



# Product Specification

|               |              |
|---------------|--------------|
| Product Name: | Piezo Buzzer |
| Part Number:  | EFM-320D     |
| Version:      | 1.01         |
| Date:         | 2015-2-9     |
| Note:         |              |

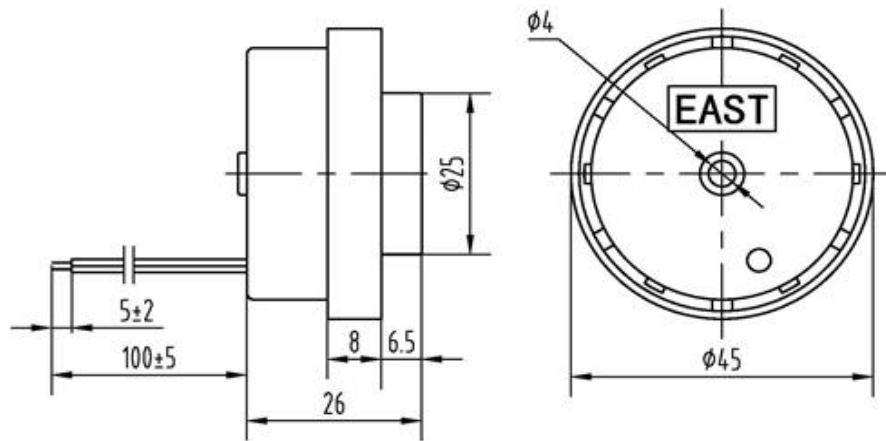
Company passed ISO 9001 / ISO TS16949 / ISO 14001 Certifications

## Revision History

| Rev. | Description                        | Author/Date       | Checked By | Approver |
|------|------------------------------------|-------------------|------------|----------|
| 1.01 | Quality Certificate Symbol revised | 吕文斌<br>2015-2-9   | 汤礼东        | 王建成      |
| 1.0  | Released                           | 汤礼东<br>2011-12-16 | 张春雷        | 王建成      |

## 1. Part Number EFM-320D

## 2. Dimension Drawing (Unit: mm)



Continuous: Red wire(+) Black wire(-)

Pulse: Yellow wire(+) Black wire(-)

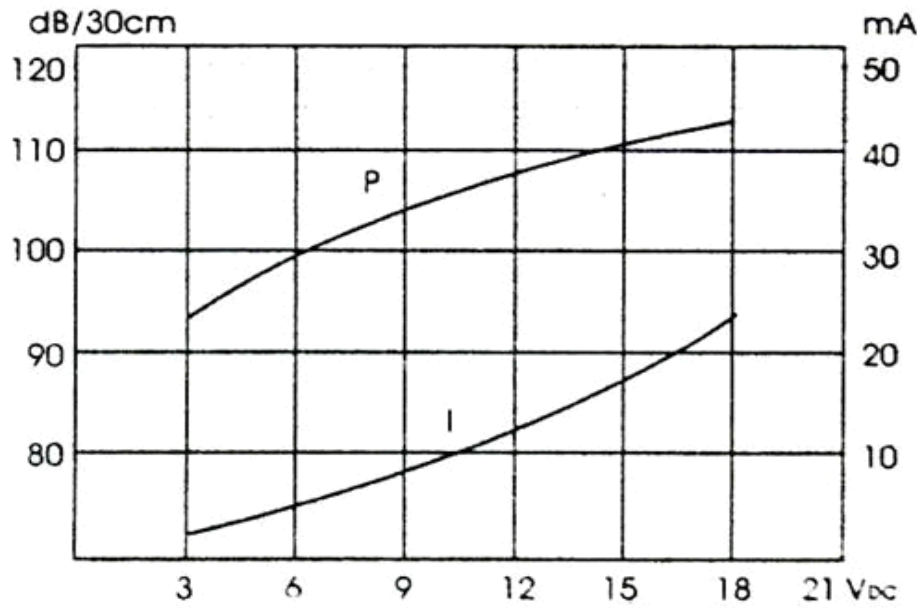
## 3. Specification

| No.  | Item                      | Specification                     |
|------|---------------------------|-----------------------------------|
| 3-1  | Min. Sound Pressure Level | 105(92)dB/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          | 35(20)mA/12V <sub>DC</sub>        |
| 3-5  | Oscillating Frequency     | 2.9±0.5 kHz                       |
| 3-6  | Tone Nature               | Continuous/Pulse (2~7Hz)          |
| 3-7  | Operating Temperature     | -20~+70°C                         |
| 3-8  | Case Material/Color       | Fire-resistance ABS/White         |
| 3-9  | Weight                    | 18.8g                             |
| 3-10 | Wire Standard             | UL1095-26AWG                      |

### 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<br>initial value $\pm 10\text{dB}$<br><br>Max. consumption<br>value $\pm 20\%$<br><br>Oscillating Frequency<br>value $\pm 20\%$ |
| 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 $\pm$ 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                             | Drop a product naturally from the height of 700mm onto the surface of 100mm thick wooden board. Two directions: upper and side of the product are to be applied for this drop test once respectively   |  |

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: 500 pcs per export carton**

**Carton Size: 47× 30.5× 33 cm**

**G. Weight: 12.2 kgs N. Weight: 9.4 kgs**