

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : Micro Dynamic Speaker

Kingstate Part No. : TRAG58004-50

Customer's Model No. : \_\_\_\_\_


Specification No. : DOD-S293

Number Of The Edition : 1.1

### CUSTOMER'S APPROVED SIGNATURE

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Approved by	Checked by	Issued by
		Sunny 06/21/17'

## A. SCOPE 範疇

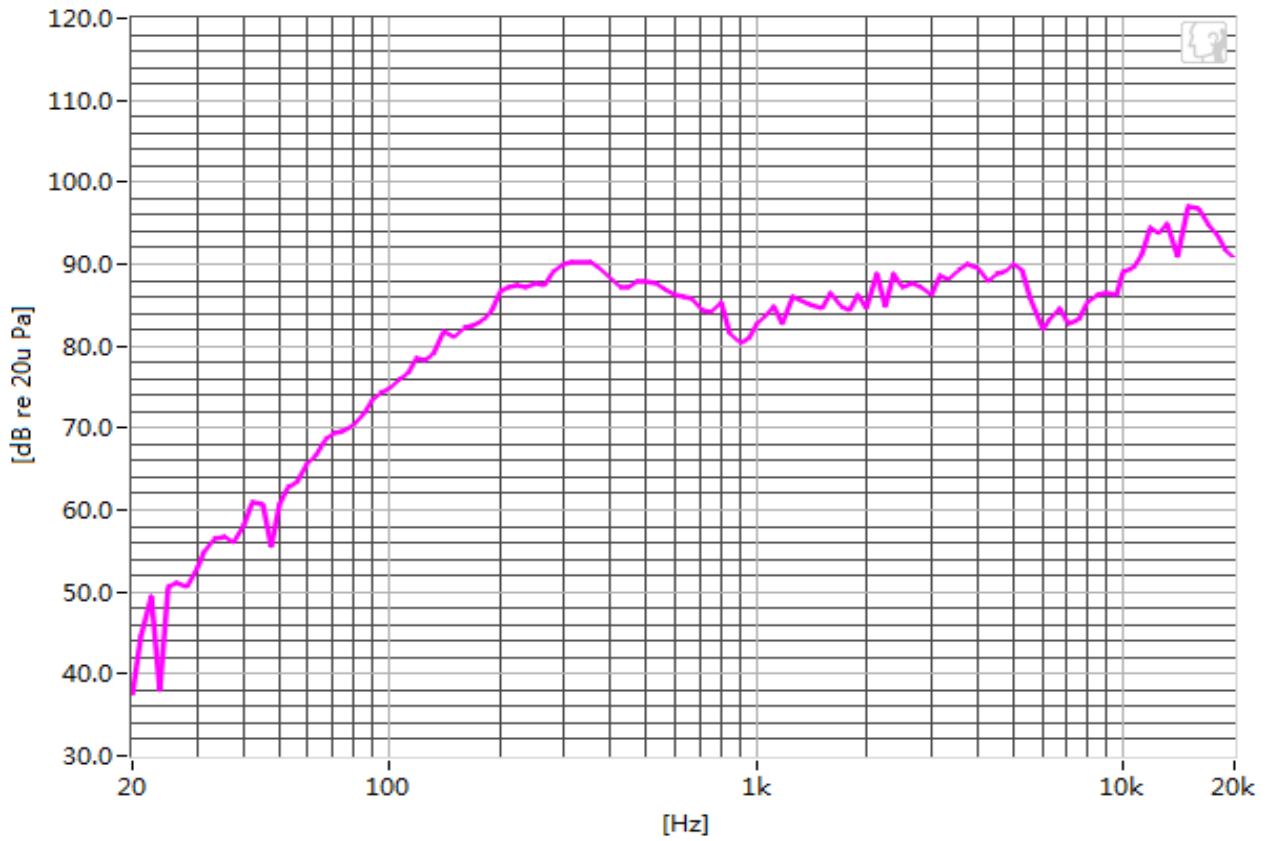
This specification applies speaker, TRAG58004V-50

此規格書適用於喇叭, TRAG58004V-50

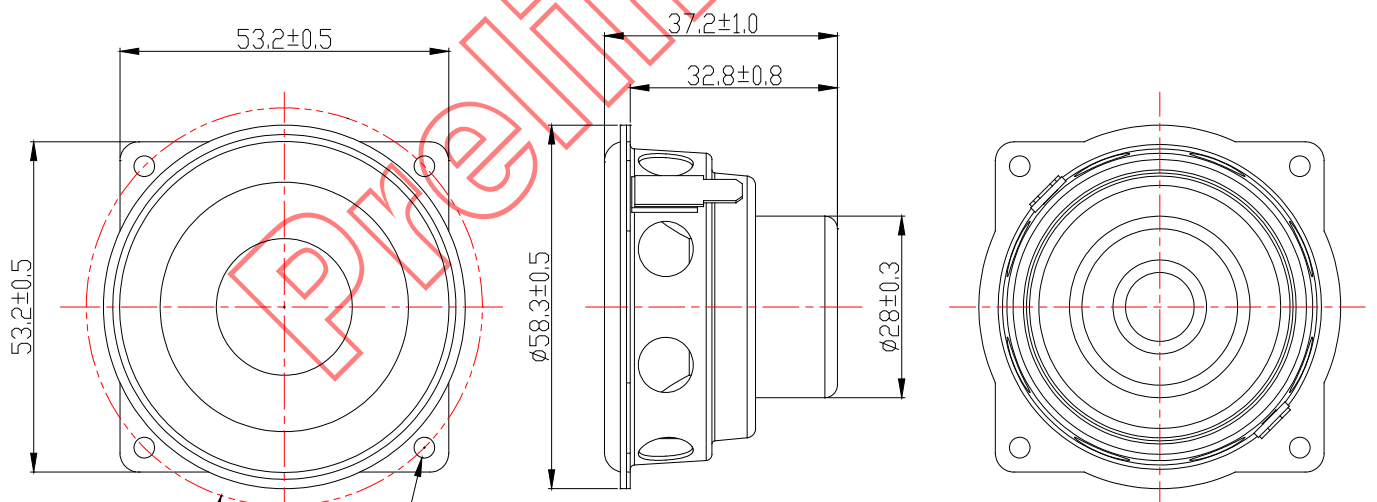
## B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	$\Phi 58.3 \times 37.2$	
2	Power Rating 功率		W	Rated. 5/ MAX.10	Maximum Power: IEC-60268-5 Filter 60s ON/120s Off 10 Cycles(Room Temp)
3	Impedance 阻抗	$\Omega$	ohm	$4 \pm 15\%$	At 600Hz
4	Resonance Frequency 低音諧振	Fo	Hz	$120 \pm 20\%$ Hz	At 1.0V
5	Output S.P.L. 音壓位準		dB	$85 \pm 3\text{dB}(1\text{W}/50\text{cm})$	At 500,600,800,1000Hz (Average figures)
6	Frequency Rang 有效頻寬		Hz	F0---20K	Average SPL -10db
7	Distortion 失真		%	7% Max.	At 1KHz,1W
8	Diaphragm 振膜			N/A	Paper+Rubber
9	Magnet 磁石		mm	N/A	NdFeB
10	Flux Density 磁通密度		Gauss	N/A	
11	Operating temp. 操作溫度		$^{\circ}\text{C}$	-20 ~ +55	
12	Storage temp. 儲存溫度		$^{\circ}\text{C}$	-30 ~ +60	
13	Buzze & Rattle 異常音				Not be audible at 4.47V sine wave between From Fo~20K 輸入 4.47V 正弦波從 Fo 到 20K 之間無異常音
14	Weight 重量		g	83	
15	Material 材質			Metal	
16	Polarity 極性			Diaphragm shall move Forward when Apply a Positive DC. Current to the "+"	
17	Environmental Protection Regulation 環保法規			RoHS2.0	

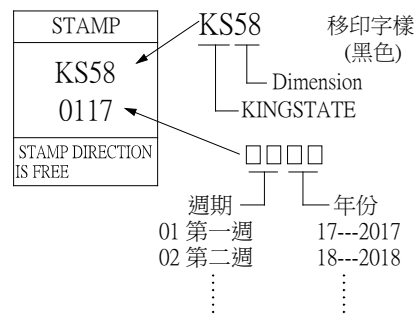
### C. SPEAKER CHARACTERISTICS 頻率響應曲線



### D. APPEARANCE DRAWING 外觀尺寸圖



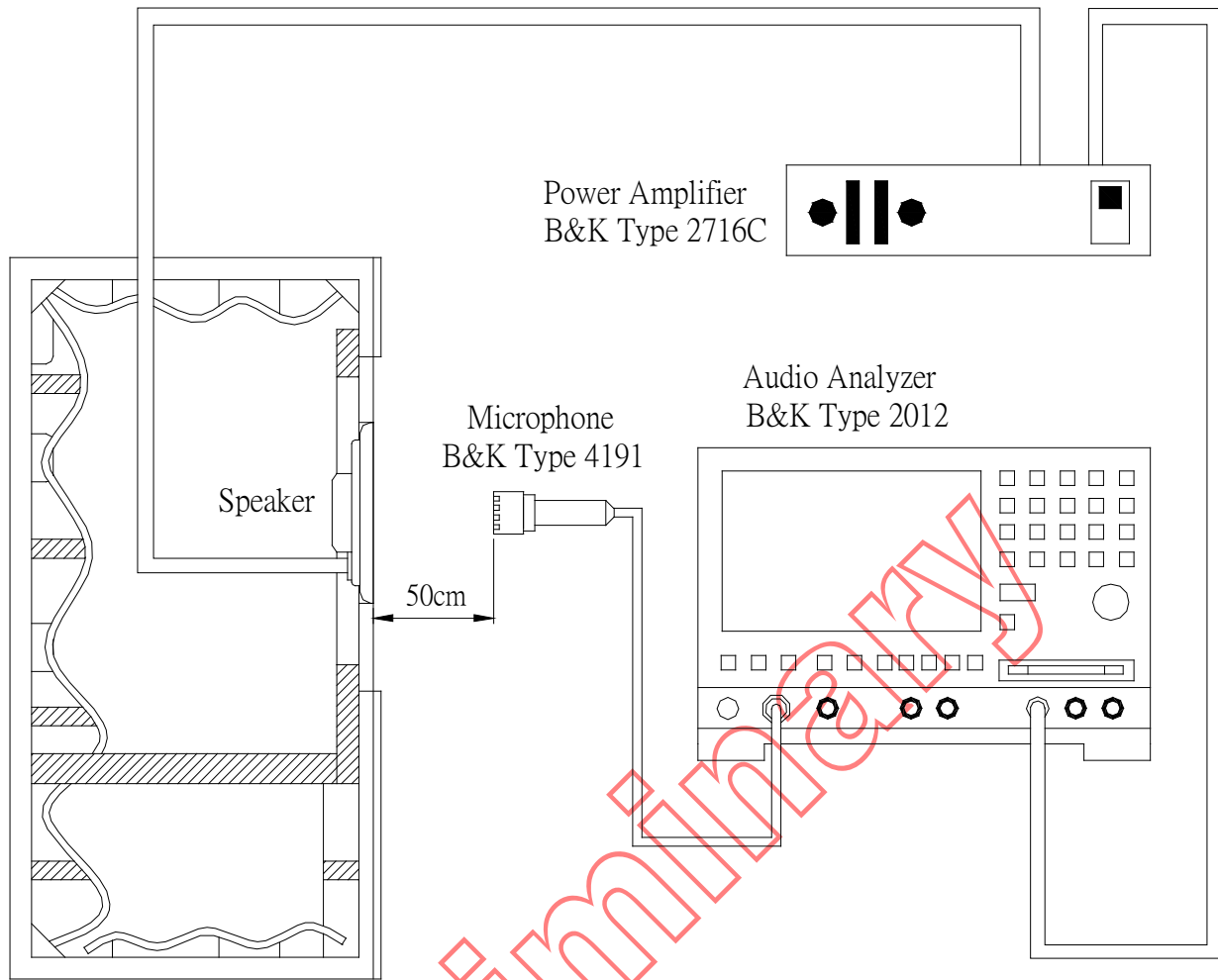
#### STAMP



Tol: ±0.5

Unit: mm

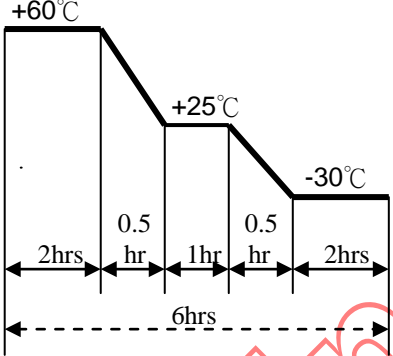
## E. MEASUREMENT CIRCUIT 測量線路



## F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test condition	Evaluation standard
1	Solderability 焊錫附著性 (Connector excepted) 端子類不適用此項	Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $+270\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds. 裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm 5^{\circ}\text{C}$ 溶融焊錫槽 $3\pm 0.5$ 秒.	90% min. stripped wires shall be wet with solder.(Except the edge of terminal) 浸入裸線部份附著焊錫 90% 以上.(末端斷面不算).
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 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 4.47V sine wave between
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.	Fo ~20KHz. 測試後無任何障礙防礙正常操作.輸入 4.47V 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 +60°C for 96hours 置於+60°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 4.47V sine wave between Fo to 20K. 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. 輸入 4.47V 正弦波從 Fo 到 20K 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 -30°C for 96hours. 置於-30°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 90~95% RH relative humidity for 96hours. 置於+40°C, 相對濕度 90~95%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. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Load test 連續負荷	5W Pink noise is applied for 96 hours, at room temp product. 在室溫下, 輸入功率 5W, 粉紅噪音連續操作 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 4.47V sine wave between Fo to 20K. 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. 輸入 4.47V 正弦波從 Fo 到 20K 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 : +15 ~ +35°C	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件 :	a) 溫度 : +15 ~ +35°C	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	a) Temperature : +20 ± 3°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件:	a) 溫度 : +20 ± 3°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

## I.PACKING STANDARD 包裝規格

Each minimum package unit of products shall be in a carton box and it shall be clearly marked with Part Number, quantity and outgoing inspection number. There shall be no mechanical damage on products during transportation and/or in storage.

外箱須標示最小包裝單位，並註明產品型號、數量及檢驗批號，必須是物品儲藏或運輸過程中可防止造成損傷的包裝。

**TBD**

Preliminary