



# Product Specification

**Ningbo East Electronics Limited**  
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Product Name:	Piezo Buzzer
Part Number:	EFM-321S
Version:	1.02
Date:	2019-8-20
Note:	

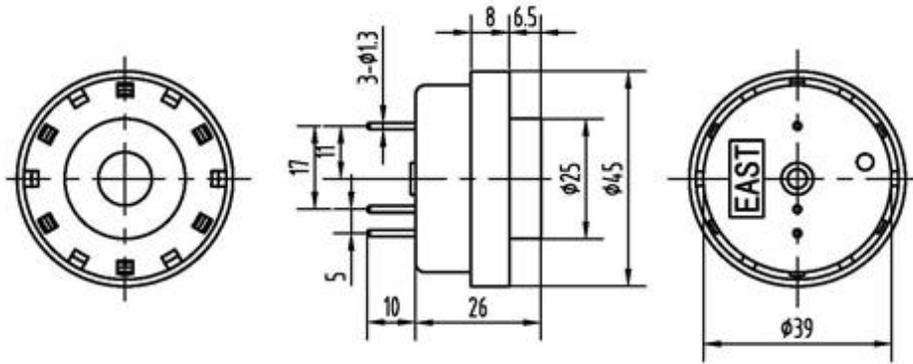
**East is an ISO 9001 , IATF16949 and ISO 14001 Certified Company**

## Revision History

Rev.	Description	Author/Date	Checked By	Approver
1.02	Quality management system revised	汤礼东 2019-8-20	吕文斌	王建成
1.01	Quality Certificate Symbol revised	吕文斌 2015-2-9	汤礼东	王建成
1.0	Released	汤礼东 2012-1-4	张春雷	王建成

## 1. Part Number EFM-321S

## 2. Dimension Drawing (Unit: mm)



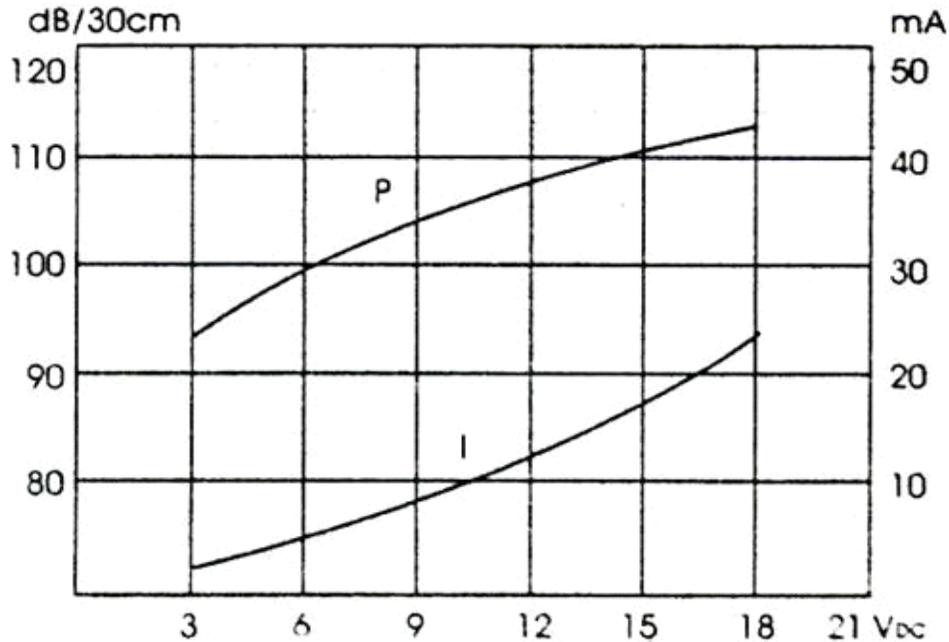
## 3. Specification

No.	Item	Specification
3-1	Min. Sound Pressure Level	105dB/12V <sub>DC</sub> /30cm
3-2	Rated Voltage	12V <sub>DC</sub>
3-3	Operating Voltage	3~16V <sub>DC</sub>
3-4	Max. Consumption	35mA/12V <sub>DC</sub>
3-5	Oscillating Frequency	2.9±0.5 kHz
3-6	Tone Nature	Continuous
3-7	Operating Temperature	-20~+70°C
3-8	Case Material/Color	Fire-resistance ABS/White
3-9	Weight	18.6g
3-10	Pin Strength	More than 10N

### NOTES:

Test should be made under the conditions of room temperature (20±10°C), normal humidity (60±20%) and normal atmospheric pressure. In this case, however, that the judgment is questionable, the test conditions are to be changed to room temperature 20±2°C, relative humidity 60~70% and normal atmospheric pressure

#### 4. Typical Frequency Response Curve



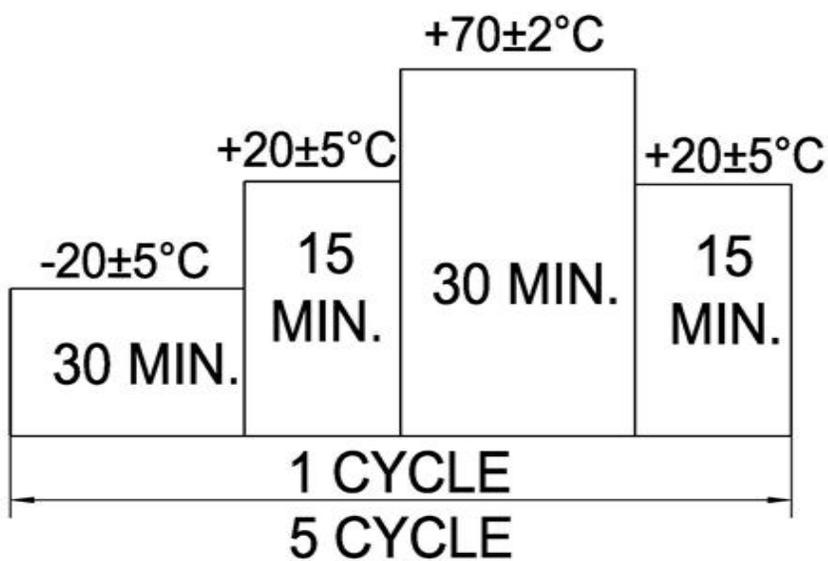
**Note:**Distance 30 cm

#### 5. Reliability Test

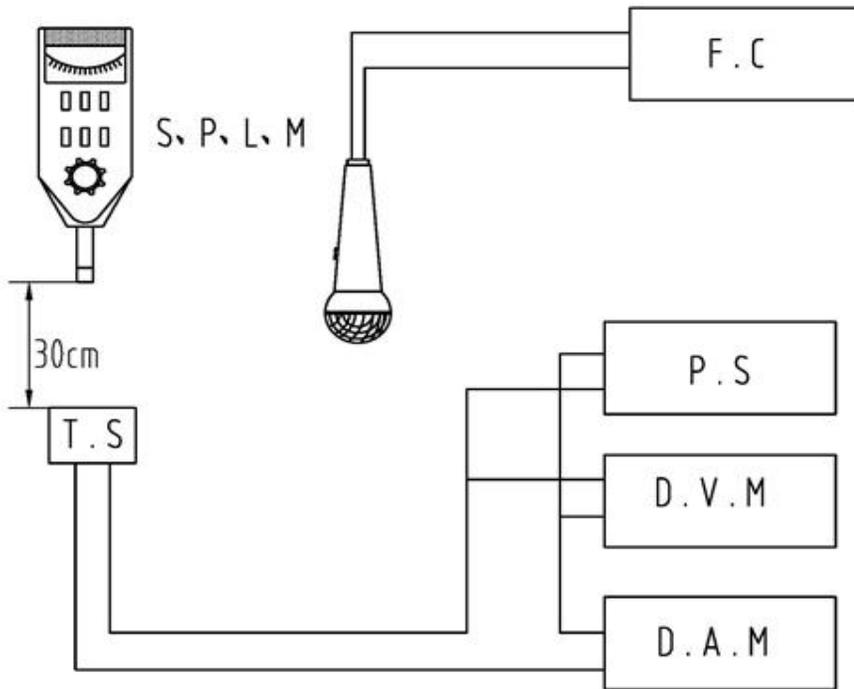
No.	Item	Method of Test	Tolerance after Testing
5-1	Operating Temperature	-20~+70°C	Sound pressure level initial value ±10dB Max. consumption value ±20% Oscillating Frequency Value±20%
5-2	Storage in high temperature	Storage in +70°C test box 96 hours then exposed to the room temperature for 2 hours	
5-3	Storage in low temperature	Storage in -20°C test box 96 hours then exposed to the room temperature for 2 hours	
5-4	Life test in the room temperature	Operate the product continuously 5 seconds on 5 seconds off 300 hours at rated voltage	
5-5	Temperature / humidity cycle test	Storage in +40°C, 93±3%RH test box 96 hours then exposed to the room temperature for 2 hours	
5-6	Temperature (high and low) cycle test	Conduct the test for 5 cycles without applying power then expose to the room temperature for 2 hours.(See Figure 5-6)	
5-7	Vibration test	Conduct the test for the directions of X Y and Z for 0.5 hour each (total 1.5 hours). To-and Fri sweep time(from 10 to 55Hz and then 55 to 10) under single amplitude of 0.75mm is 3 minute, then expose to the room temperature for 2 hours	

5-8	Drop test	surface of 100mm thick wooden board. Two directions: upper and side of the product are to be applied for this drop test once respectively	
5-9	Soldering heat resistance test	Dip the connecting pins in soldering at $260\pm 5^{\circ}\text{C}$ for $10\pm 1$ seconds	
5-10	Test of soldering	Dip the connecting pins in soldering at $230\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds	Solder shall be attached around over 95% of the dipped portion
<b>NOTE:</b> The pins are allowed to deform after drop test.			

Figure 5-6



## 6. Electrical Testing Method



S.P.L.M	Sound Pressure Level Meter
T.S	Testing Sample
F.C	Frequency Counter
P.S	Power Supply
D.V.M	DC Voltage Meter
D.A.M	DC Ampere Meter

## 7. Packing Information

**Packing: 300 pcs per export carton**

**Carton Size: 47× 30.5× 25 cm**

**G. Weight: 8.4 kgs N. Weight: 5.6 kgs**