

SPECIFICATION FOR APPROVAL

承 認 書

Description : **Micro Dynamic Speaker**

Kingstate Part No. : **KDSG1511006Q-09P**

Customer's Model No. :

Specification No. : **DOD-6396**

Number Of The Edition : **1.1**

CUSTOMER'S APPROVED SIGNATURE

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Approved by	Checked by	Issued by
		劉向宇 2014-9-25

A. SCOPE 範疇

This specification applies speaker, **KDSG1511006Q-09P**

此規格書適用於喇叭, **KDSG1511006Q-09P**

B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	15×11×3.0H	
2	Power Rating 功率		W	Rated. 0.94/ MAX. 1.3 (in 1cc closed box)	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	6 ± 15%	At 2.0kHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	500± 20%	At 1.0V
				850± 15%	At 1.0V in 1cc closed box
5	Output S.P.L. 音壓位準		dB	93± 3dB(2V/0.1m)	At 2.0KHz in 1cc closed box
6	Frequency Range 有效頻寬		Hz	Show in item C	
7	Distortion 失真		%	Show in item D	
8	Voice Coil 音圈		mm	NA	
9	Magnet 磁石		mm	NA	Nd-Fe-B (鈹鐵鋁)
10	Flux Density 磁通密度		Gauss	NA	
11	Operating temp. 操作溫度		℃	-20 ~ +60	
12	Storage temp. 存儲溫度		℃	-40 ~ +85	
13	Buzz & Rattle 異常音				Not be audible at 2.37V sine wave between 100~ 5KHz (in 1cc closed box) 輸入 2.37 V 正弦波從 100 到 5KHz 之間無異常音(置於 1cc 密閉式箱體內)
14	Weight 重量		g	About 1.4	
15	Material 材質			NA	
16	Environmental Protection Regulation 環保法規			HSF	

C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

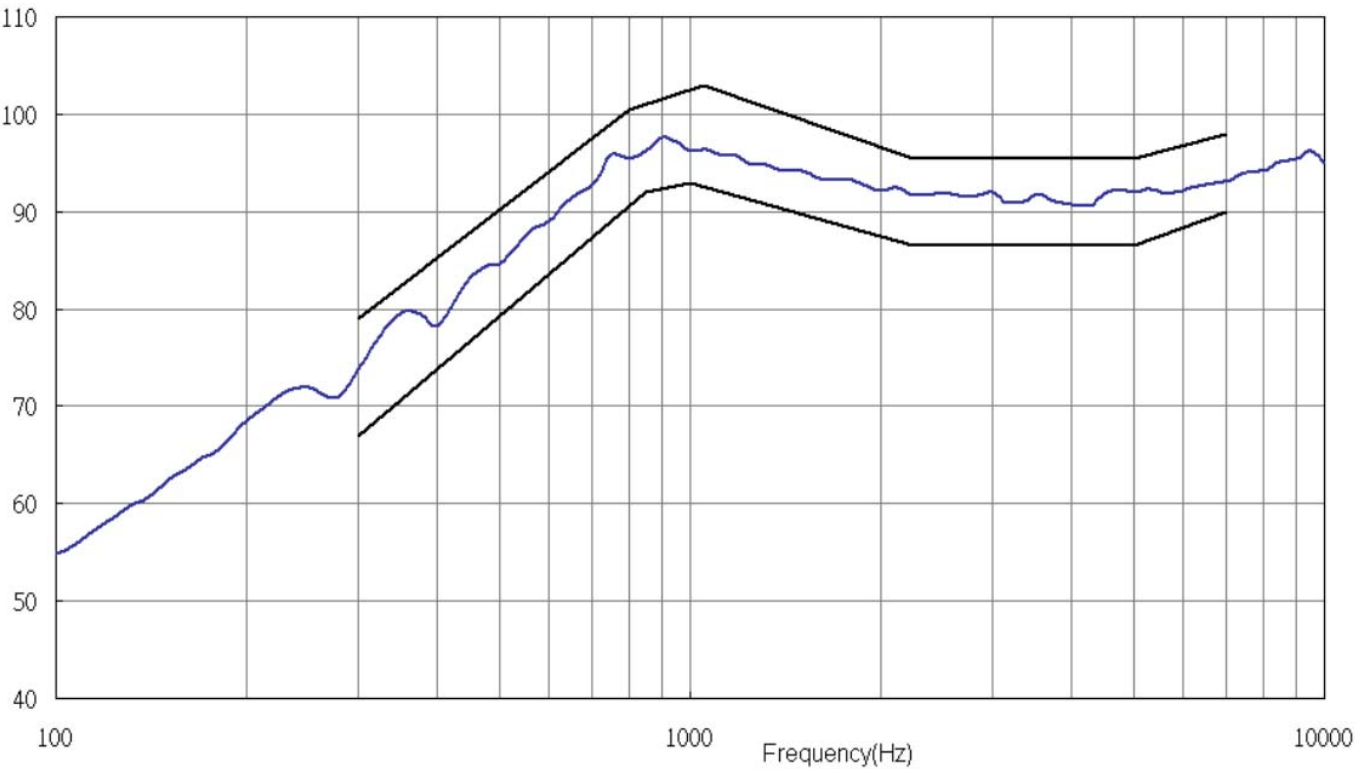


Table 1: Tolerance Limits Date for FR

Frequency(Hz)	Upper Limits(dB)	Frequency(Hz)	Lower Limits(dB)
300	79	300	67
800	100.5	800	92
1050	103	1000	93
2250	95.5	2250	86.5
5000	95.5	5000	86.5
7000	98	7000	90

D. DISTORTION CURVE 失真曲綫

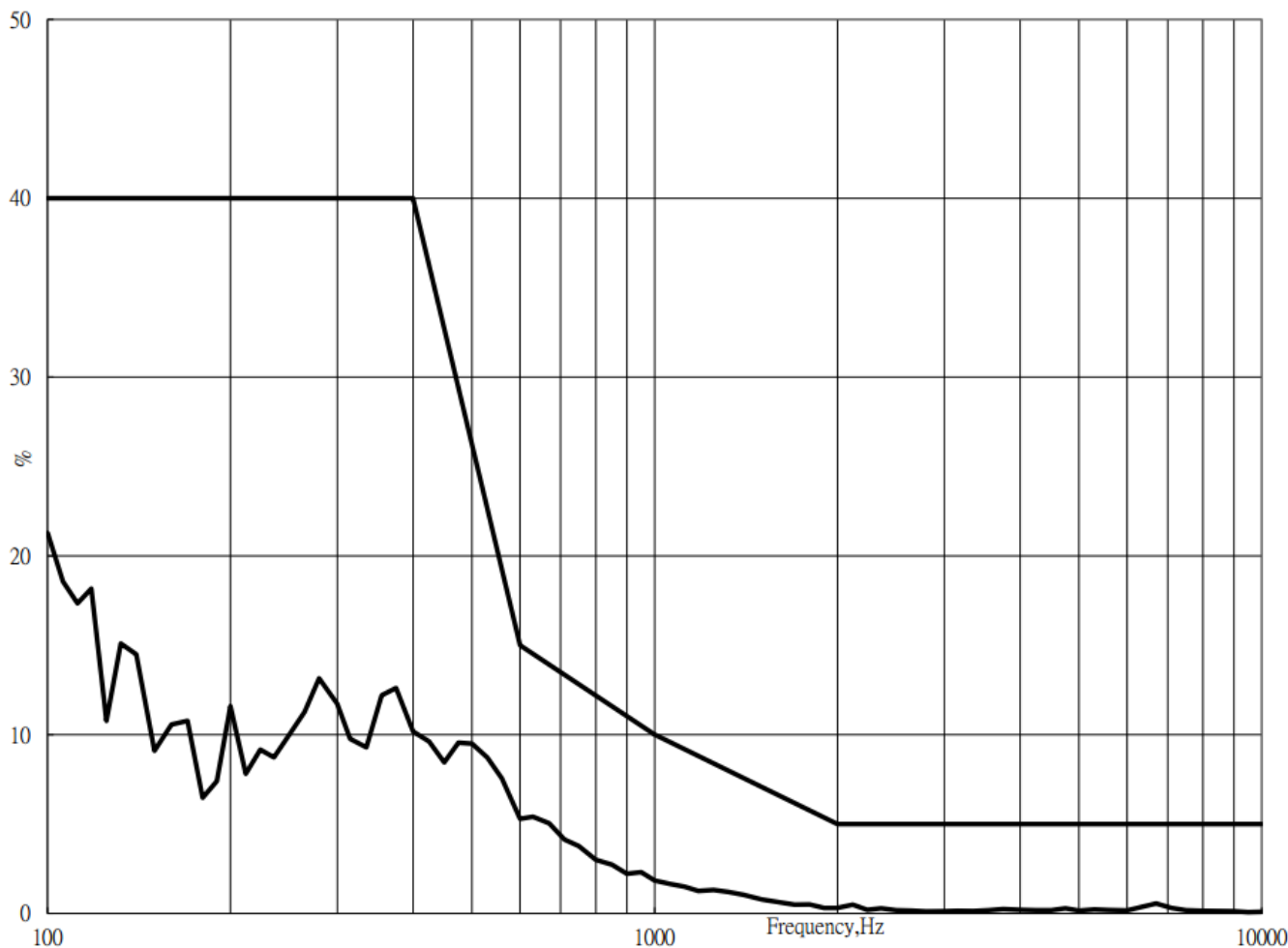
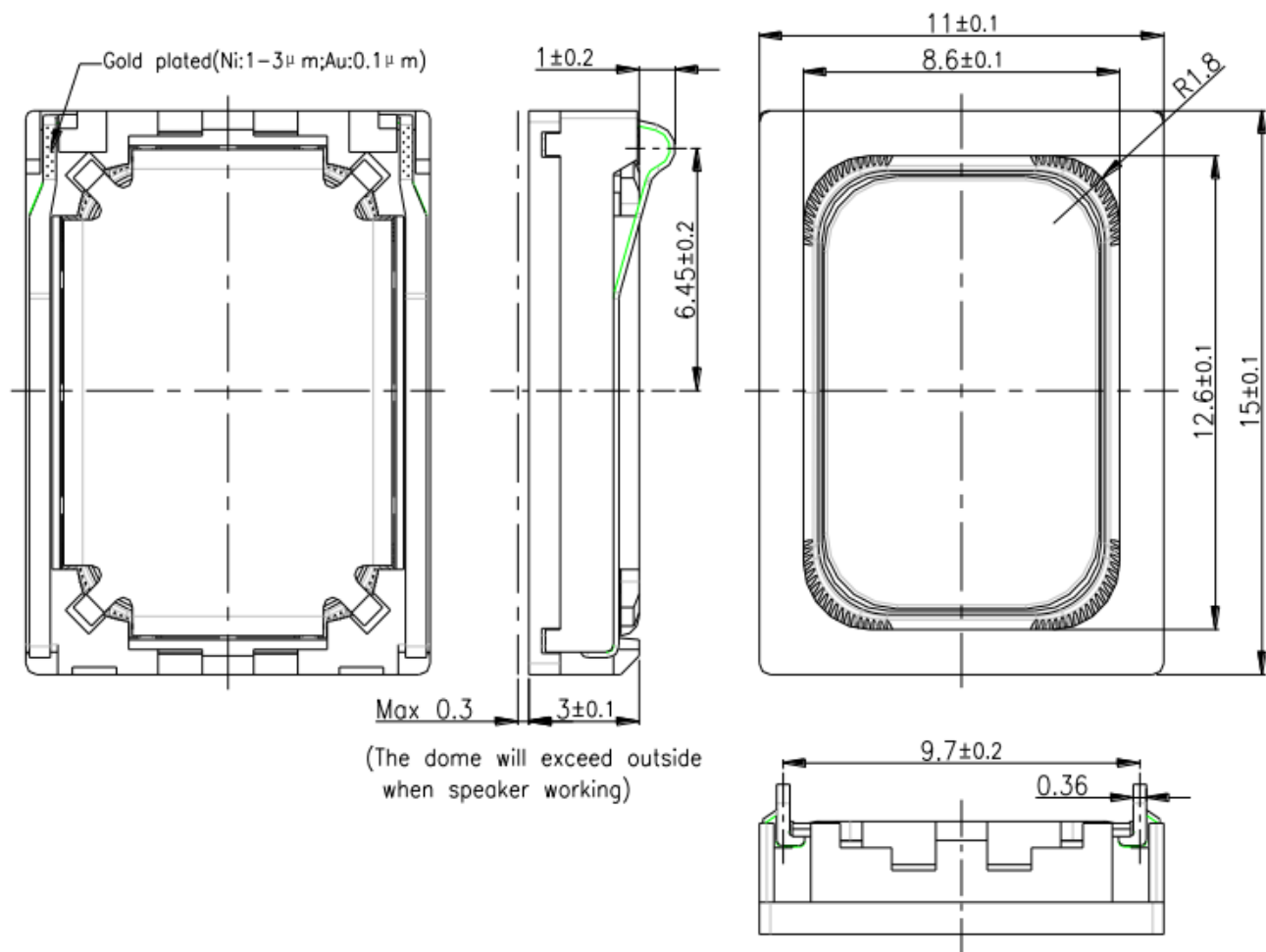


Table 2: Limits Date for THD

Frequency (Hz)	Limits (%)
100	40
400	40
600	15
1000	10
2000	5
10000	5

E. APPEARANCE DRAWING 外觀尺寸圖

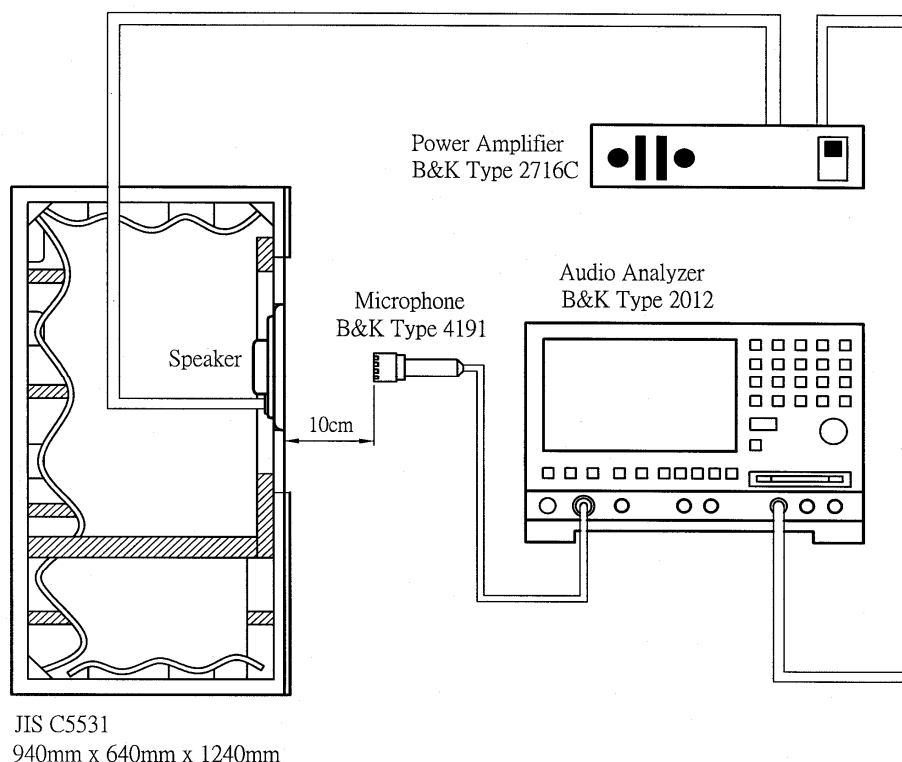


NOTE:TOLERANCE GENERAL UNLESS OTHERWISE NOTED : $\pm$ 0.2mm

Unit :mm

Tol: $\pm$ 0.2mm

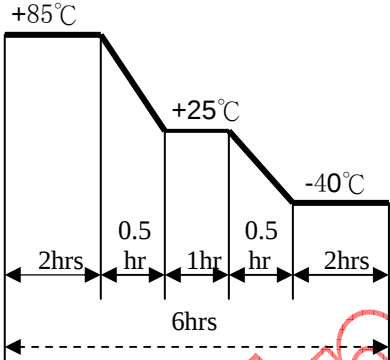
F. MEASUREMENT CIRCUIT 測量線路



G. 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 $+270\pm5^{\circ}\text{C}$ for 3 ± 0.5 seconds. 裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm5^{\circ}\text{C}$ 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. 雙線材水平方向施以 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 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 2.37V sine wave between 100 ~ 5KHz (in 1cc closed box)
4	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2.37V 正弦波從100 到5KHz 之間無異常音(置於1cc 密閉箱體內)

H. 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.
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 be consist of: 單體承受溫度循環測試 5 次, 其循環內容如圖示: 	Should not be audible at 2.37V sine wave between 100 ~ 5KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB.(in 1cc closed box) 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2.37V 正弦波從100 到5KHz 之間無異常音.Fo 與原規格值相同,輸出音壓變化量在±3dB 內.(置於1cc 密閉箱體內)

I. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Load test 連續負荷	0.7W in 1 cc closed box pink noise is applied for 96 hours, at room temp.(with 500Hz high pass filter) 在室溫下,於1cc密閉箱體內輸入0.7W,粉紅雜音連續操作 96 小時(須加上 500Hz 的高通濾波器)	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 2.37V sine wave between 100 ~ 5KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB.(in 1cc closed box) 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2.37V 正弦波從100 到5KHz 之間無異常音.Fo 與原規格值相同,輸出音壓變化量在±3dB內.(置於1cc 密閉箱體內)

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
Judgment 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 : 860-1060mba