SPECIFICATION FOR APPROVAL

承　　認　　書

Description	:	**Micro Dynamic Speaker**
Kingstate Part No.	:	**KDSG40004-050**
Customer's Model No.	:	
Specification No.	:	**DOD-3198**
Number Of The Edition	:	**1.1**

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

A. SCOPE 範疇

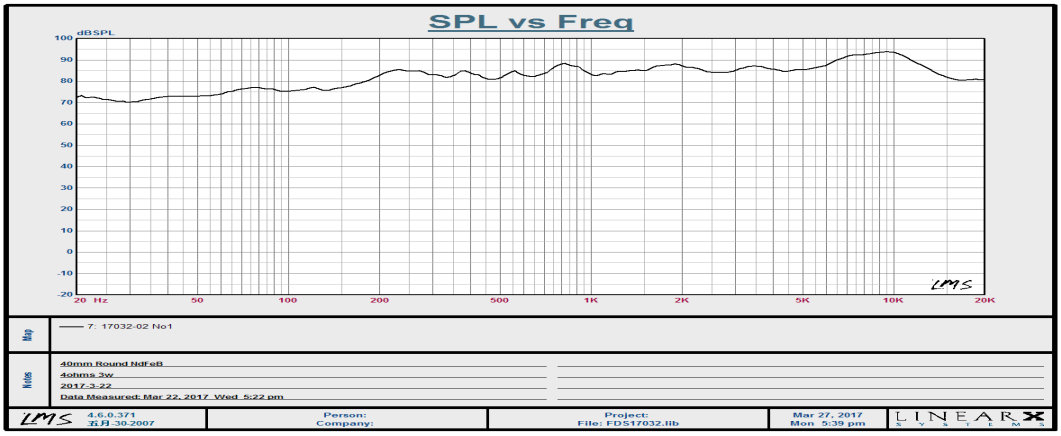
This specification applies box speaker, **KDSG40004-050**

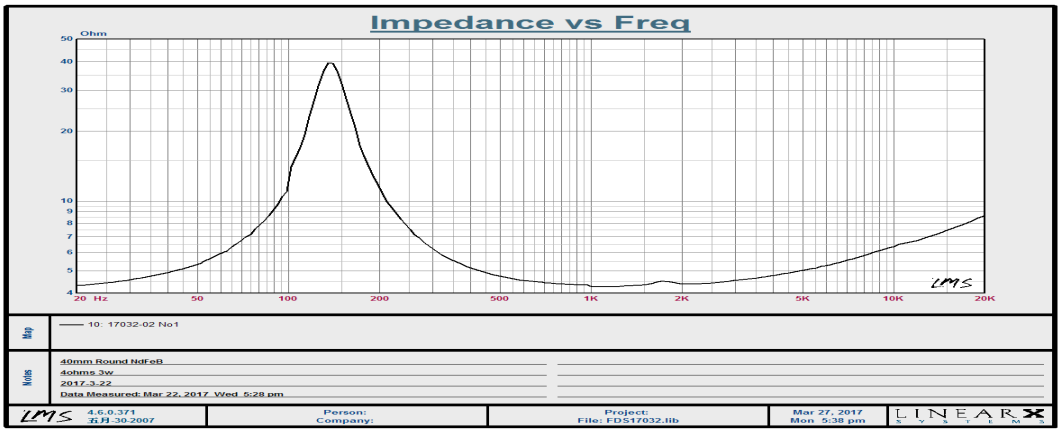
此規格書適用於音箱喇叭, **KDSG40004-050**

B. SPECIFICATION 規格

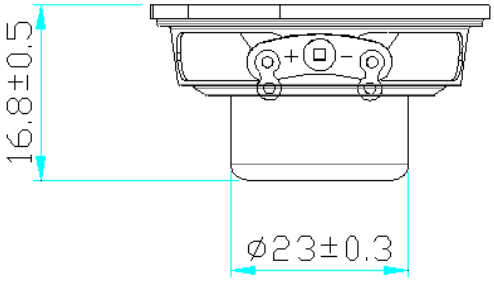
No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	40×16.8t	
2	Power Rating 功率		W	Rated 3.0W/ MAX 4.0W	MaximumPower:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	4± 15% DCR 3.6± 15%	At 1.0KHz 1V
4	Resonance Frequency 低音諧振	Fo	Hz	150 Hz ± 20 %	Free air / onLMS
5	Output S.P.L. 音壓位準		dB	85 SPL± 3dBs	1M/ 1W
6	Frequency Rang 有效頻寬		Hz	70 ~ 20K Hz	1M/1W IEC 60268-5,-10dB
7	Distortion 失真		%	5 % MAX	Rated input at 1KHz
8	Voice Coil 音圈		mm	N/A	
9	Magnet 磁石		mm	N/A	Nd-Fe-B
10	Flux Density 磁通密度		Gauss	N/A	
11	Operating temp. 操作溫度		℃	-25℃ ~ +70℃	
12	Buzze & Rattle 異常音			100% NORMAL	Sinusoidal wave, 3.46 V
13	Weight 重量		g		
14	Material 材質				
15	Environmental Protection Regulation 環保法規			RoHS	

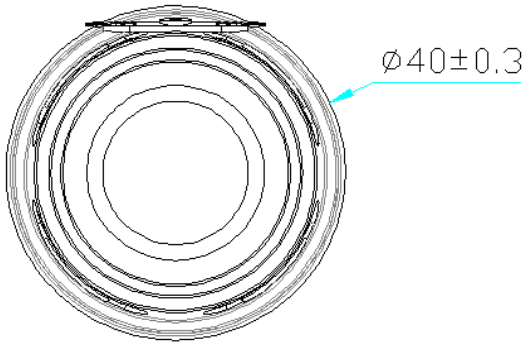
C. SPEAKER CHARACTERISTICS CURVE 特性曲線



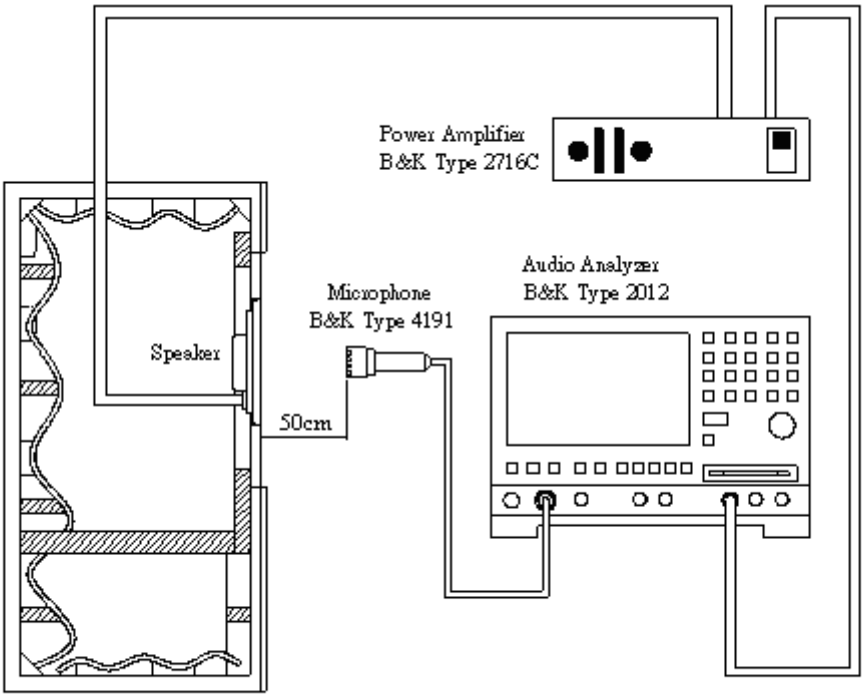


D. APPEARANCE DRAWING 外觀尺寸





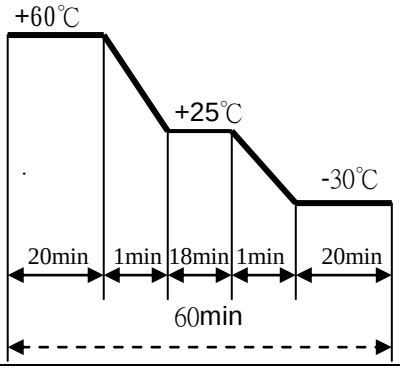
E. MEASUREMENT CIRCUIT 測量線路



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±5℃ for 3±0.5 seconds. 裸線部份浸入松香溶液 5 秒後,再浸入+270±5℃溶融焊錫槽 3±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	Lead Wire Pull Strength 線材拉力	The pull force shall be applied to double lead wire： Horizontal 3.0N(0.306kg) for 30 seconds. Vertical 2.0N(0.204kg) for 30 seconds. 雙線材水準方向施以 3.0N(0.306kg)的力量, 垂直方向施以 2.0N(0.204kg)的力量,各 30 秒.	No damage and cutting off 線材不鬆動, 不脫落.
3	Vibration Test 振動測試	Speaker shall be measured after being applied vibration of amplitude of 1.5mm with 10~55~10Hz band of vibration frequency to each of 3 per-pendicular directions for 2 hours. 振動週波數 10～55~10Hz、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 2.0V sine wave between Fo ~ 20KHz 測試後無任何障礙防礙正常操作.且在輸入 2.0V 正弦波從 Fo 到 20KHz 之間無異常音.
4	Drop Test 落下測試	Drop the speakers contained in normal box onto the board 20mm thick X,Y, Z 3 direction,1 time each direction, total 3 times from the height of 75cm 將揚聲器置於盒中, 自 75 公分高度落在 20mm 木板上 X.Y.Z 3 個向各一次共 3 次	

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℃ for 96hours 置於+60℃環境中 96 小時	Being placed for 3 hours at normal temperature, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 2.0V sine wave between Fo 到 20K. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後, 靜置於常溫（室溫)環境中 3 小時後, 測試後無任何障礙防礙正常操作. 且在輸入 2.0V 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 -25℃ for 96hours. 置於-25℃環境中 96 小時	
3	Humidity test 相對濕度測試	After being placed in a chamber at +40℃and 90~95% RH relative humidity for 48hours. 置於+40℃, 相對濕度 90~95%環境中 48 小時	
4	Temp. cycle test 溫度循環測試	The part shall be subjected to 20 cycles. One cycle shall be consist of: 單體承受溫度循環測試 20 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	Rated Power white noise is applied for 96 hours, at room temp 在室溫下,輸入功率額定功率, 白雜音連續操作 96 小時.	Being placed for 2 hours at normal temperature, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 2.0V sine wave between Fo 到 20K. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後, 靜置於常溫（室溫）環境中 2 小時後, 測試後無任何障礙防礙正常操作. 且在輸入 2.0V 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 : +5 ~ +35℃	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件 :	a) 溫度 : +5 ~ +35℃	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	a) Temperature : +25 ± 2℃	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件:	a) 溫度 : +25 ± 2℃	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar