

SPECIFICATION FOR APPROVAL

承 认 书

Description : Integrated Buzzer

Vender's Part No. : TMB12A24

Customer's Name. : _____

Serial No. : _____

Version No. : _____

CUSTOMER'S APPROVED SIGNATURE		

Approved By	Checked By	Made By

A. SCOPE

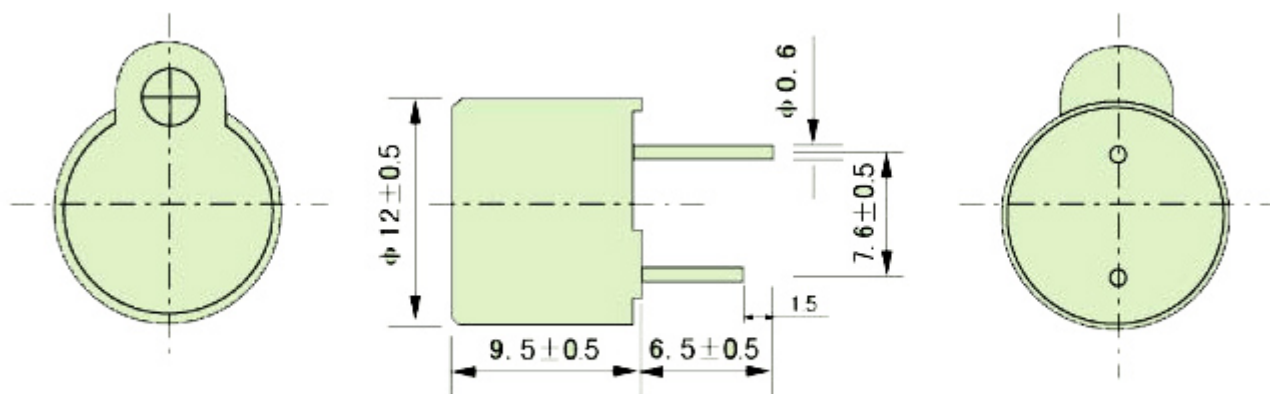
This specification applies Integrated buzzer, **TMB12A24**

B. SPECIFICATION

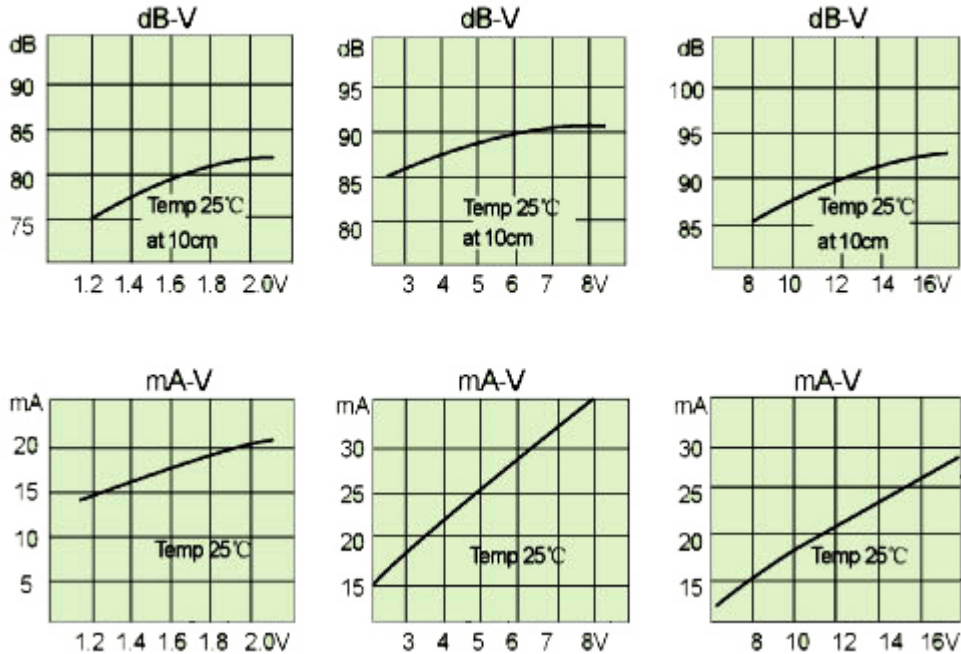
No.	Item	Unit	Specification	Condition
1	Oscillation Frequency	KHz	2.4±0.2	
2	Operating Voltage	V _{DC}	12-24V	
3	Rated Voltage	V _{DC}	24	
4	Current Consumption	mA	MAX 45	at Rated Voltage
5	Sound Pressure Level	dB	MIN. 90	at 10cm at Rated Voltage
6	Tone Nature		Constant	
7	Operating Temperature	°C	-30~ +75	
8	Storage Temperature	°C	-40~ +85	
9	Dimension	mm	Φ12.0 x H9.5	See appearance drawing
10	Weight (MAX)	gram	2.0	
11	Housing Material		PPO(Black)	
12	Leading Pin		Triode	
13	Environmental Protection Regulation		\	

C. APPEARANCE DRAWING

Tol: ± 0.5 Unit: mm



D. Typical Frequency Response Curve



可靠性测试

在下面任何一项测试后都要符合以下标准，外观和电性能(除声压外)上不能有不良或衰减现象出现，声压不能低于规格说明书的最低声压的 10dB。

1.1 寿命测试

将测试件置于 $25 \pm 10^\circ\text{C}$ 的温度下，输入额定电压、占空比为 1/2 的谐振频率方波测试 96 小时。

1.2 高温测试

将测试件置于 $+85^\circ\text{C}$ 的温度下存放 96 小时，取出置于常温下 3 小时而后测试。

1.3 低温测试

将测试件置于 -40°C 的温度下存放 96 小时，取出置于常温下 3 小时而后测试。

1.4 湿度测试

将测试件置于温度 $+40 \pm 3^\circ\text{C}$ ，湿度 90%~95% 的条件下持续 48 小时，再置于室温下 6 小时而后测试。

1.5 温度冲击测试

将测试件置于以下温变条件下：70°C2 小时→25°C2 小时(1 周期)，做完一个周期实验，过 1 个小时后再继续下一次实验，总测试周期数：10 个周期。

1.6 落地测试

将测试件标准包装后(包装盒的 3 个边 6 个面)从 1.2 米的高度下落到厚木板或 5 厘米厚的硬木板上。

1.7 机械振动测试

按以下条件实验后再测试：振速:1000 次/分；振幅:1.5 毫米；时间：1 小时更换一个自由度方向共 3 个自由度方向。

注意：

需避免无关材料进入产品内，无关材料如：磁性材料、水溶性的材料、腐蚀性的气体等。因为这些无关材料将会影响产品的电性能。

Material

Housing	PPO plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	2.0

3.

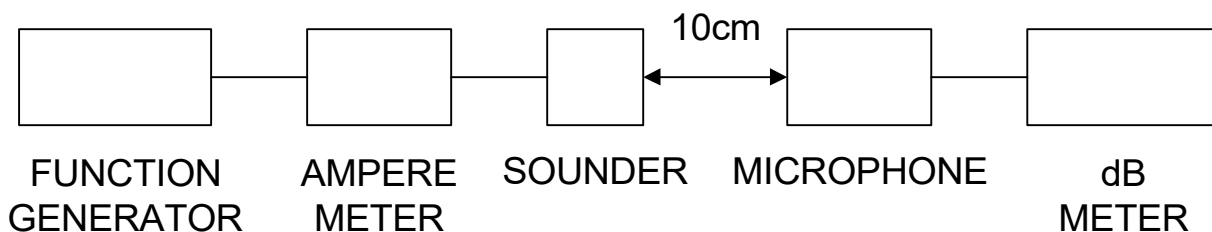
TESTING METHOD

. Standard Measurement conditions

Temperature:25±2°C Humidity:45-60%

. Acoustic Characteristics

The oscillation frequency, current consumption and sound pressure are measured by the measuring instruments shown below.



In the measuring test, buzzers is placed as follows:

4. RELIABILITY

5. PACKAGE METHOD

<1>	ITEMS	METHOD OF TEST AND MEASUREMENTS	PERFORMANCE
n	Coldness withstanding	After 98 hours of being exposed to -30 °C environment, should be returned to normal environment for 2 hours, then re-proceed to test.	No abnormality shall exist
i	Hotness withstanding	After 98 hours of being exposed to +80 °C environment, should be returned to normal environment for 2 hours, then re-proceed to test.	No abnormality shall exist
e	Humidity withstanding	After 98 hours of being exposed to 40 °C 95%RH environment in actual operation, should be returned to normal environment for 2 hours, then re-proceed to test.	No abnormality shall exist
b	Durability	Testing after 1,000 hours actual continuous operation. (at standard measurement conditions)	No abnormality shall exist
x	Drop withstanding	A natural drop from 75cm high down to the ground.	No abnormality shall exist
c	Vibration withstanding	Vibration of 2,000 cycles per minute, 2mm amplitude, applied in X, Y and Z directions for 30 minutes each.	No abnormality shall exist
n			

sists of 100pcs.

- <2> 10 inner boxes are packed in a carton box. (L*W*H=520*430*280mm)
(1000pcs of FDB-09605-0527 are packed in a carton box.)