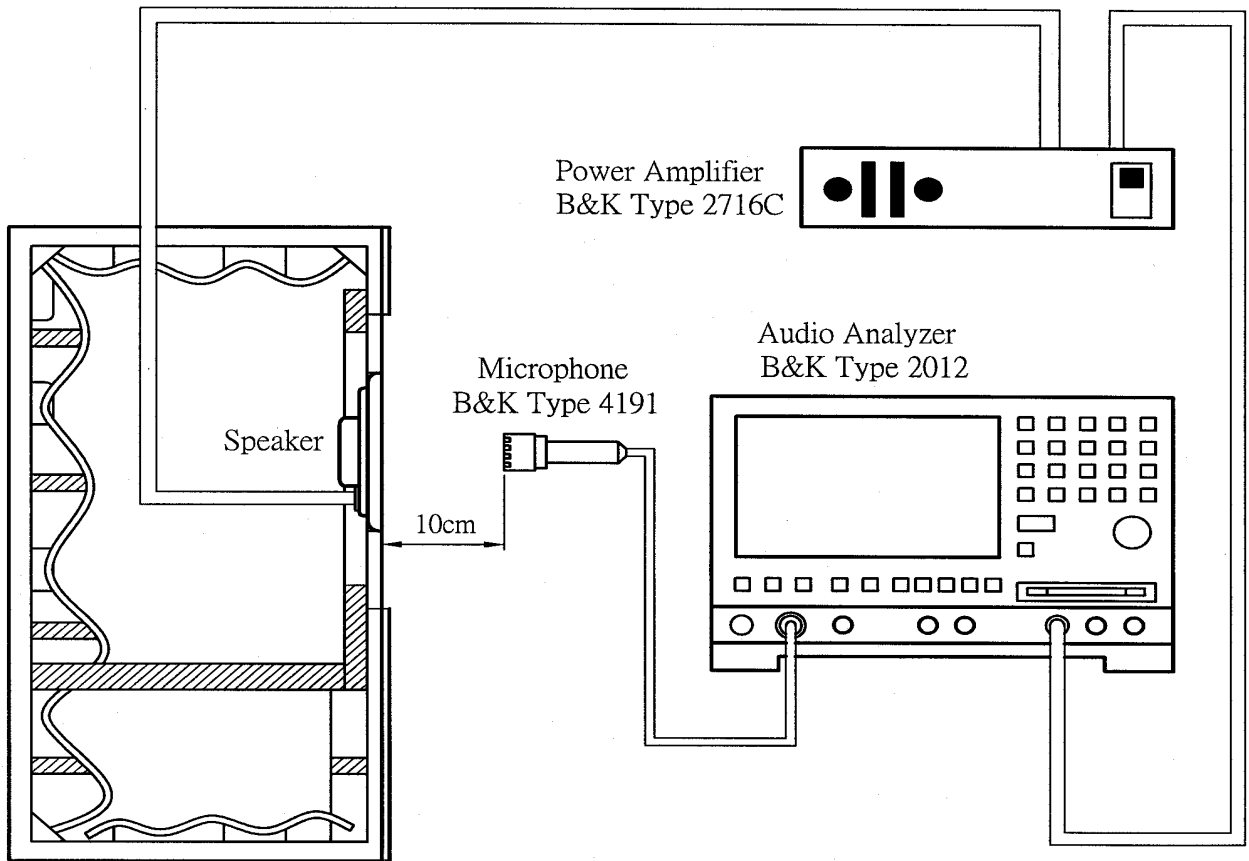
This specification applies speaker, **SES171008S-06D**

此規格書適用於喇叭, **SES171008S-06D**

B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	17.0 x 10.0 x 3.0	Refer to attached drawing in details
2	Power Rating 功率		W	Rated. 0.6/ MAX. 1.0	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	$8 \pm 15\%$	At 2.0KHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	$900 \pm 20\%$	At 1.0V
5	Output S.P.L. 音壓位準		dB	$86 \pm 3dB(0.1w/10cm)$	At 2.0kHz
6	Frequency Rang 有效頻寬		Hz	Fo---20K	Output S.P.L. $\pm 10dB$
7	Distortion 失真		%	10% Max.	At 1.0kHz, 0.1W /0.1m
				5% Max.	At 2.0kHz~10.0kHz, 0.1W /0.1m
8	Voice Coil 音圈		mm		
9	Magnet 磁石		mm		Nd-Fe-B(鈦鐵錳)
10	Flux Density 磁通密度		Gauss		Min.
11	Operating temp. 操作溫度		°C	-30 ~ +70	
12	Buzze & Rattle 異常音				Not be audible at 2.19V sine wave between Fo ~ 20KHz 輸入 2.19V 正弦波從 Fo 到 20KHz 之間無異常音
13	Weight 重量		g	1.3	
14	Material 材質			PBT+15%Glass (Black)	
15	Environmental Protection Regulation 環保法規			RoHS 2.0	

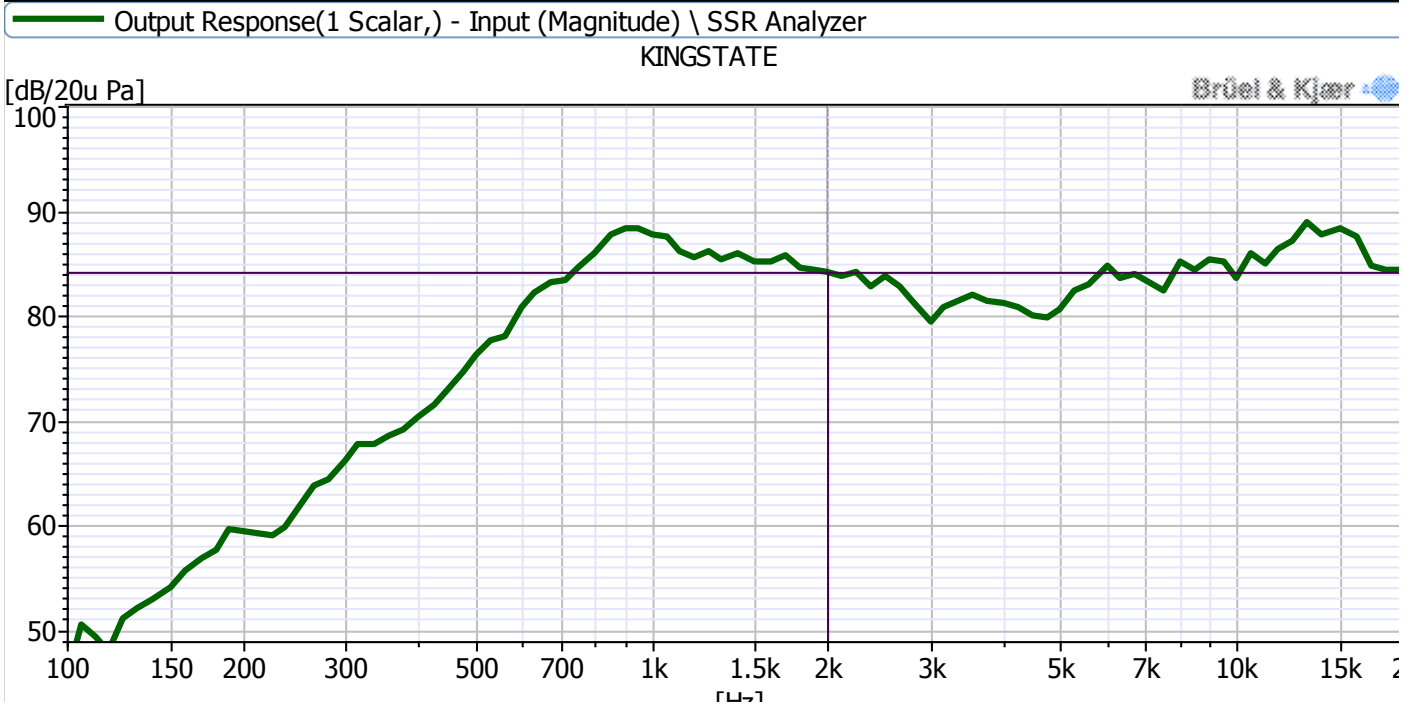
C. MEASUREMENT CIRCUIT 測量線路



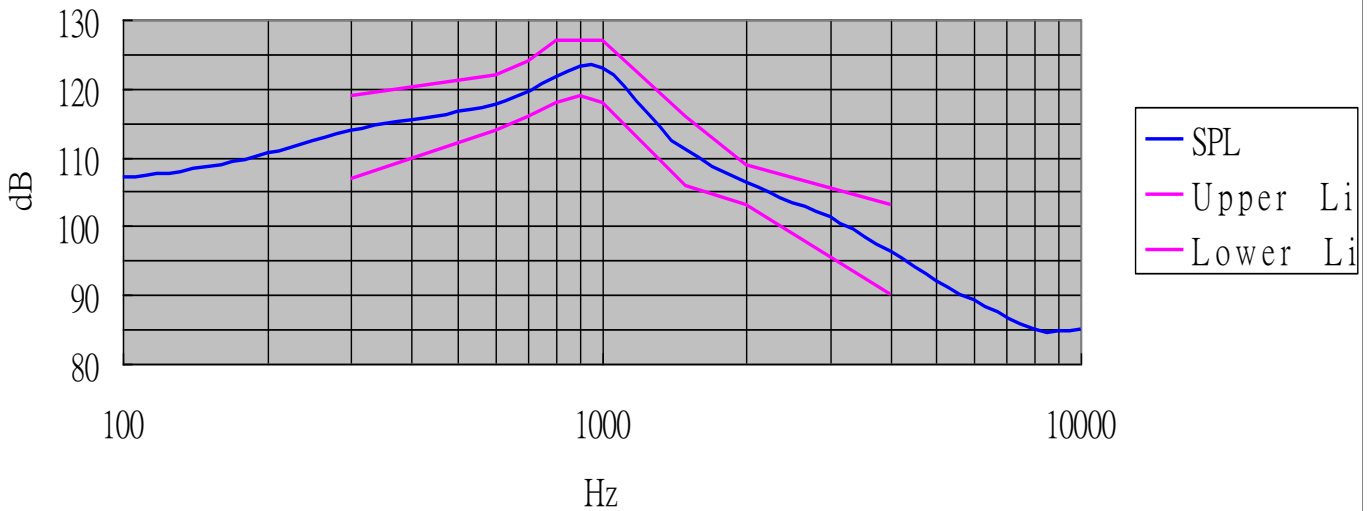
JIS C5531
940mm x 640mm x 1240mm

D. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

A: Frequency Response. Magn dB re 20.00uPA (0.1w/10cm)



E. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

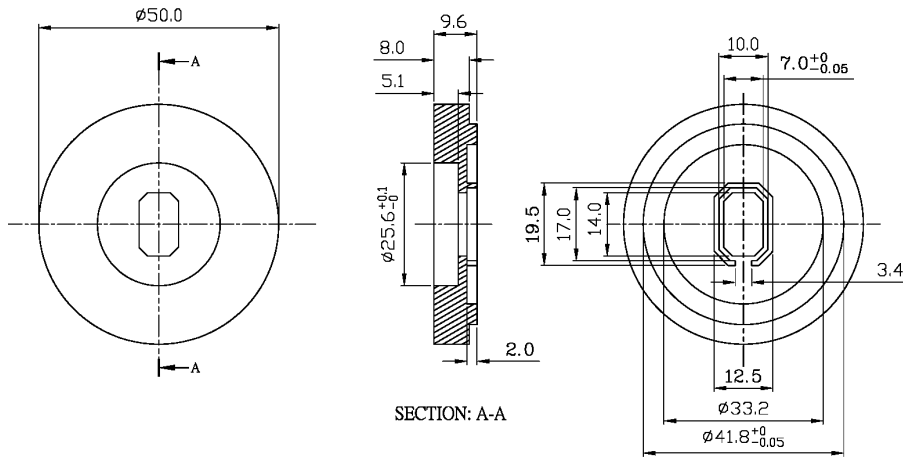


- Note:** 1. The mask is movable about the Y-axis. The following chart gives the upper and lower limits of the mask relative to the reference point at 1kHz.(中心值 125dB)
 2. Sensitivity: 125 ± 3 dB at 1KHz(input 89mV) in pressure field.

Frequency [Hz]	SPL Lower Limit	SPL Upper Limit
300	-15	-5
500	-12	-2
800	-8	-
1000	-3	+3
1200	-10	+3
2000	-23	-10
3000	-27	-16

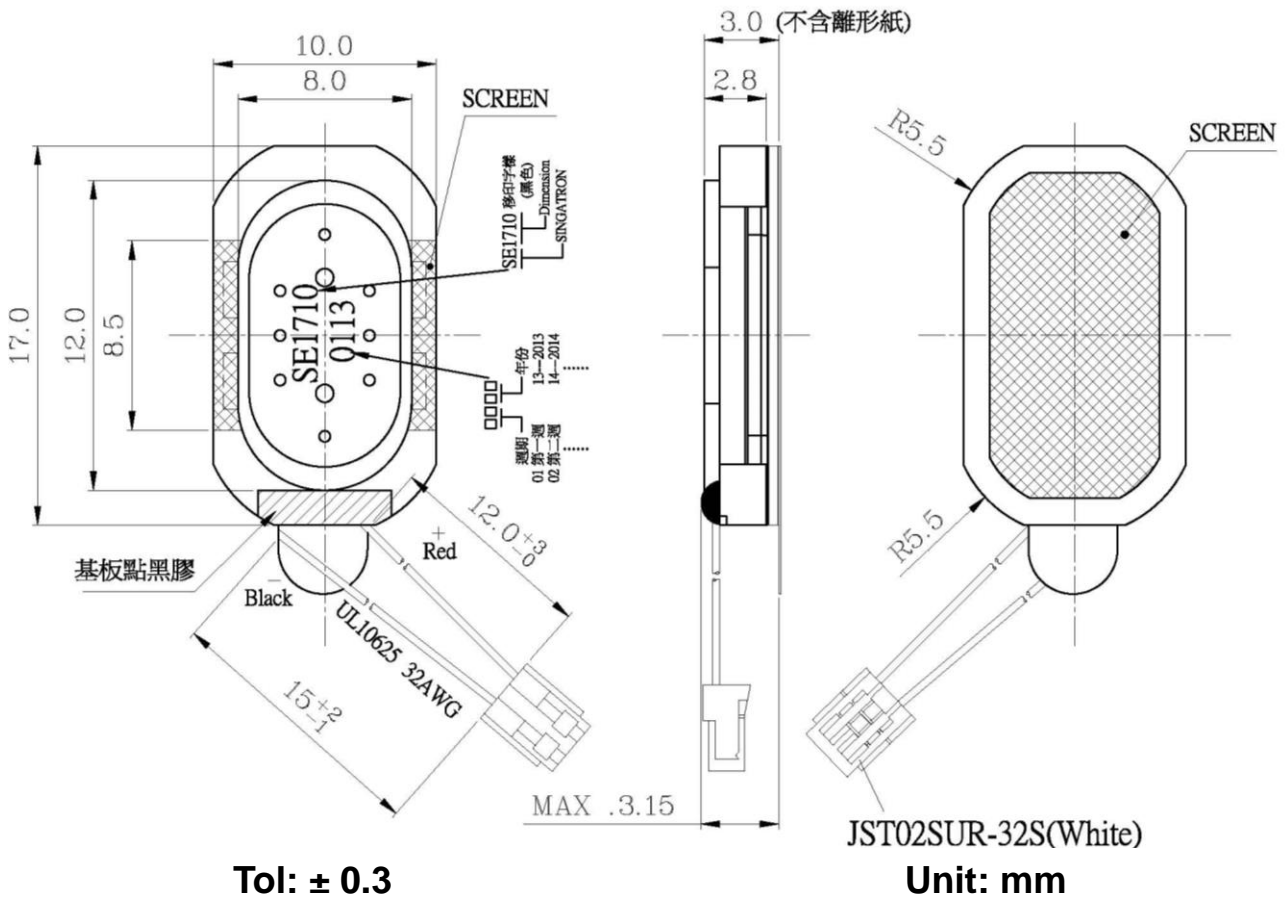
3400	-30	-
4000	-	-17

CUSTOMER IQC 測試治具



Tol: ± 0.1
Unit: mm

F. APPEARANCE DRAWING 外觀尺寸圖



Tol: ± 0.3

Unit: mm

G. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test condition	Evaluation standard
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1	Solderability 焊錫附著性 (Spring Contact excepted) 彈 PIN 類不適用此項	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of +270±5°C for 3±1 seconds. 端子部份浸入松香溶液 5 秒後,再浸入+270±5°C 溶融焊錫槽中 3±1 秒.	90% min. lead terminals shall be wet with solder. (Except the edge of terminal) 浸入端子部份附著焊錫 90%以上.(末端斷面不算)
2	Soldering Heat Resistance 焊錫耐熱性 (Spring Contact excepted) 彈 PIN 類不適用此項	Lead terminal are immersed up to 1.5mm from sounder's body in solder bath of +260±5°C for 3±1 seconds. 距離端子根部 1.5mm 的位置,浸入+260±5°C 的焊錫槽 3±1 秒.	No interference in operation 操作無任何不良
3	Terminal Pull Strength 端子拉力強度	(1) Spring Contact: Applied 3N (0.306kg) load to the Spring Contact for 30 sec. 對彈 PIN 施以 3N (0.306kg) 拉力 30 秒 (2) Terminal : Applied 9.8N (1.0kg) load to the Terminal for 30 sec. 對端子施以 9.8N (1.0kg) 拉力 30 秒	No damage and cutting off 端子不鬆動,不脫落.
4	Vibration Test 振動測試	Speaker shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 per-pendicular directions for 2 hours. 振動週波數 10~55Hz、全振幅 1.5mm 於 X.Y.Z 3 個方向,各 2 小時.	No obstacle to be harmful to normal operation; damages, cracks, rusts and distortions. Should not be audible at 2.19V sine wave between Fo ~ 20KHz
5	Drop Test 落下測試	Drop the speakers contained in normal box onto the board 40mm thick 10 times from the height of 75cm 將揚聲器置於盒中,自 75 公分高度落在 40mm 木板上共 10 次.	測試後無任何障礙防礙正常操作.且在輸入 2.19V 正弦波從 Fo 到 20KHz 之間無異常音

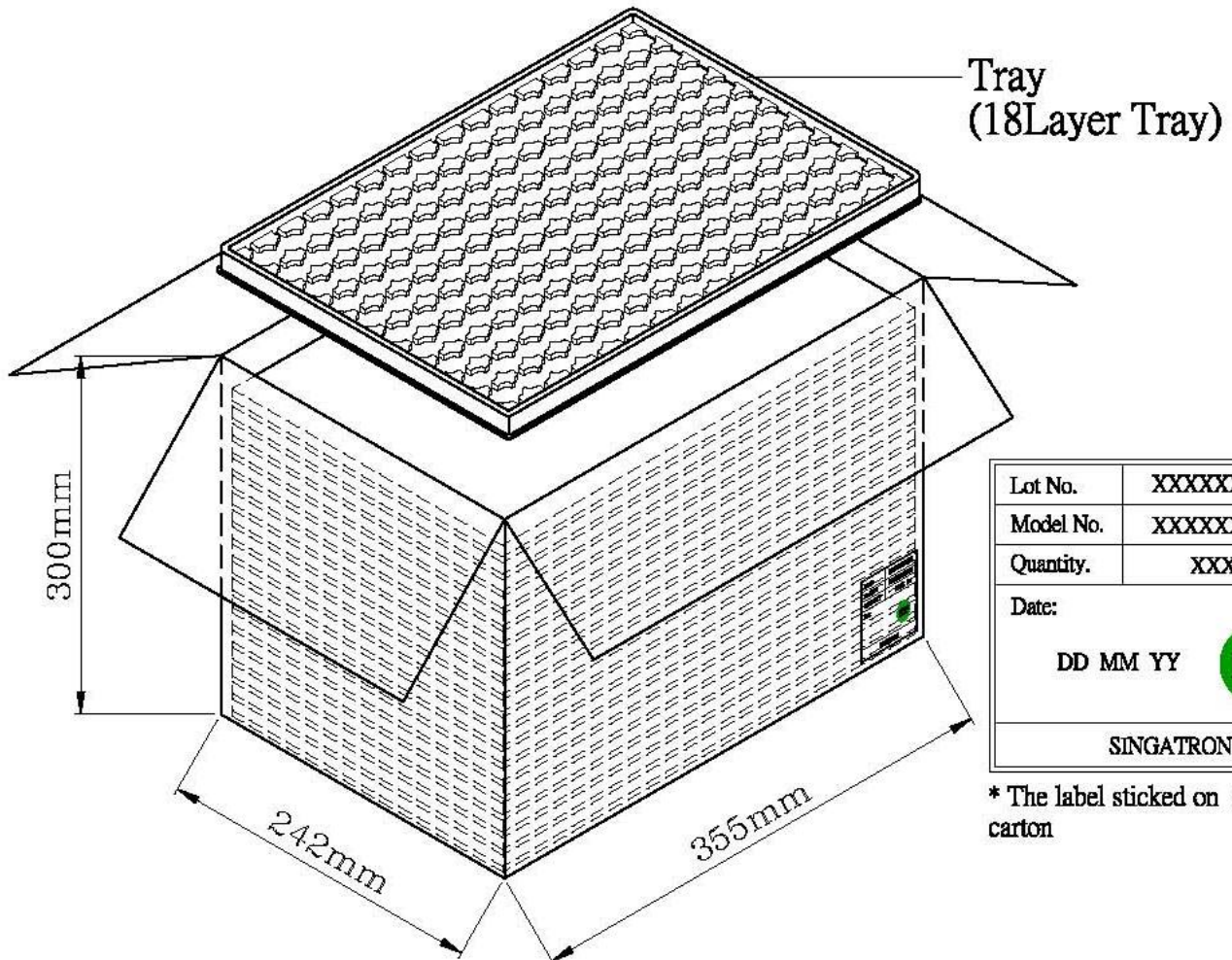
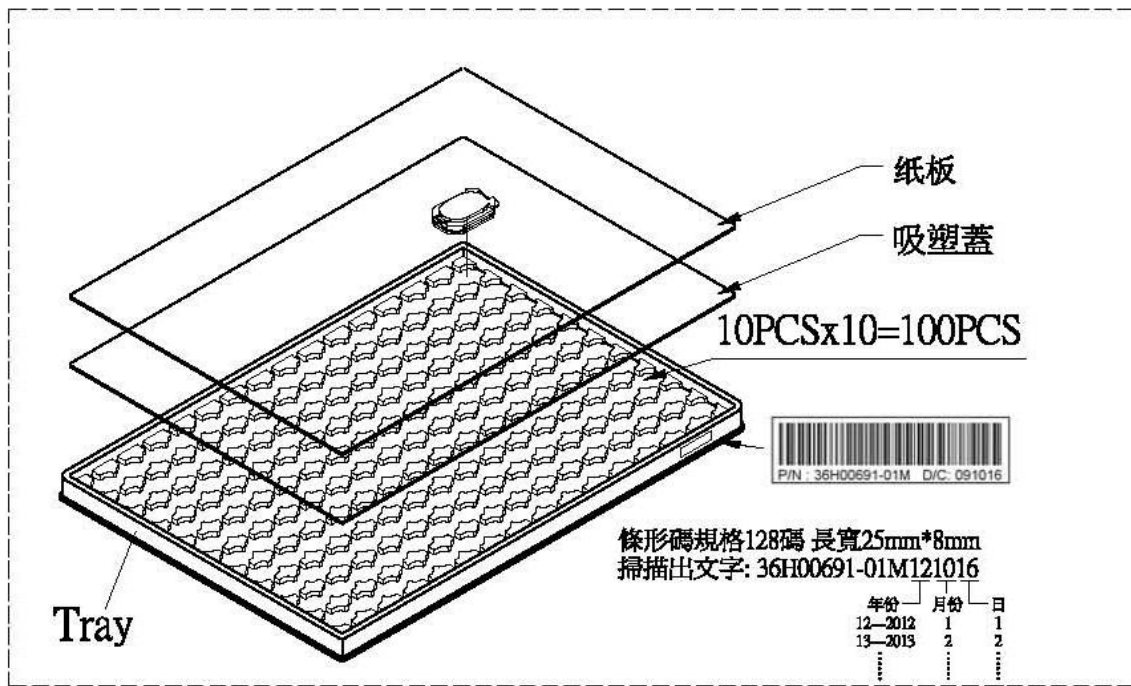
H. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Operating High Temp. Test	Input Rated power to drive the Speaker: Run Pink noise at 20~20KHz; crest factor 6dB, +55°C, 240Hrs.	Being placed for 6 hours at +25°C, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 2.19V sine wave between Fo ~ 20KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB.
2	Operating Low Temp. Test	Input Rated power to drive the Speaker: Run pink noise at 20~20KHz; crest factor 6dB, -10°C, 240Hrs.	
3	Operating Temp./ Humidity Test	Input Rated power to drive the Speaker: Run Pink noise at 20~20KHz; crest factor 6dB, 55°C 95% RH, 240Hrs.	
4	Speaker life test-1	Test condition: 1KHz sine-wave, continuous/Rated Power/96hrs, 50°C. Test criteria: Meet component spec	
5	Speaker life test-2	Test condition: $f_s 15$ at $V_{Rated}/96hrs, 50^\circ C$ (log sweep up from $f_s 0.85$ to $1.15 f_s$ in 0.5 sec and log sweep down from $1.15 f_s$ to 0.85 in 0.5 sec, repeating cycles)	
6	Non-Operating Temp./Humidity Test	70°C 90%rh, 240Hrs	
7	Non- Operating Low Temp. Test	-30°C, 240Hrs	
8	Non-Operating Thermal Shock Test	Test condition : 70°C /1.5hrs → -30°C /1.5hrs one cycle, total 10 cycles. Transition time must be lower than 10 second. The test zone during Hot/cold transition shall be reached steady state within 5 minutes.	
9	Shock Test	Half-sine shock, 500G, duration: 2ms, perform one shock for each face, total 6 faces.	
10	MTBF	Test condition: at least 10 days test time with any AF Pink noise at 20~20KHz with crest factor 6dB or other standard pink noise filter generator (IEC-268-5 or IEC-268-1C), 40°C. Test criteria: Meet component spec	

TEST CONDITION.

Standard Test Condition :	a) Temperature : +5 ~ +35°C	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件 :	a) 溫度 : +5 ~ +35°C	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	a) Temperature : +25 ± 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件 :	a) 溫度 : +25 ± 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

I. PACKING STANDARD 包裝規格



Tray	344mmx231mmx16mm	1x100PCS=100PCS
Carton Box	355mmx242mmx300mm	100PCSx18=1800PCS