

SPECIFICATION FOR APPROVAL

承認書

Description : **Piezo Audio Indicator**

Kingstate Part No. : **KMIG1240-IC**

Customer's Model No. :

Specification No. : **DRD-B046**

Number Of The Edition : **1.1**

CUSTOMER'S APPROVED SIGNATURE		



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Approved by	Checked by	Issued by

A. SCOPE 範疇

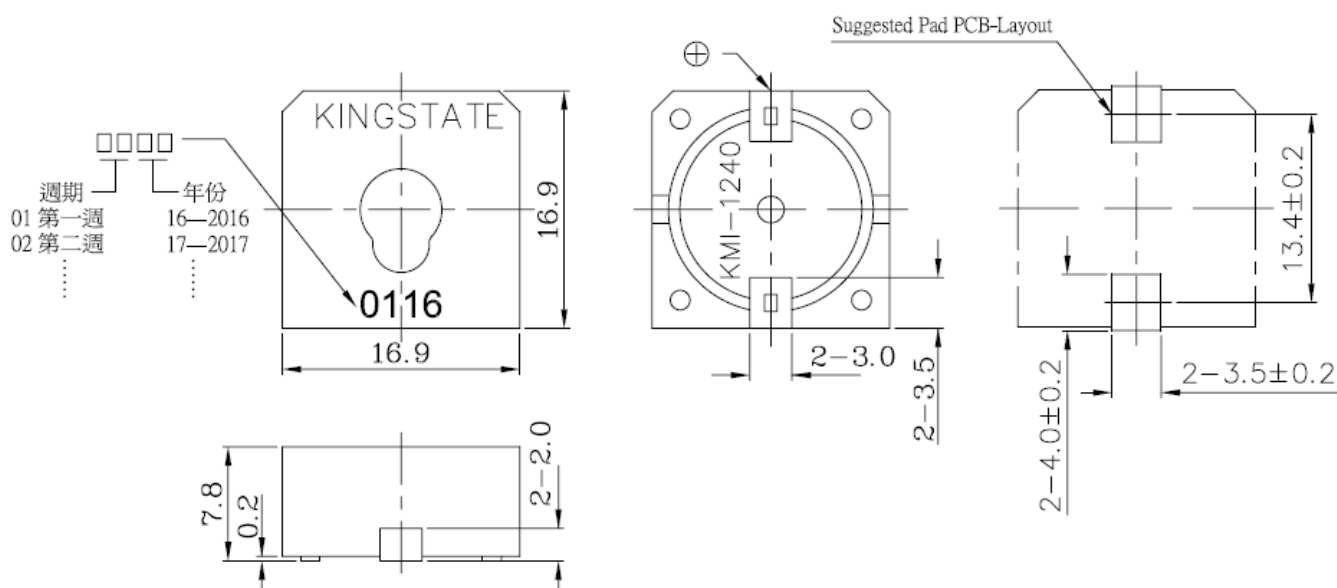
This specification applies piezo audio indicator, **KMIG1240-IC**

此規格書適用於壓電式蜂鳴器, **KMIG1240-IC**

B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Resonant frequency 共振頻率	KHz	4.0 ± 0.2	
2	Operating Volt. range 操作電壓範圍	VDC	3 ~ 18	
3	Current consumption 消耗電流	mA	MAX 18	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 90	at 10cm/12VDC
5	Rated Voltage 額定電壓	VDC	12	
6	Tone 聲音		Continuous 直音	
7	Operating temp. 操作溫度	°C	-30 ~ +70	
8	Storage temp. 儲存溫度	°C	-40 ~ +80	
9	Dimension 尺寸	mm	L16.9 x W16.9 x H7.8	See appearance drawing 請參照外觀尺寸圖
10	Weight (MAX) 重量	gram	2.6	
11	Material 材質		PPS UL-94 V-0 (BLACK)	
12	Terminal 端子		SMD type (鍍化金/Plating Au)	See appearance drawing 請參照外觀尺寸圖
13	Environmental Protection Regulation 環保法規		RoHS 2.0	

C. APPEARANCE DRAWING 外觀尺寸圖

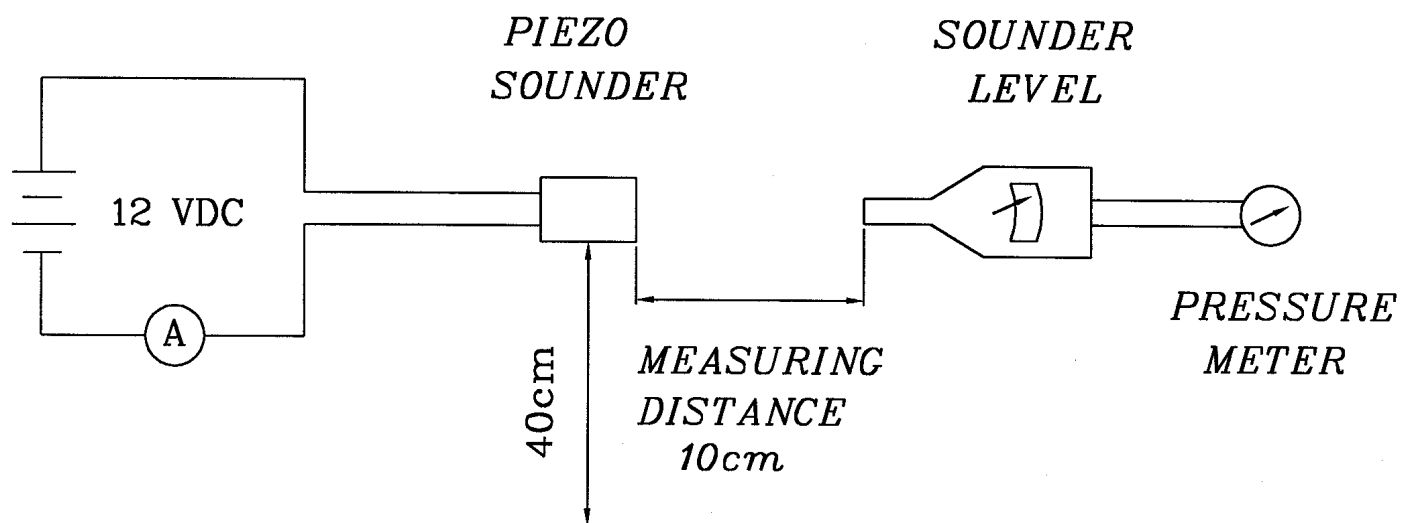


Tol : ± 0.5

Unit: mm

D. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖



Mic : RION S.P.L meter UC30 or equivalent

Mic : RION 噪音計 UC30 或同等品

S.G : Hewlett Packard 33120A Function Generator or equivalent

S.G : Hewlett Packard 33120A 函數信號產生器或同等品

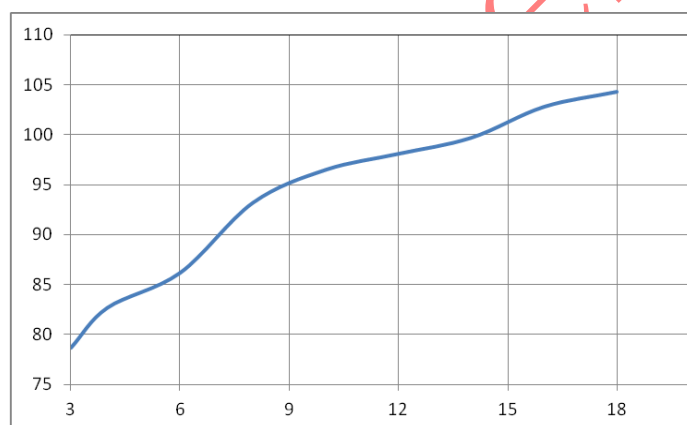
E. VOLTAGE: SOUND PRESSURE LEVEL / VOLTAGE: CURRENT CONSUMPTION

CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性

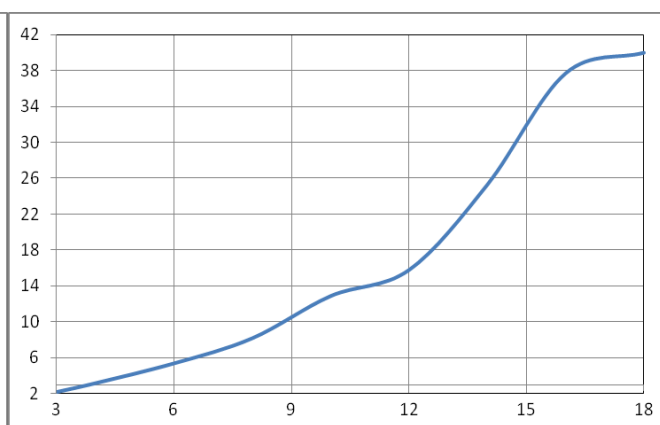
S.P.L(dB)

at 10 cm

mA



(VDC)

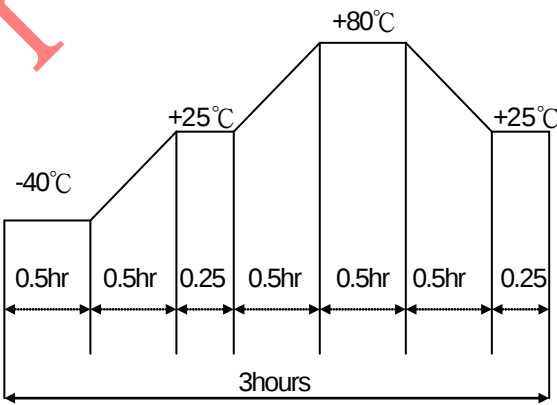


(VDC)

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 $+270\pm5^{\circ}\text{C}$ for 3 ± 1 second. 端子置於錫膏內,錫膏溫度: $+270\pm5^{\circ}\text{C}$. 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. 操作上無任何不良.
3	Terminal Mechanical Strength 端子強度	Lead pads shall be soldered on the pc board, and the force $9.8\text{N}(1.0\text{kg})$ shall be applied behind the part for 10 seconds. 將端子焊在 PC 板上後, 對單體施以 $9.8\text{N}(1.0\text{kg})$ 拉力 10 秒.	No damage and cutting off 端子不鬆動, 不脫落
4	Vibration 振動試驗	Buzzer 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 $10\sim55\text{HZ}$ 、全振幅 1.5mm 於 X.Y.Z 3 個方向,各 2 小時.	The value of oscillation frequency/ current consumption should be in $\pm10\%$ compared with initial ones .The SPL should be in $\pm10\text{dB}$ compared with initial one.
5	Drop test 落下測試	The part only shall be dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X.Y.Z). (a total of 9 times). 單體從 75 公分高處, X.Y.Z.3 個方向,各 3 回,落於 40mm 厚木板上.	諧振頻率與消耗電流變化量須在 $\pm10\%$ 內. 輸出音壓變化量須在 $\pm10\text{dB}$ 內.

G. ENVIRONMENT TEST 環境測試

No.	Item	Test Condition	Evaluation standard
1	High temp. test 高溫測試	After being placed in a chamber at $+80^{\circ}\text{C}$ for 72ours 置於 $+80^{\circ}\text{C}$ 環境中 72 小時	Being placed for 4 hours at $+25^{\circ}\text{C}$, buzzer shall be measured. The value of oscillation frequency/ current consumption should be in $\pm10\%$ compared with initial ones .The SPL should be in $\pm10\text{dB}$ compared with initial one. 經測試後, 靜置於 $+25^{\circ}\text{C}$ (室溫) 環境中 4 小時後, 諧振頻率與消耗電流變化量須在 $\pm10\%$ 內. 輸出音壓變化量須在 $\pm10\text{dB}$ 內.
2	Low temp. test 低溫測試	After being placed in a chamber at -40°C for 72ours 置於 -40°C 環境中 72 小時	
3	Humidity test 相對濕度測試	After being placed in a chamber at $+40^{\circ}\text{C}$ and $90\pm5\%$ relative humidity for 72ours 置於 $+40^{\circ}\text{C}$, 相對濕度 $90\pm5\%$ 環境中 72 小時	
4	Temp. cycle test 溫度循環試驗	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 信賴性測試

No.	Item	Test condition	Evaluation standard
1	Operating life test 壽命測試	1.Continuous life test 高溫壽命測試(連續) 48 hours continuous operation at +55°C with DC 12V applied. 在+55°C環境下,以 DC 12V 電壓連續操作 48 小時 2.Intermittent life test 室溫壽命測試(間歇) A duty cycle of 1 minute on, 1 minutes off, a minimum of 5,000 times at room temp. (+25±2°C) and DC12V applied 在室溫下(+25±2°C), 以 DC 12V 電壓操作, 通電 1 分鐘/斷電 1 分鐘,測試 5,000 次循環.	Being placed for 4 hours at +25°C, buzzer shall be measured. The value of oscillation frequency/ current consumption should be in ±10% compared with initial ones .The SPL should be in ±10dB compared with initial one. 經測試後, 靜置於+25°C (室溫) 環境中 4 小時後,諧振頻率與消耗電流變化量須在±10%內. 輸出音壓變化量須在±10dB 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

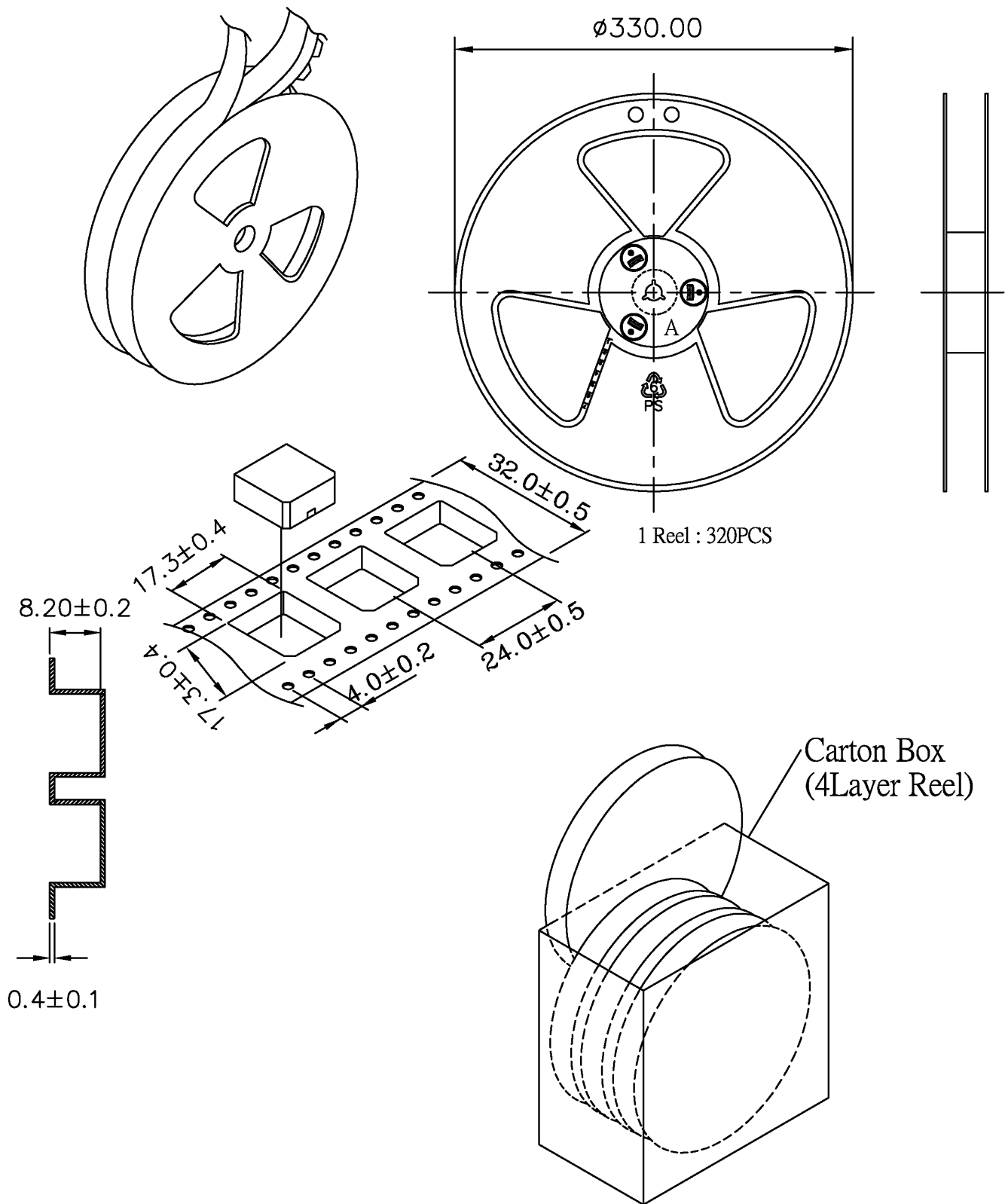
I. Recommended Temperature For Reflow Oven 建議迴焊爐溫度

Solder Temperature (焊接溫度)	245°C ± 5°C
Solder Immersion Time (焊接時間)	5S ± 0.5S

Note: 250°C is Less than 5.5 sec. ,but only pass the lead free reflow once.

備注: 250°C不可超過 5.5 秒, 且只能過無鉛迴流焊一次.

J. PACKING STANDARD 包裝規格



Carton Box	349mmx177mmx359mm	4x320PCS=1280PCS
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