

SPECIFICATION FOR APPROVAL

承 認 書

Description : **Micro Dynamic Speaker**

Kingstate Part No. : **KAAG20008C-08W**

Customer's Model No. :

Specification No. : **DOD-8756**

Number Of The Edition : **1.1**

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by
		郭曉蔚 2018.07.02

A. SCOPE 範疇

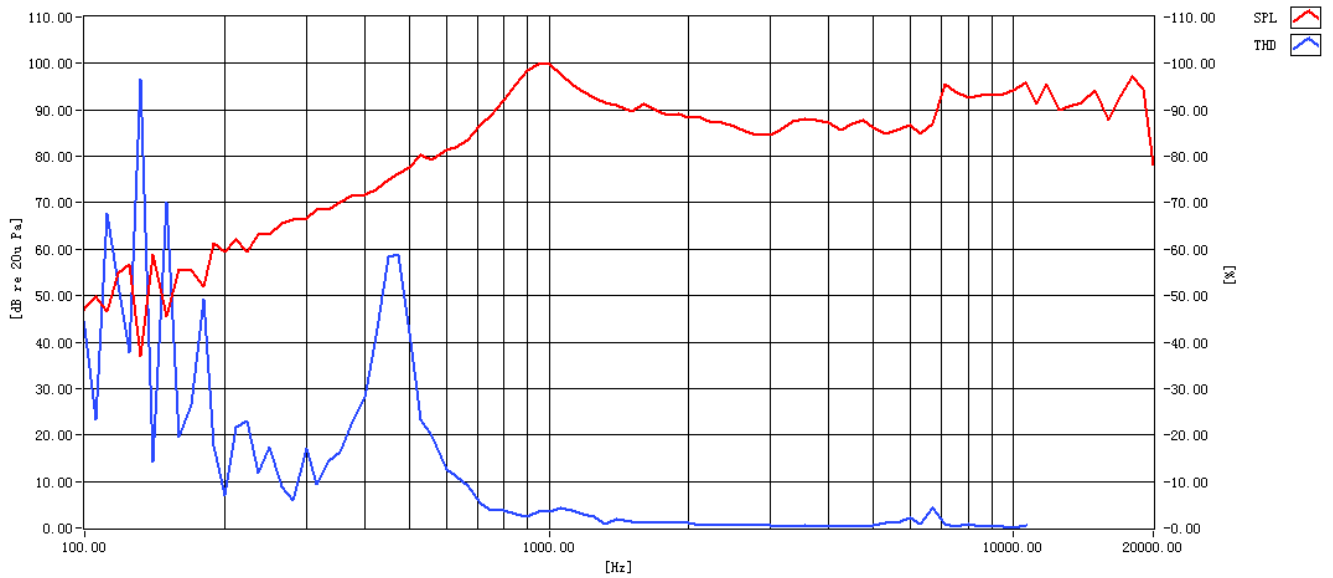
This specification applies speaker, KAAG20008C-08W

此規格書適用於喇叭, KAAG20008C-08W

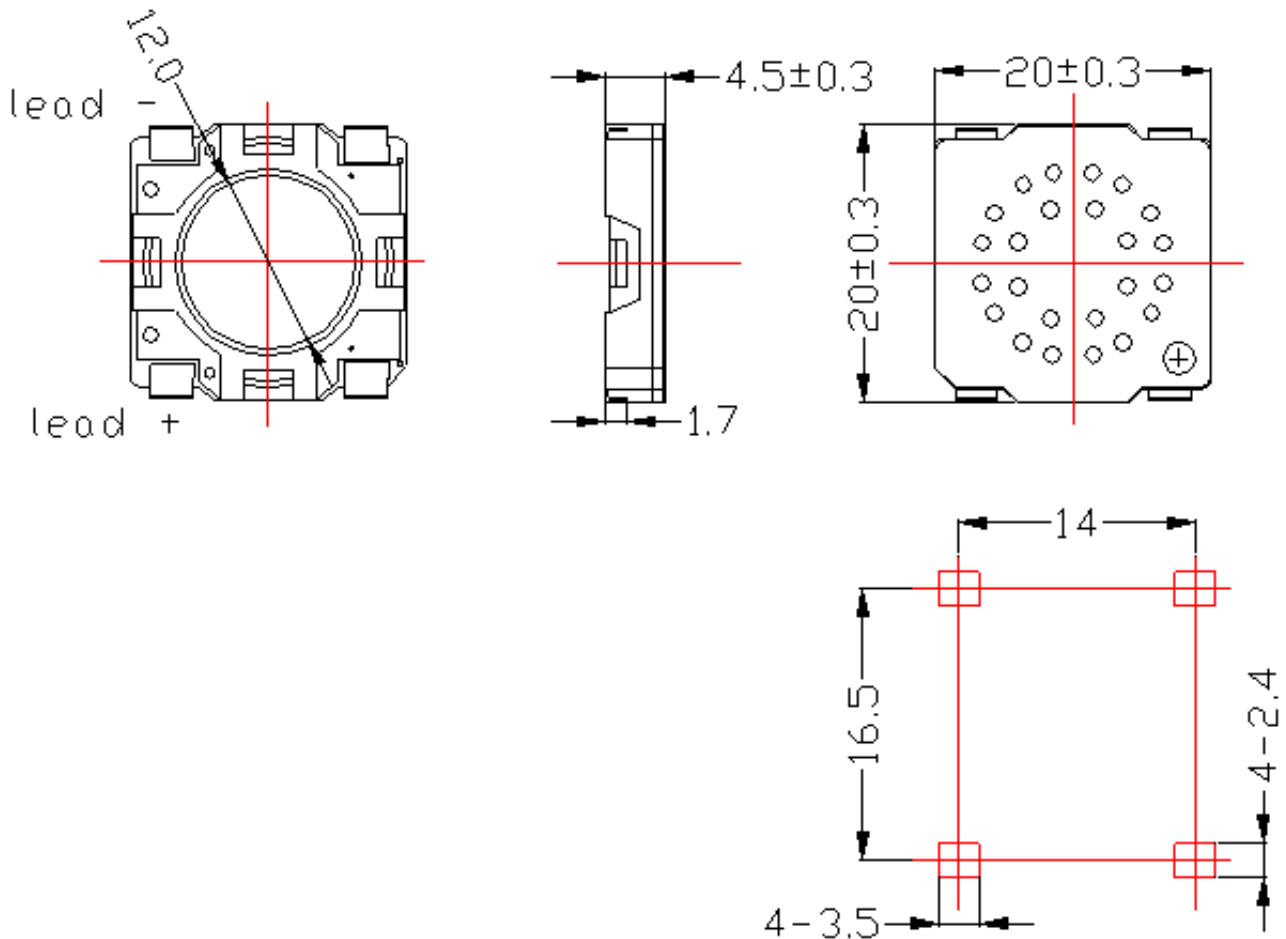
B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	20 x 20 x 4.5	
2	Power Rating 功率		W	Rated. 0.8 / MAX. 1.2	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	$8 \pm 15\%$	At 1.0kHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	$850 \pm 15\%$	At 1.0V
5	Output S.P.L. 音壓位準		dB	$90 \pm 2\text{dB}(0.5\text{w}/10\text{cm})$	At 1.0k,1.6k,2.0k,3.2kHz (Average figures)
6	Frequency Range 有效頻寬		Hz	F0---20K	
7	Distortion 失真		%	10% Max.	At1.0kHz 0.5W
8	Voice Coil 音圈		mm		
9	Magnet 磁石		mm	$\varphi 6.7 \times 1.1$	Sm2Co17
10	Flux Density 磁通密度		Gauss		
11	Operating temp. 操作溫度		°C	-40 ~ +85	
12	Buzze & Rattle 異常音		V	2.53	Not be audible at 2.53V sine wave between Fo ~ 20KHz 輸入 2.53V 正弦波從 Fo 到 20KHz 之間無異常音
13	Weight 重量		g	1.5	
14	Material 材質			LCP	
15	Environmental Protection Regulation 環保法規			RoHS 2.0	

C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

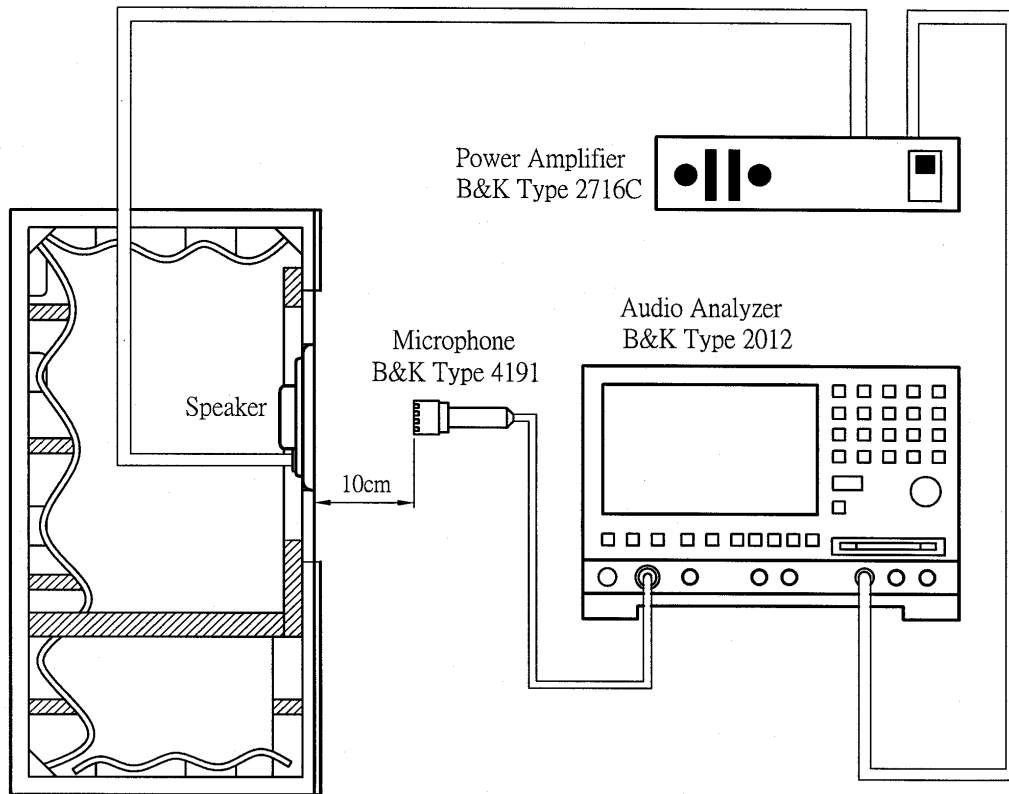


D. APPEARANCE DRAWING 外觀尺寸圖



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	Solderability 焊錫附著性	Lead terminals are immersed in solder bath of $+270\pm 5^{\circ}\text{C}$ for 3 ± 1 second. 端子置於錫膏內,錫膏溫度: $+270\pm 5^{\circ}\text{C}$ 焊接時間: 3 ± 1 秒.	95% surface of lead pads must be covered with fresh solder 錫膏須覆蓋端子上方 95%
2	Soldering Heat Resistance 焊錫耐熱性	The product is followed the reflow temperature curve to test its reflow thermo stability. 產品依照迴焊溫度曲線測試迴焊耐熱性.	No interference in operation 操作無任何不良
3	Terminal Mechanical Strength 端子強度	Lead pads shall be soldered on the pc board, and the force 9.8N (1.0kg) shall be applied behind the part for 10 seconds. 將端子焊在 PC 板上後,對單體施以 9.8N(1.0kg)拉力 10 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 2.53V sine wave between $F_0 \sim 20\text{KHz}$
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 2.53V 正弦波從 F_0 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 +85°C for 96 hours 置於+85°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 2.53V 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 2.53V 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 -40°C for 96 hours. 置於-40°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 consist of: 單體承受溫度循環測試 5 次, 其循環內容如圖示: 	

H. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Load test 連續負荷	0.8W white noise is applied for 96 hours, at room temp. 在室溫下, 輸入功率 0.8W, 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 2.53V 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 2.53V 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.

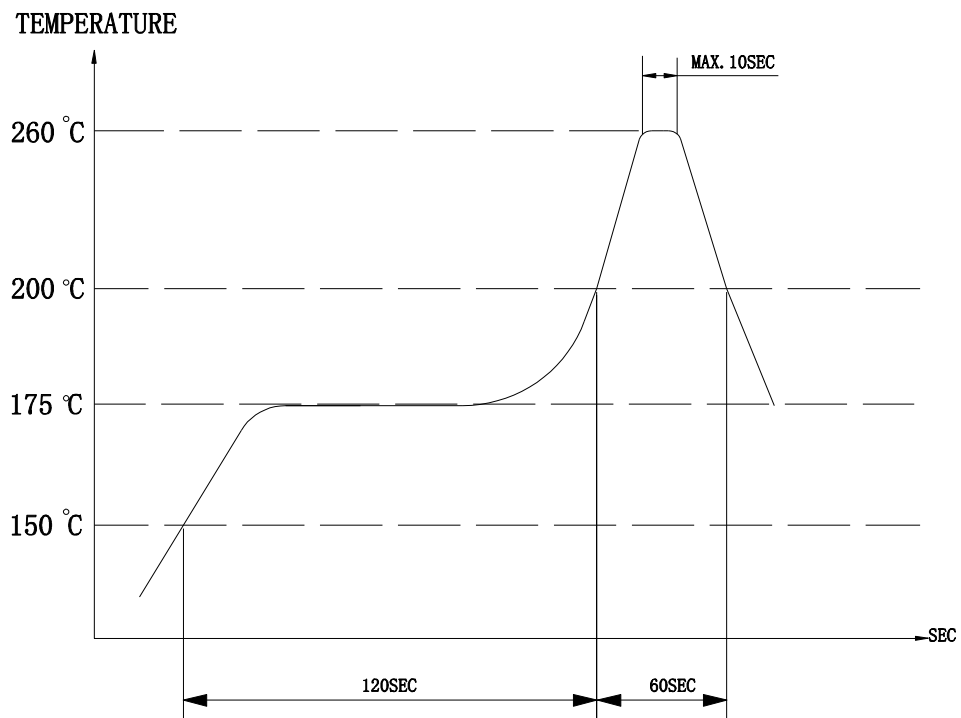
Standard Test Condition : a) Temperature : +5 ~ +35°C b) Humidity : 45-85% c) Pressure : 860-1060mbar
 一般測試條件 : a) 溫度 : +5 ~ +35°C b) 濕度 : 45-85% c) 氣壓 : 860-1060mbar
 Judgement Test Condition: a) Temperature : +25 ± 2°C b) Humidity : 60-70% c) Pressure : 860-1060mbar
 爭議時測試條件 : a) 溫度 : +25 ± 2°C b)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

I. Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線

(1)Recommendable reflow soldering condition is as follows

(Reflow soldering is twice)

Note:It is requested that reflow soldering should be executed after heat of product goes down to normal.



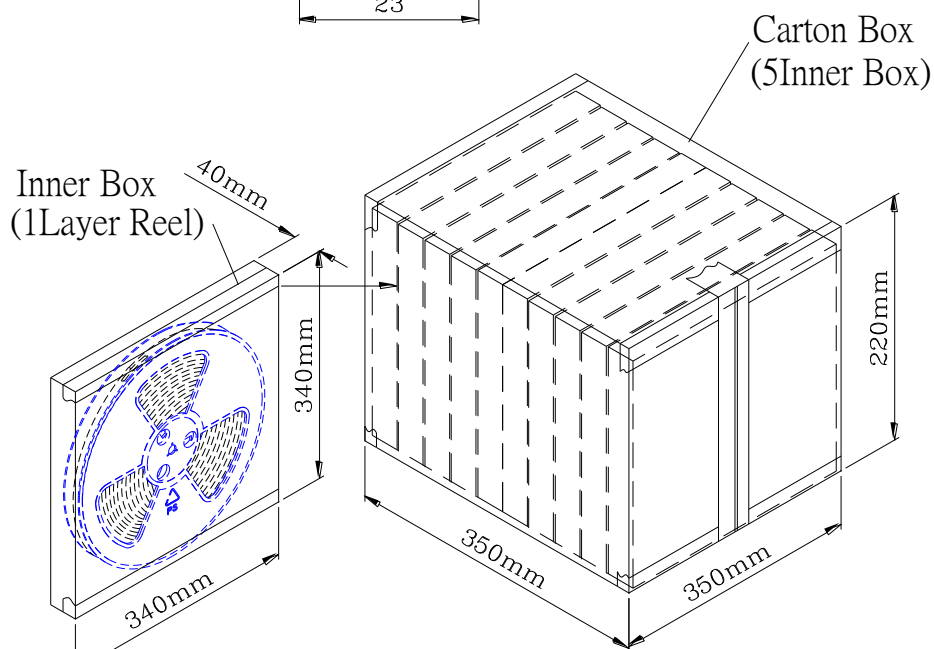
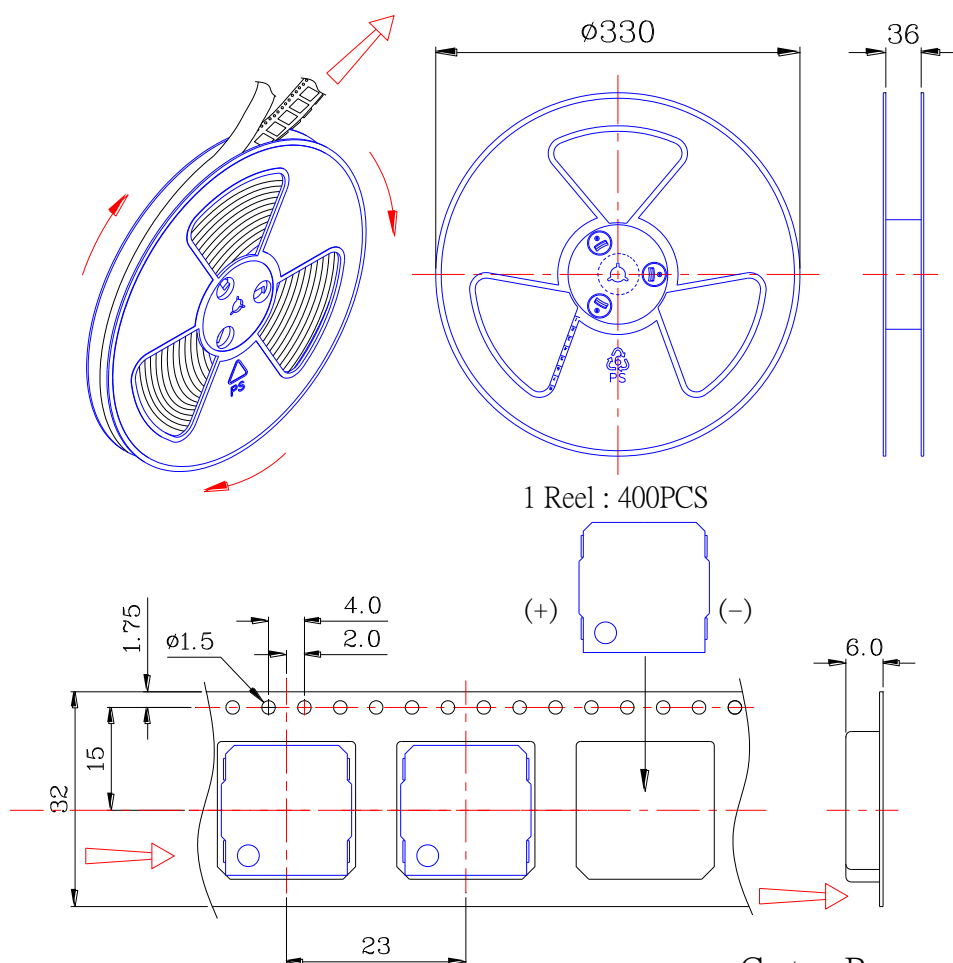
Heat resistant line

(Used when heat resistant reliability test is performed)

(2)Manual soldering

Manual soldering temperature 350° C within 5 sec.

J. PACKING STANDARD 包裝規格



Inner Box	340mmx340mmx40mm	1x400PCS=400PCS
Carton Box	350mmx350mmx220mm	5x400PCS=2,000PCS