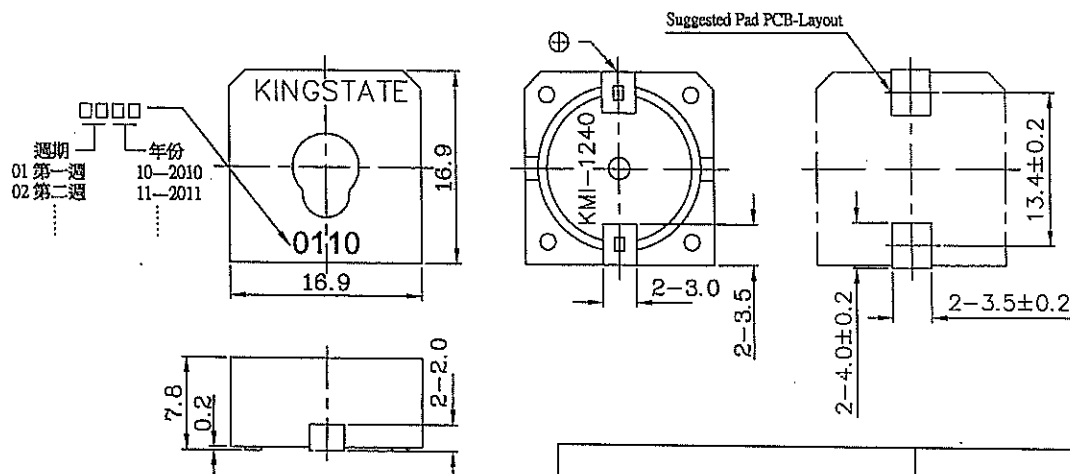


A. SCOPE

B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Resonant frequency 共振頻率	KHz	4.0±0.5	
2	Operating Volt. range 操作電壓範圍	VDC	3~20	
3	Current consumption 消耗電流	mA	MAX 8	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 83	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	

C. APPEARANCE DRAWING 外觀尺寸圖



Tol : ± 0.5
Unit: mm



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Elk Grove, IL 60007
Toll Free: 800-956-1920 FAX: 847-956-1950
www.tusainc.com info@tusainc.com

All dimensions are in MM unless otherwise specified

Drawing Number:
TRSIP-1712A

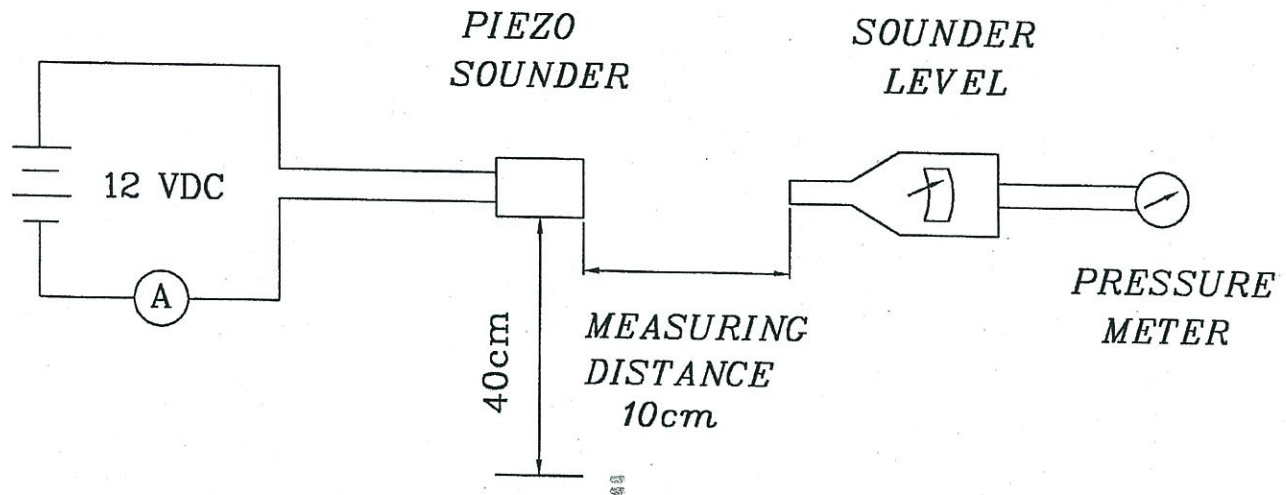
Title:
PIEZO AUDIO INDICATOR

Date:
2-10-2011

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D. MEASURING METHOD

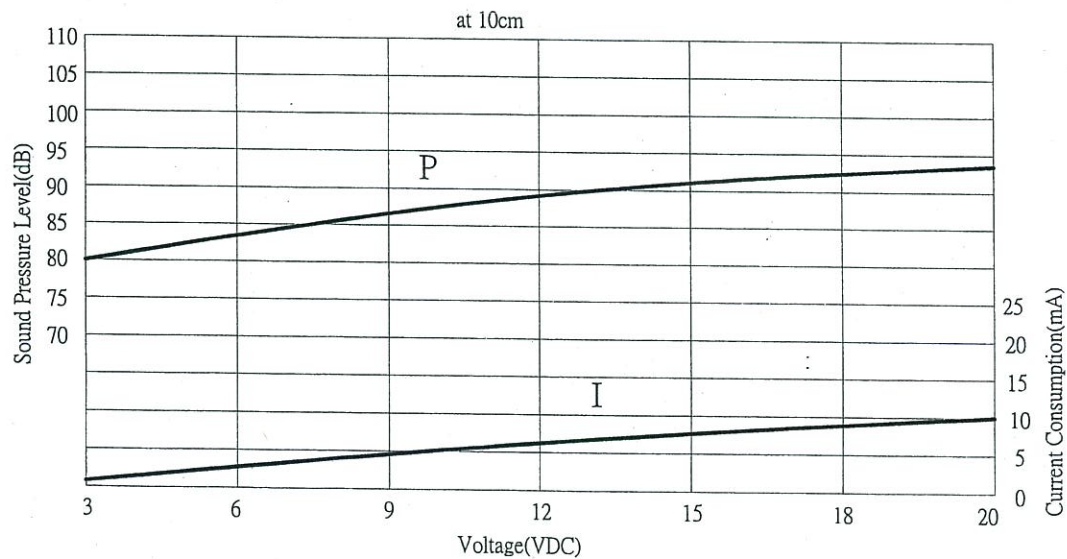
S.P.L. Measuring Circuit



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

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

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

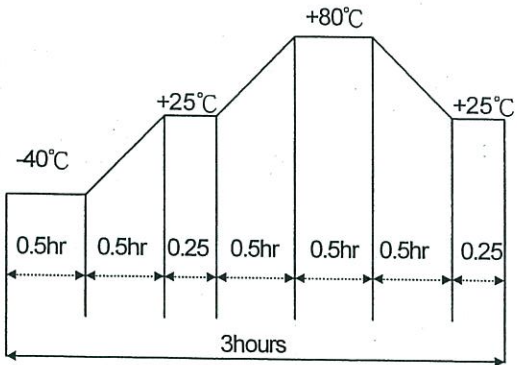


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F. MECHANICAL CHARACTERISTICS

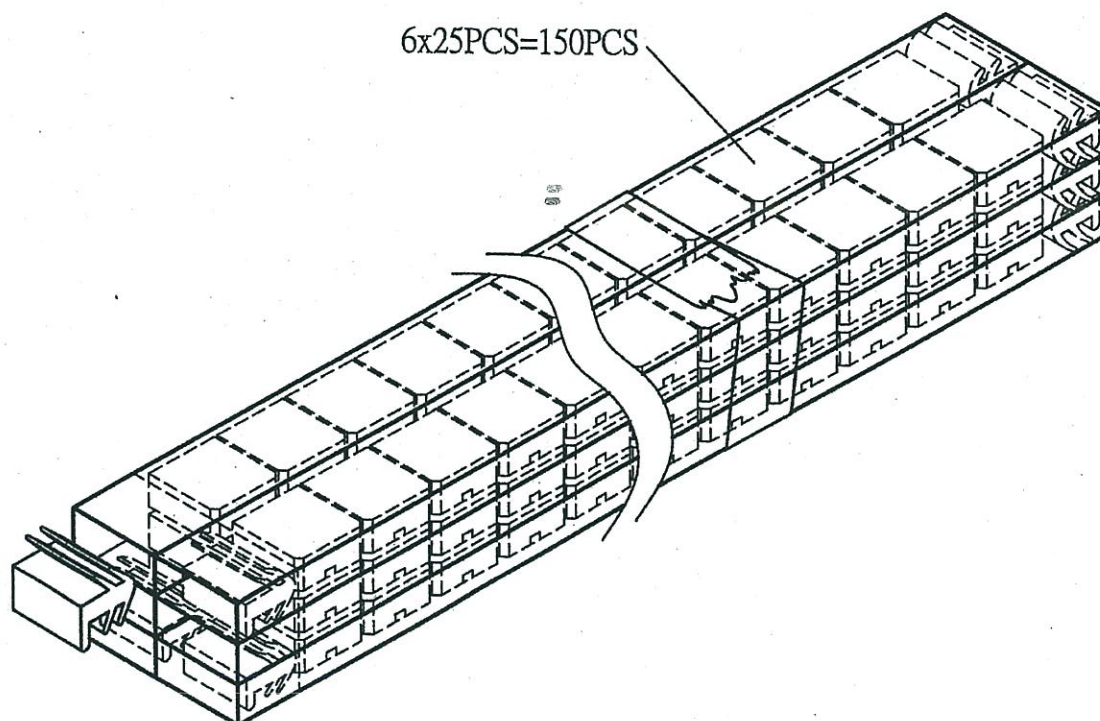
No.	Item	Test Condition	Evaluation standard
1	Solderability	Lead terminals are immersed in solder bath of $+270\pm5^{\circ}\text{C}$ for 3 ± 1 second.	95% surface of lead pads must be covered with fresh solder
2	Soldering Heat Resistance	The product is followed the reflow temperature curve to test its reflow thermo stability.	No interference in operation.
3	Terminal Mechanical Strength	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.	No damage and cutting off
4	Vibration	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.	The value of oscillation frequency/ current consumption should be in $\pm 10\%$ compared with initial ones .The SPL should be in $\pm 10\text{dB}$ compared with initial one.
5	Drop test	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).	

G. ENVIRONMENT TEST

No.	Item	Test Condition	Evaluation standard
1	High temp. test	After being placed in a chamber at $+80^{\circ}\text{C}$ for 240 hours	Being placed for 4 hours at $+25^{\circ}\text{C}$, buzzer shall be measured. The value of oscillation frequency/ current consumption should be in $\pm 10\%$ compared with initial ones .The SPL should be in $\pm 10\text{dB}$ compared with initial one.
2	Low temp. test	After being placed in a chamber at -40°C for 240 hours	
3	Humidity test	After being placed in a chamber at $+40^{\circ}\text{C}$ and $90\pm 5\%$ relative humidity for 240 hours	
4	Temp. cycle test	<p>The part shall be subjected to 5 cycles. One cycle shall be consist of:</p> 	

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J. PACKING STANDARD



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H. RELIABILITY TEST

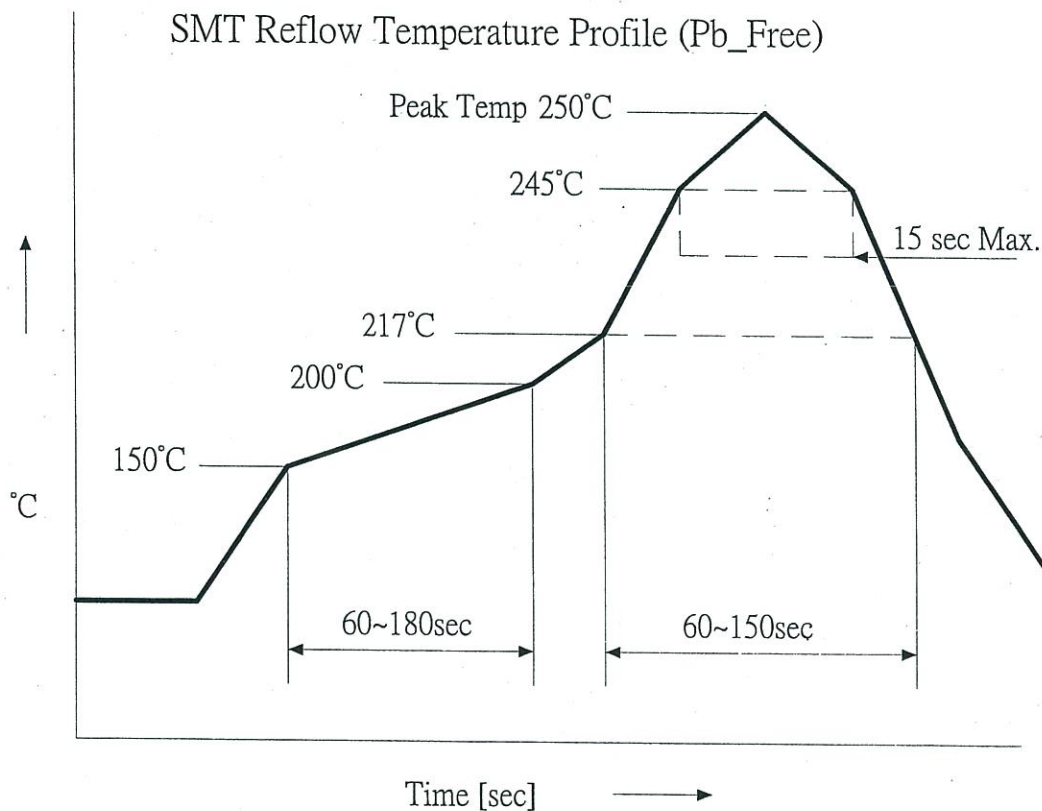
No.	Item	Test condition	Evaluation standard
1	Operating life test	<p>1. Continuous life test - 48 hours continuous operation at +55°C with DC 12V applied.</p> <p>2. Intermittent life test A duty cycle of 1 minute on, 1 minutes off, a minimum of 5,000 times at room temp. (+25±2°C) and DC12V applied</p>	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.

TEST CONDITION.

Standard Test Condition : a) Temperature : +5 ~ +35°C b) Humidity : 45-85% c) Pressure : 860-1060mbar

Judgement Test Condition : a) Temperature : +25 ± 2°C b) Humidity : 60-70% c) Pressure : 860-1060mbar

I. Recommended Temperature Profile For Reflow Oven



Note: 245°C is Less than 15 sec. ,but only pass the lead free reflow once.

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