

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : Magnetic Buzzer

Singatron Part No. : SEB0603

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

Specification No. : TKR-7215

Number Of The Edition : 1.2

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

## A. SCOPE 範疇

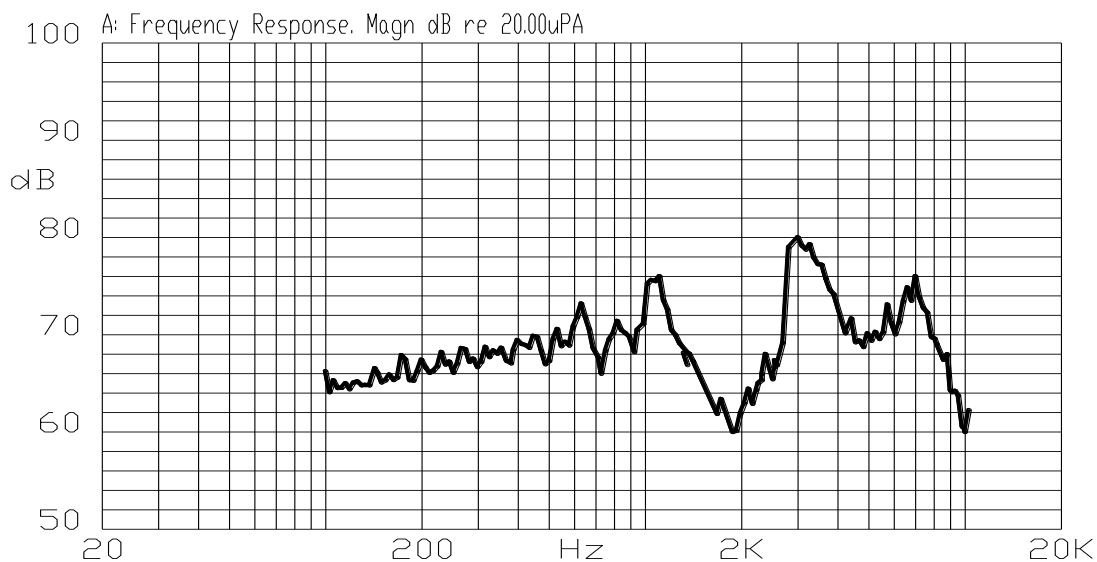
This specification applies magnetic buzzer, **SEB0603**

此規格書適用於電磁式蜂鳴器, **SEB0603**

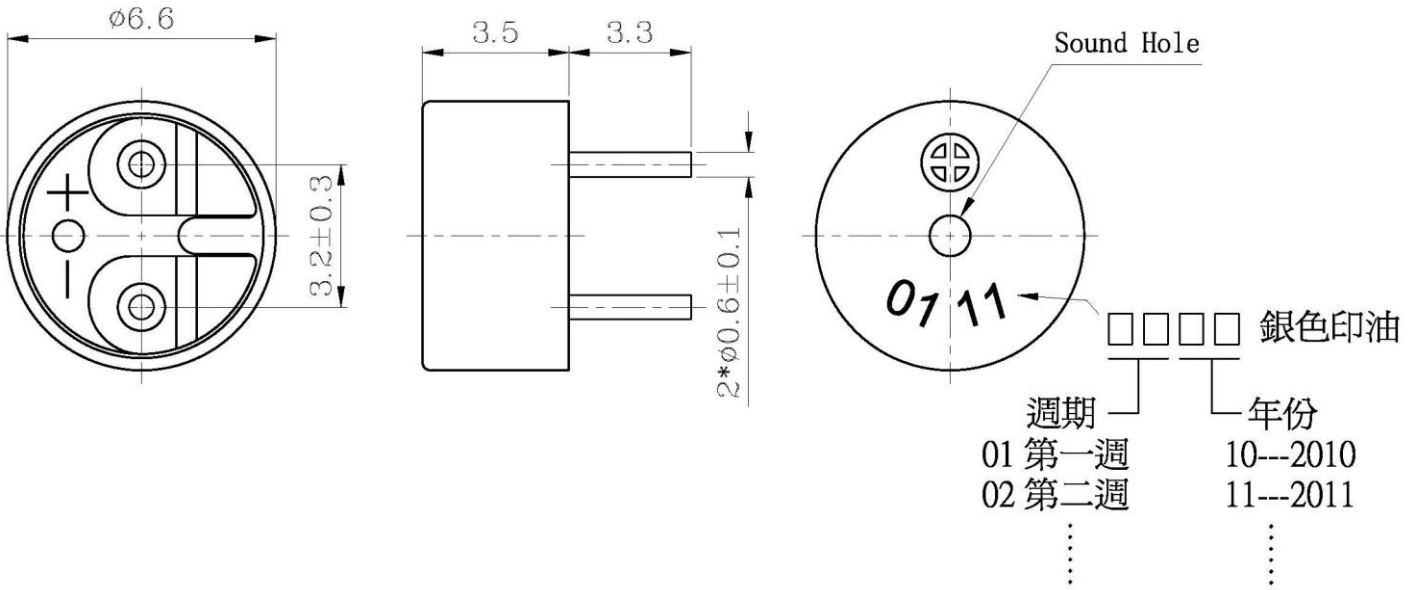
## B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Rated Voltage 額定電壓	Vo-p	3.0	
2	Operating Volt. 操作電壓	Vo-p	2.0~5.0	
3	Mean Current 平均耗電流	mA	Max. 80	Applying rated voltage, 3000Hz square wave, 1/2duty 施以額定電壓, 3000Hz 方波, 50%負載
4	Coil Resistance 直流阻抗	$\Omega$	16.0 $\pm$ 3.0	
5	Sound Output 輸出音壓	dBA	Min. 75 (Typical 80)	Distance at 10cm (A-weight free air). Applying rated voltage 3000Hz, square wave, 1/2duty 在自由音場 10 公分處, 施以額定電壓, 3000Hz, 方波, 50%負載
6	Rated Frequency 額定頻率	Hz	3000	
7	Operating Temp. 操作溫度	$^{\circ}\text{C}$	-20 ~ +60	SPL Min 65dB at "5" test condition 音壓 Min 65dB, 在第五項測試條件
8	Storage Temp. 儲存溫度	$^{\circ}\text{C}$	-30 ~ +70	
9	Dimension 尺寸	mm	$\varnothing$ 6.6x H3.5	See attached drawing. 請參照外觀尺寸圖
10	Weight 重量	gram	0.4	
11	Material 材質		PPO (Black)	
12	Terminal 端子		Pin type (鍍化金/Plating Au)	See attached drawing. 請參照外觀尺寸圖
13	Environmental Protection Regulation 環保法規		RoHS 2.0	

## C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

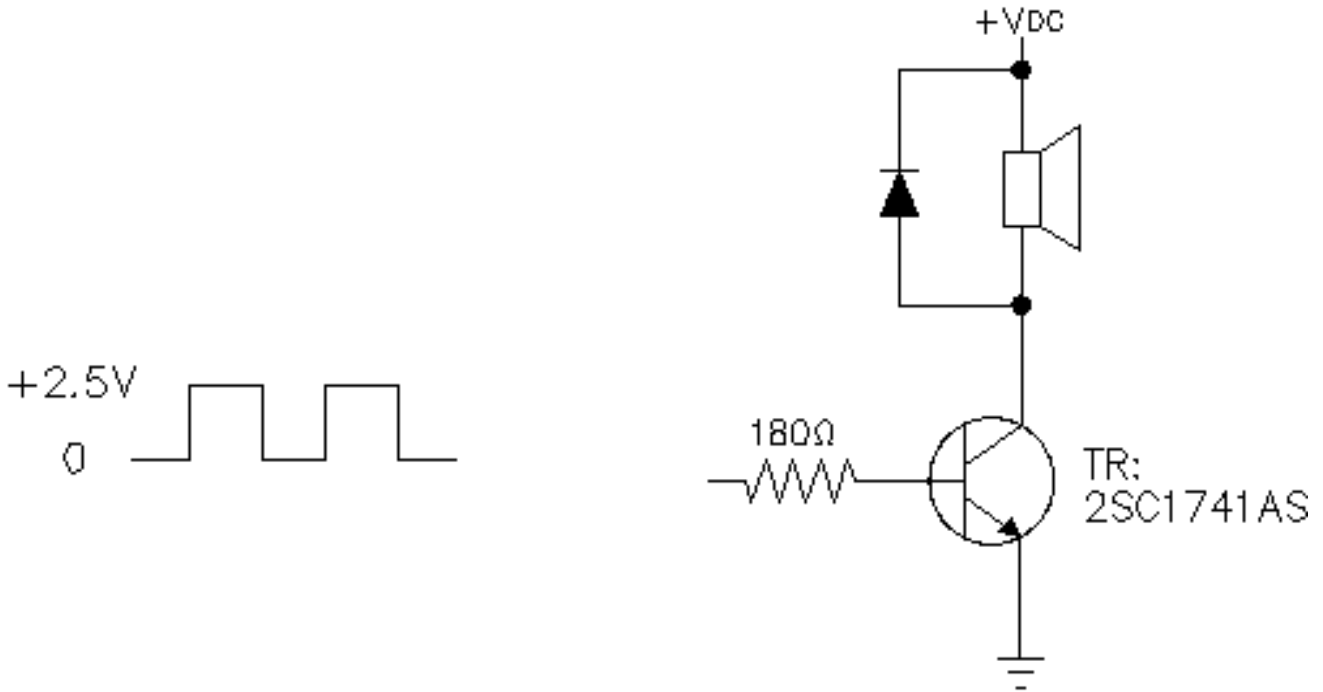


**D. APPEARANCE DRAWING 外觀尺寸圖**



**Tol:  $\pm 0.5$  Unit: mm**

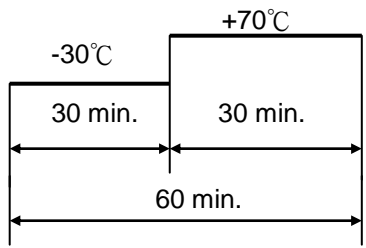
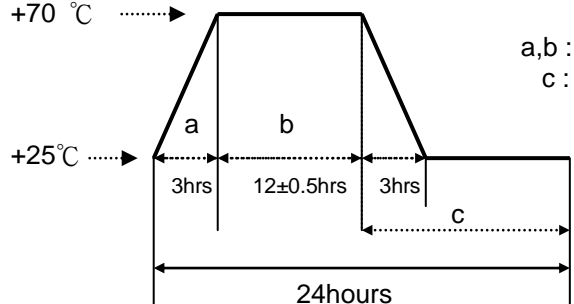
**E. MEASUREMENT METHOD 測量方式**



## F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test Condition	Evaluation standard
1	Solderability 焊錫附着性	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of $+270\pm 5^{\circ}\text{C}$ for $3\pm 1$ seconds. 端子部份浸入松香溶液 5 秒後,再浸入 $+270\pm 5^{\circ}\text{C}$ 溶融焊錫槽中 $3\pm 1$ 秒.	90% min. lead terminals shall be wet with solder. (Except the edge of terminal) 浸入端子部份附着焊錫 90% 以上.(末端斷面不算)
2	Soldering Heat Resistance 焊錫耐熱性	Stripped wires are immersed up to 1.5mm from insulation in solder bath of $+300\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds or $+260\pm 5^{\circ}\text{C}$ for $10\pm 1$ seconds, and then sounder shall be measured after being placed in natural condition for 4 hours. 距絕緣體 1.5mm 的位置,浸入 $+300\pm 5^{\circ}\text{C}$ 的焊錫槽 $3\pm 0.5$ 秒,或 $+260\pm 5^{\circ}\text{C}$ 的焊錫槽 $10\pm 1$ 秒.	No interference in operation. 操作無任何不良.
3	Terminal Strength Pulling 端子強度	The force 10 seconds of 9.8N(1.0kg) is applied to each terminal in axial direction. 各端子的軸方向施以 9.8N(1.0kg) 的力量 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 10~55HZ、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 10% compared with initial ones .The SPL should be in $\pm 10\text{dB}$ 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 $\pm 10\%$ 內. 輸出音壓變化量須在 $\pm 10\text{dB}$ 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 $+60^{\circ}\text{C}$ for 96 hours. 置於 $+70^{\circ}\text{C}$ 環境中 96 小時	After the test the part shall meet specifications with-out any degradation in appearance and performance except SPL. after 4 hours at $+25^{\circ}\text{C}$ . the SPL should be in $\pm 10\text{dBA}$ compared with initial one.
2	Low temp. test 低溫測試	After being placed in a chamber at $-20^{\circ}\text{C}$ for 96 hours. 置於 $-30^{\circ}\text{C}$ 環境中 96 小時	
3	Thermal Shock 熱衝擊試驗	The part shall be subjected to 10 cycles. One cycle shall consist of; 對單體施以熱衝擊試驗 10 次循環,其循環內容如圖示 	
4	Temp./ Humidity Cycle 溫度/溼度循環測試	The part shall be subjected to 10 cycles. One cycle shall be 24 hours and consist of; 單體承受溫度/溼度循環測試 10 次.其循環內容如圖示 	經測試後,靜置於 $+25^{\circ}\text{C}$ (室溫) 環境中 4 小時後,單體除音壓外,外觀及電氣特性須符合規格. 輸出音壓變化量須在 $\pm 10\text{dBA}$ 內.

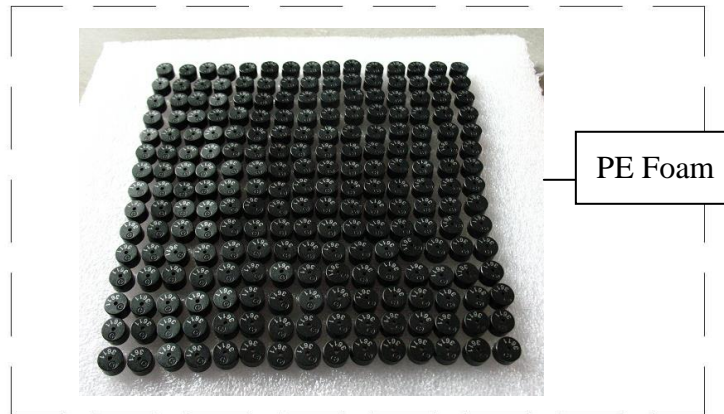
## H. RELIABILITY TEST 信賴性測試

No.	Item	Test condition	Evaluation standard
1	Operating life test 壽命測試	<p>1. Continuous life test 高溫壽命測試(連續) 72 hours continuous operation at +45°C with rated voltage applied. 在+45°C環境下,以額定電壓連續操作72小時。</p> <p>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 10000 times at room temp.(+25 ±2°C)and rated voltage applied. 在室溫下(+25 ±2°C),以額定電壓操作,通電1分鐘/斷電1分鐘,測試10000次循環。</p>	<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.</p> <p>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。</p>

**TEST CONDITION.**

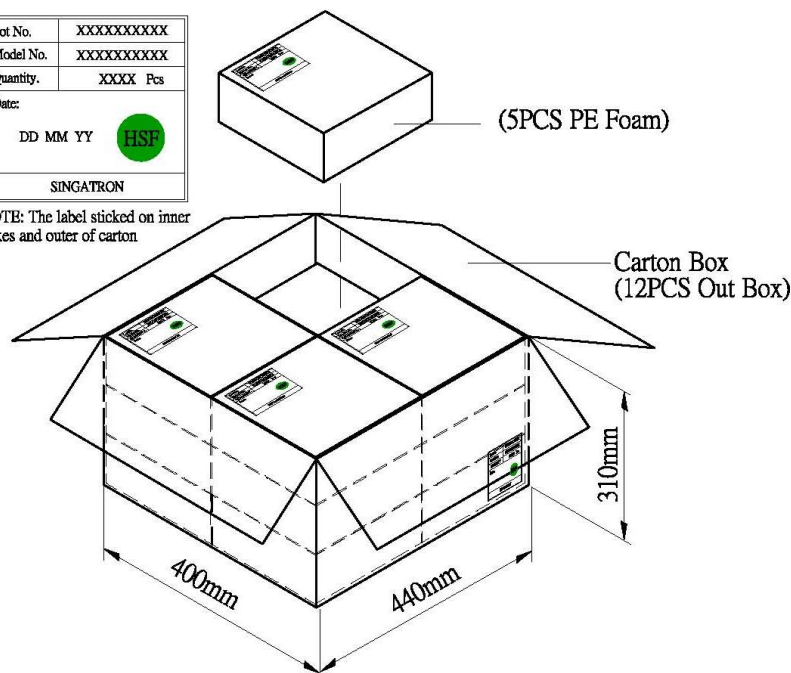
Standard Test Condition : a) Temperature : +5 ~ +35°C    b) Humidity : 45-85%    c) Pressure : 860-1060mbar  
 一般測試條件 : a) 溫度 : +5 ~ +35°C    b) 濕度 : 45-85%    c) 氣壓 : 860-1060mbar  
 Judgement Test Condition : a) Temperature : +25 ±2°C    b) Humidity : 60-70%    c) Pressure : 860-1060mbar  
 爭議時測試條件 : a) 溫度 : +25 ±2°C    b) 濕度 : 60-70%    c) 氣壓 : 860-1060mbar

**I.PACKING STANDARD 包裝規格**



Lot No.	XXXXXXXXXX
Model No.	XXXXXXXXXX
Quantity.	XXXX Pcs
Date:	DD MM YY
	
SINGATRON	

NOTE: The label stuck on inner boxes and outer of carton



Tray	170mmx170mmx5mm	1x225PCS=225PCS
Out Box	200mmx190mmx100mm	5LAYERx225PCS=1125PCS
Carton Box	440mmx400mmx310mm	1125PCSx12=13500PCS