

SPECIFICATION FOR APPROVAL

承 認 書

Description : Micro Dynamic Speaker

Singatron Part No. : SES251408-15

Customer's Model No. : _____

Specification No. : DRO-7505

Number Of The Edition : 1.2

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

A. SCOPE 範疇

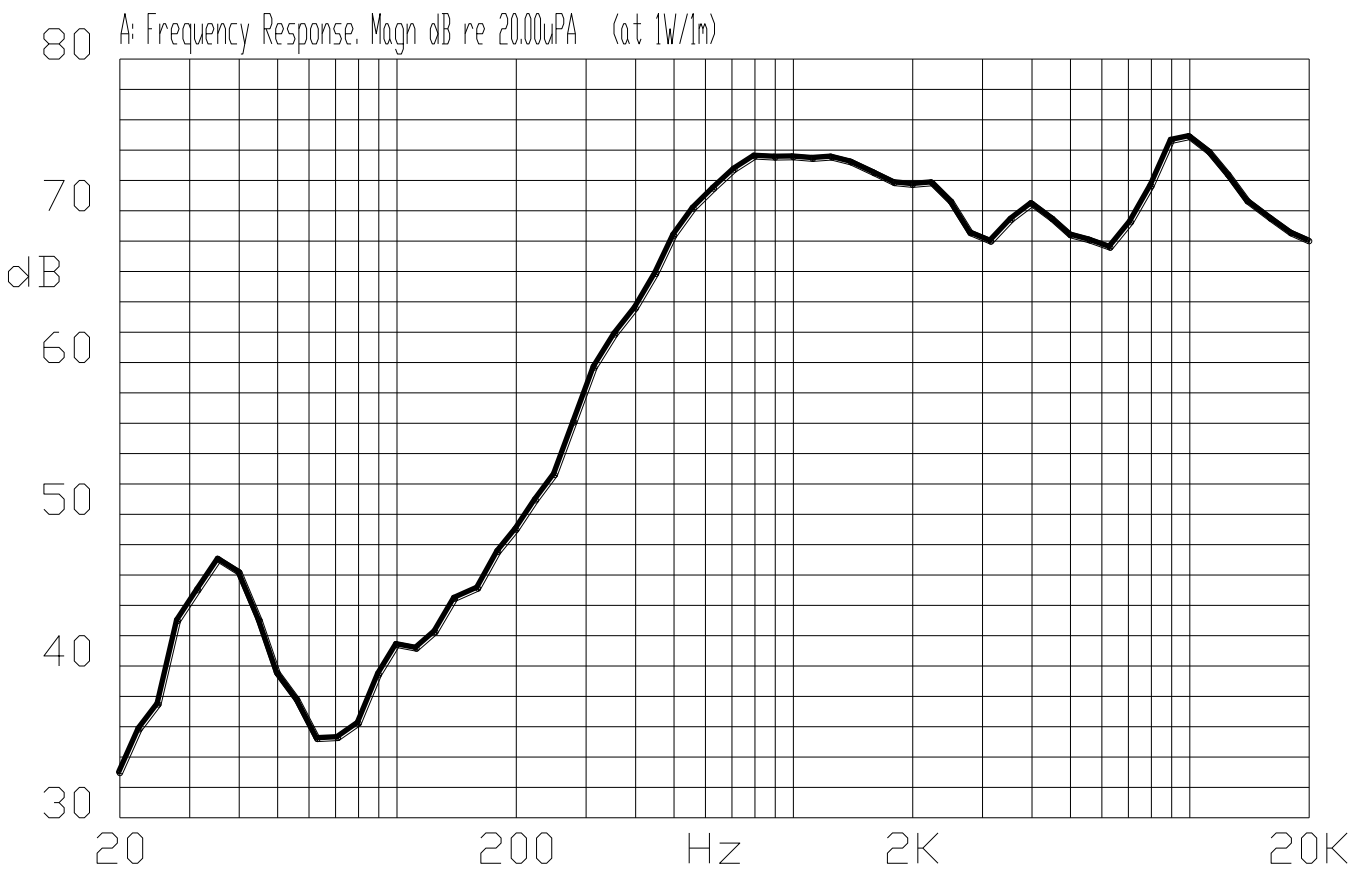
This specification applies speaker, **SES251408-15**

此規格書適用於喇叭, **SES251408-15**

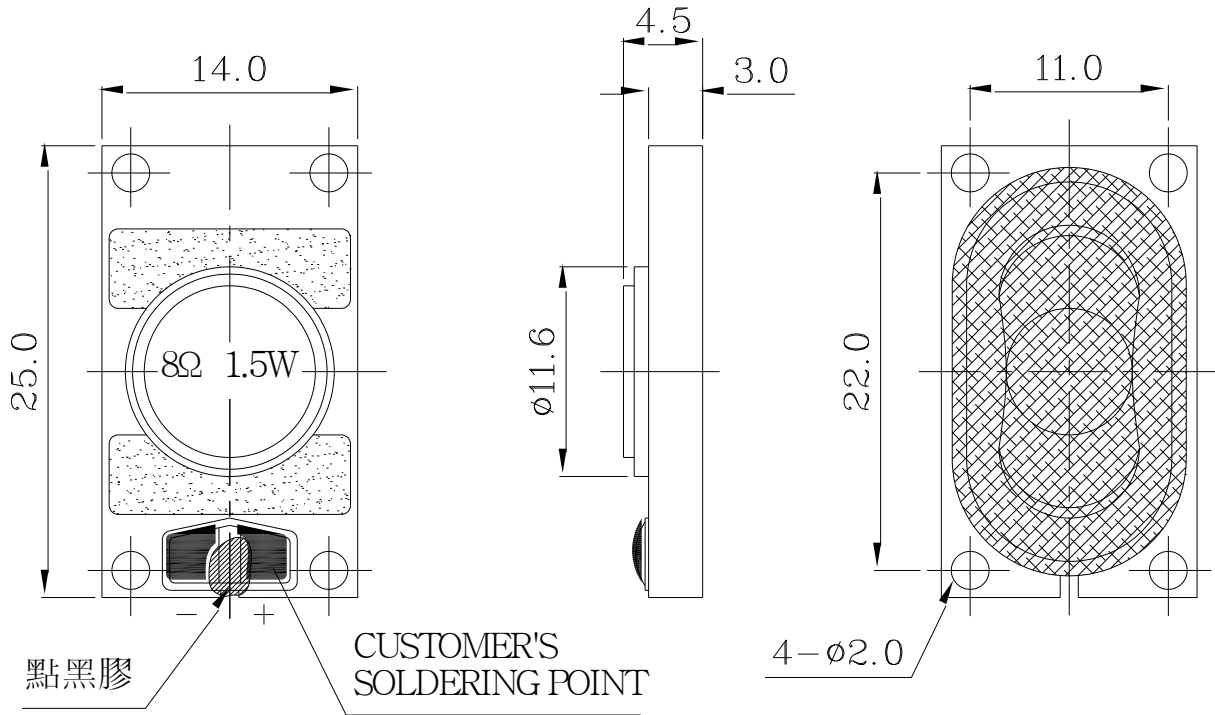
B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	L25.0 x W14.0 x H4.5	
2	Power Rating 功率		W	Rated. 1.5 / MAX. 2.0	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	$8 \pm 15\%$	At 1.4kHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	$750 \pm 20\%$	At 1.0V
5	Output S.P.L. 音壓位準		dB	$94 \pm 3\text{dB}(1.5\text{w}/10\text{cm})$ $73 \pm 3\text{dB}(1\text{w}/1\text{m})$	At 1.0K,1.2K,1.5K,2.0KHz (Average figures)
6	Frequency Rang 有效頻寬		Hz	Fo---20K	Output S.P.L. $\pm 10\text{dB}$
7	Distortion 失真		%	5% Max.	At 1.4kHz, 1.5W
8	Voice Coil 音圈		mm		
9	Magnet 磁石		mm	$\phi 6.8 \times 1.5$	Nd-Fe-B
10	Flux Density 磁通密度		Gauss	-----	
11	Operating temp. 操作溫度		$^{\circ}\text{C}$	-20 ~ +55	
12	Buzze & Rattle 異常音				Not be audible at 3.46V sine wave between Fo ~ 20KHz 輸入 3.46V 正弦波從 Fo 到 20KHz 之間無異常音
13	Weight 重量		g	1.72	
14	Material 材質			ABS UL-94 1/16" HB (Black)	
15	Environmental Protection Regulation 環保法規			RoHS 2.0	

C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線



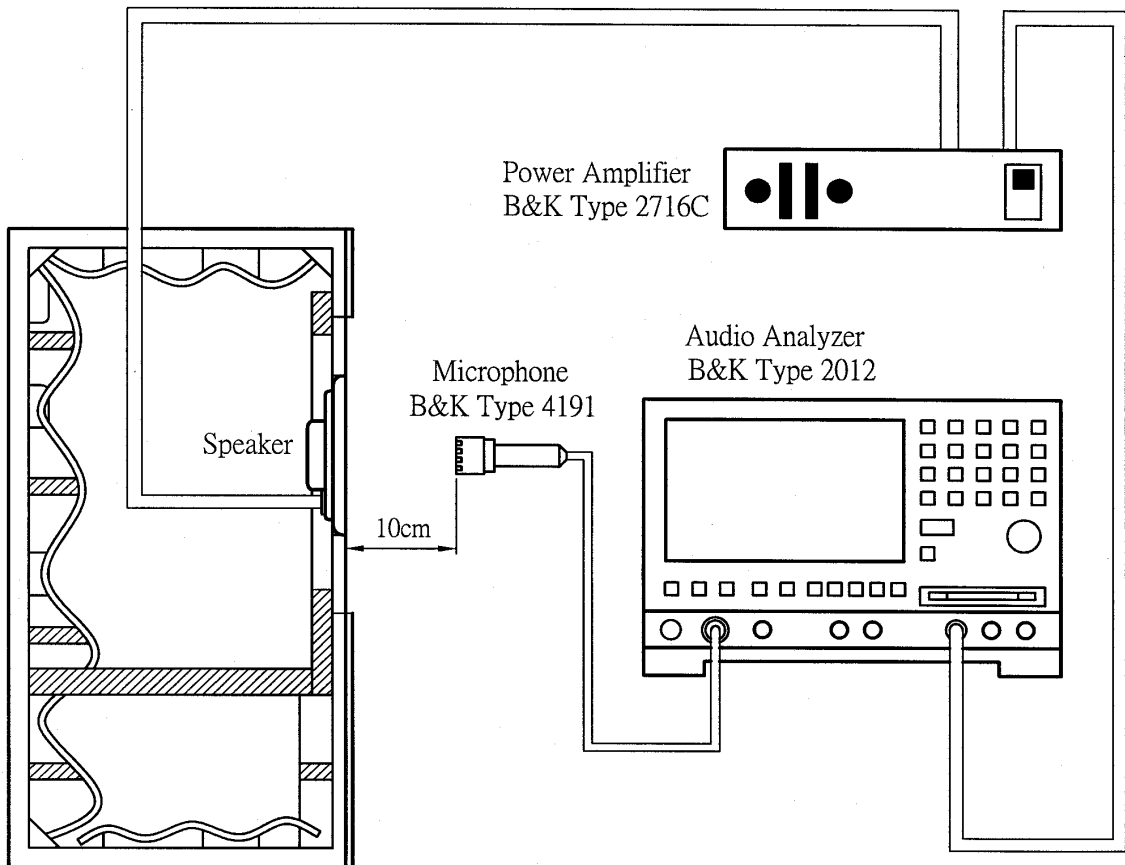
D. APPEARANCE DRAWING 外觀尺寸圖



Tol : ± 0.5

Unit: mm

E. MEASUREMENT CIRCUIT 測量線路



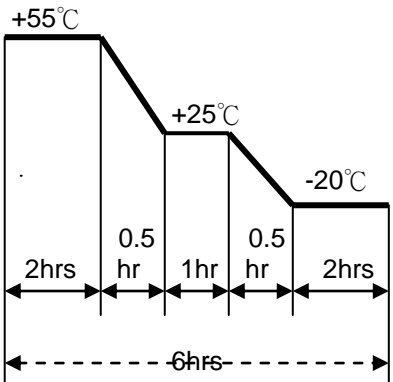
JIS C5531

940mm x 640mm x 1240mm

F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test condition	Evaluation standard
1	PCB Wire Pull Strength PCB 線材拉力	The pull force shall be applied to double lead wire : Horizontal 3.0N(0.306kg) for 30 seconds. 雙線材水平方向施以 3.0N(0.306kg)的力量, 30 秒.	No damage and cutting off 不鬆動, 不脫落.
2	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 perpendicular 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 3.46V sine wave between Fo ~ 20KHz
3	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 3.46V 正弦波從 Fo 到 20KHz 之間無異常音.

G. ENVIRONMENTAL TEST 環境試驗

No.	Item	Test conditions	Evaluation standard
1	High temp. Test 高溫測試	After being placed in a chamber at +55°C for 96 hours 置於+55°C環境中 96 小時.	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 3.46V sine wave between Fo ~ 20KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後, 靜置於+25°C (室溫)環境中 6 小時後, 測試後無任何障礙防礙正常操作.且在輸入 3.46V 正弦波從 Fo 到 20KHz 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	Low temp. Test 低溫測試	After being placed in a chamber at -20°C for 96 hours. 置於-20°C環境中 96 小時.	
3	Humidity test 相對濕度測試	After being placed in a chamber at +40°C and 90±5%RH relative humidity for 96 hours. 置於+40°C, 相對濕度 90±5%環境中 96 小時.	
4	Temp. cycle test 溫度循環測試	The part shall be subjected to 5 cycles. One cycle shall be consist of: 單體承受溫度循環測試 5 次, 其循環內容如圖示: 	

H. Recommended Temperature Profile For Hand Soldering 建議手焊溫度

Hand Soldering
370±10°C / 3±1 Sec

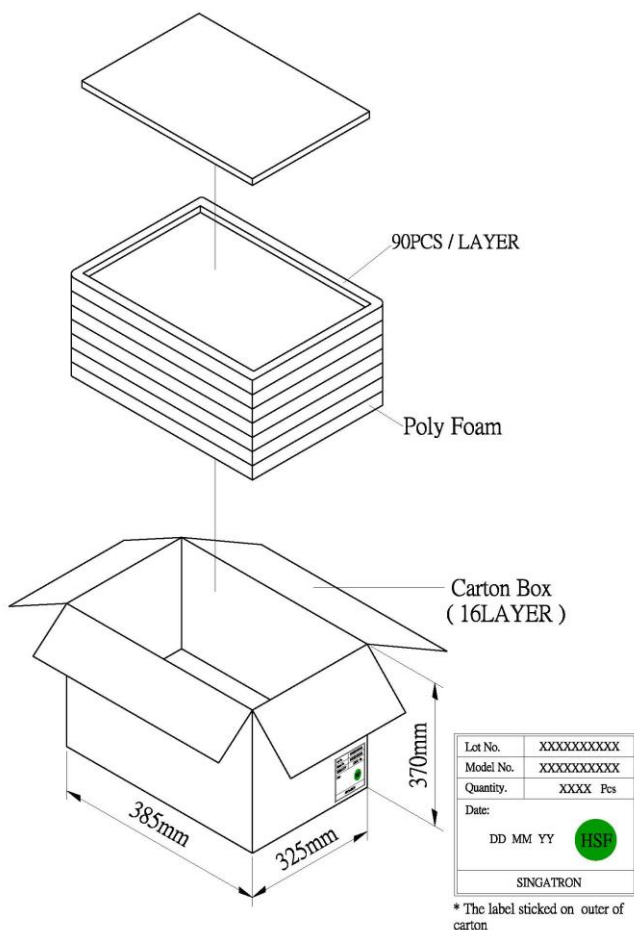
I. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Load test 連續負荷	1.5W white noise is applied for 96 hours, at room temp. 在室溫下,輸入功率 1.5W, 白雜音連續操作 96 小時.	Being placed for 1 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 3.46V sine wave between Fo ~ 20KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後,靜置於+25°C (室溫)環境中 1 小時後,測試後無任何障礙防礙正常操作.且在輸入 3.46V 正弦波從 Fo 到 20KHz 之間無異常音. Fo 與原規格值相同,輸出音壓變化量在±3dB 內.

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

J. PACKING STANDARD 包裝規格



Carton Box 385mmx325mmx370mm 90PCSx16=1,440PCS