



# MANORSHI ELECTRONICS CO.,LTD

## PRODUCT SPECIFICATION

Product Name: Piezo Buzzer

Part Number: MSPS23A35P15V12

Document No: \_\_\_\_\_

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DRAWING BY	CHECKED BY	APPROVED BY
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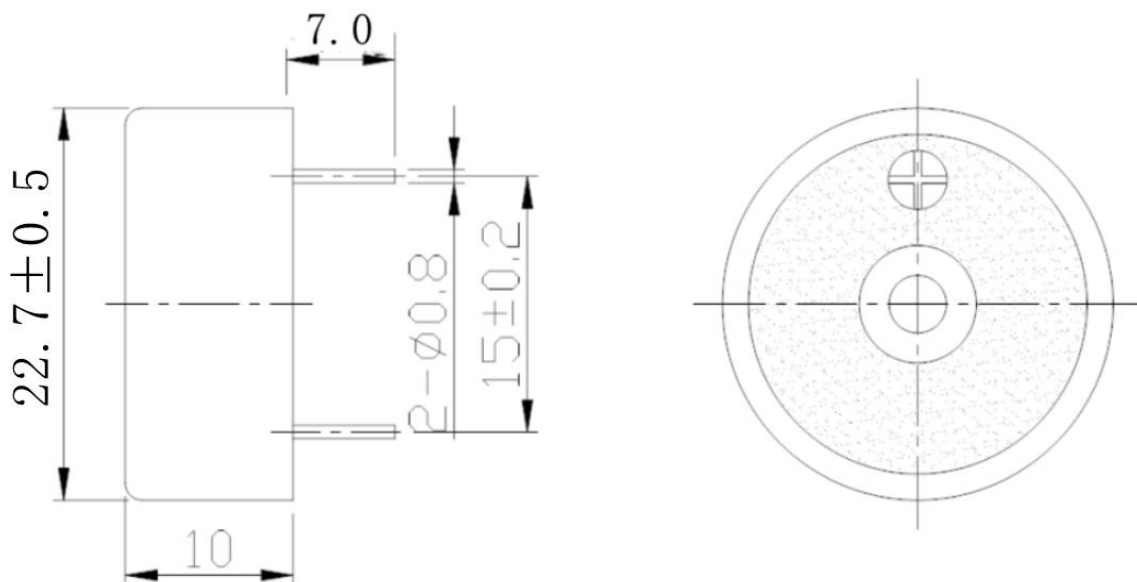
## 1.SPECIFICATION

TYPE	MSPS23A35P15V12
Sound pressure Level	90dB Min/10cm
Rated Voltage VDC	12V
Resonant Frequency	3.5±0.5kHz
Current at rated Voltage	15.0mA Max.
◆Operating Voltage	3-20 Vdc
Operation Temperature	-20°C - +70°C
Storage Temperature	-30°C - +80°C
Tone Nature	Single
Weight	4
House material	MPPO

◆ VALUE APPLYING RATED VOLTAGE (3500Hz 1/2 DUTY SQUARE WAVE)

△VALUE APPLYING (3500Hz SINE WAVE MEASURING CURRENT 60μA)

## 2.APPEARANCE DRAWING



(UNIT:MM) Tolerance: ±0.5mm

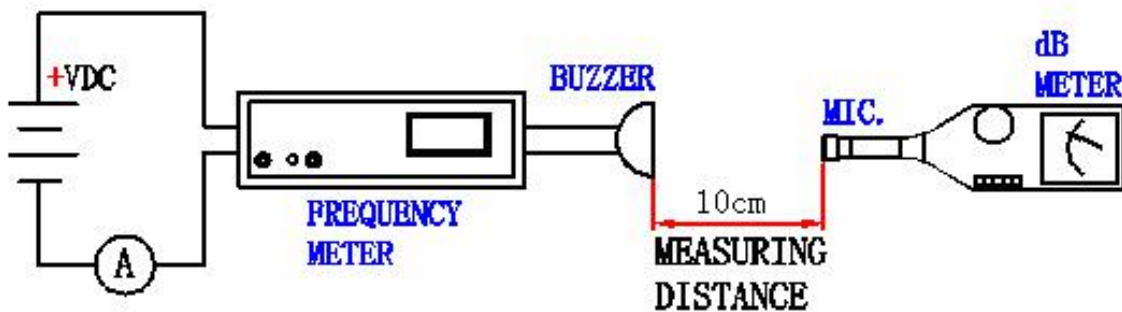
## 3. TESTING METHOD

### Standard Measurement conditions

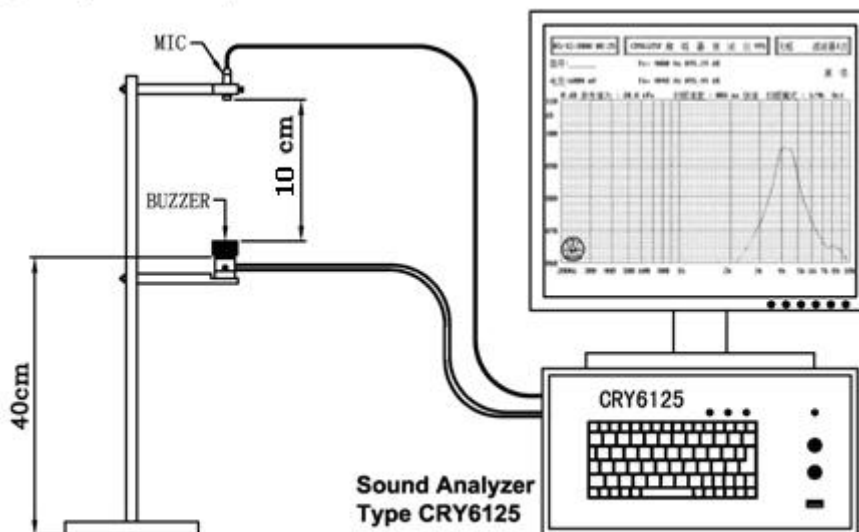
Temperature:  $25 \pm 2^\circ\text{C}$  Humidity: 45-65%

### Acoustic Characteristics:

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



In the measuring test, buzzer is placed as follows:





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## 4.RELIABILITY TEST

NO.	ITEM	TEST CONDITION AND REQUIREMENT
1	High Temperature Test (Storage)	After being placed in a chamber with 80 °C for 96 hours and then being placed in normal condition for 2 hours.
2	Low Temperature Test (Storage)	After being Placed in a chamber with -30 °C for 96 hours and then being placed in normal condition for 2 hours.
3	Humidity Test	After being Placed in a chamber with 90-95% R.H. at 40 °C for 96 hours and then being placed in normal condition for 2 hours.
4	Temperature Cycle Test	<p>The part shall be subjected to 5 cycles. One cycle shall be consist of:</p>
5	Drop Test	Drop on a hard wood board of 4cm thick, any directions ,3 times,at the height of 75cm .
6	Vibration Test	After being applied vibration of amplitude of 1.5mm with 10 to 55 Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours .



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7	Solderability Test	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of +300 5°C for 3 1 seconds . 90% min. lead terminals shall be wet with solder (Except the edge of terminals).
8	Terminal Strength Pulling Test	The force of 9.8N(1.0kg) is applied to each terminal in axial direction for 10 seconds. No visible damage and cutting off.

**Remark:** Allowable variation of SPL after test: +/-10dB.

### TEST CONDITION.

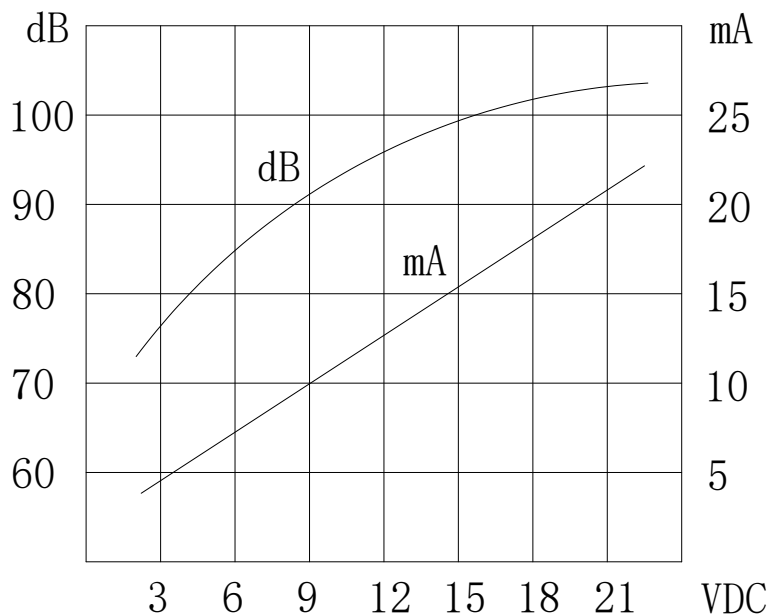
Standard Test Condition: a) Temperature : +5 ~ +35°C b) Humidity : 45-85%  
c) Pressure : 860-1060mbar

一般测试条件: a) 温度 : +5 ~ +35°C b) 湿度 : 45-85%  
c) 气压 : 860-1060mbar

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

争议时测试条件: a) 温度 : +25 ± 2°C b) 湿度 : 60-70%  
c) 气压 : 860-1060mbar

## 5.FREQUENCY CURVE





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## 6. PACKING STANDARD

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