

## Piezoelectric Ceramic Buzzer (Pin Type)

<b>2-3</b>	HPA22D
<b>4-5</b>	PKM13EPYH4002-B0
<b>6-7</b>	PKM13EPYH4000-A0
<b>8-9</b>	HPM14A
<b>10-11</b>	HPA17F
<b>12-13</b>	KSE-R-2240A

**1. Product type: Piezoelectric Ceramic Buzzer (Pin Type)**
**2. Technical Parameter Measuring condition**

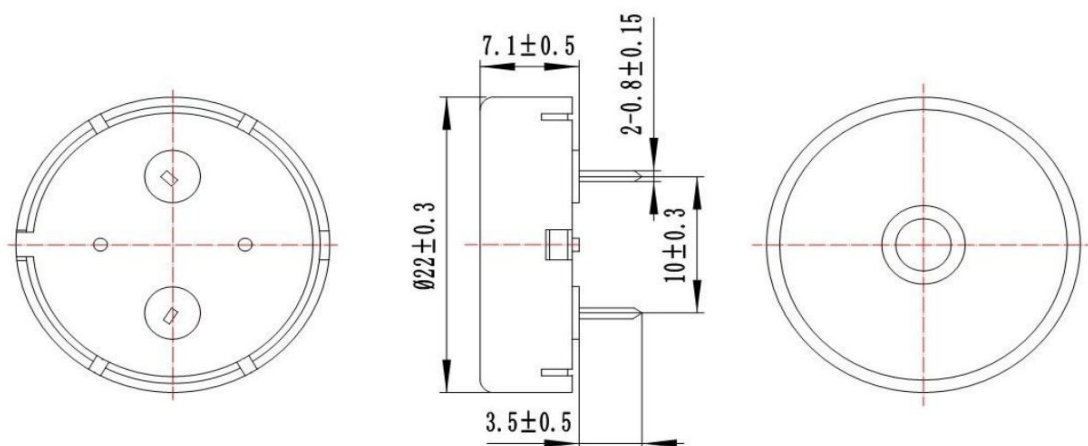
Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3°C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.



1	Resonant Frequency	4000Hz
2	Operating Voltage	1 ~ 25 Vp-p
3	Rated Current	Max.5mA , At 4000Hz 50% duty Square Wave 10Vp-p
4	Sound Output at 10cm	Min.90dB, At 4000Hz 50% duty Square Wave10Vp-p
5	Capacitance	25000 ± 30% pF At 120Hz
6	Operating Temperature	-20°C ~ +105°C
7	Store Temperature	-30°C ~ +105°C
8	Net Weight	Approx 2.0g
9	RoHS	Yes

**3. Dimensions**

Unit: mm

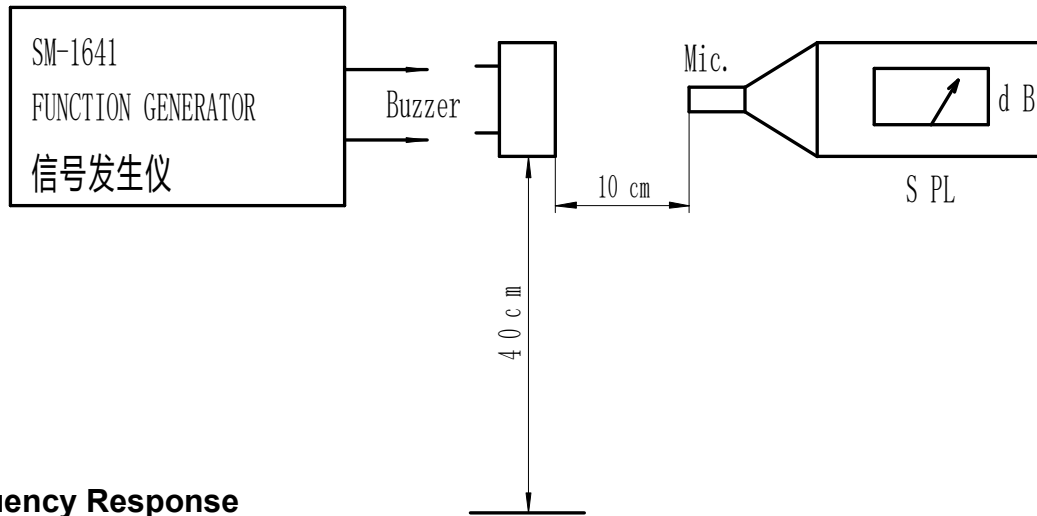

 \*Unit: mm; Tolerance:  $\pm 0.5$ mm Except Specified

\*Housing Material: Black PBT

**Piezoelectric Ceramic Buzzer**

**4. Electrical And Acoustical Measuring Condition**

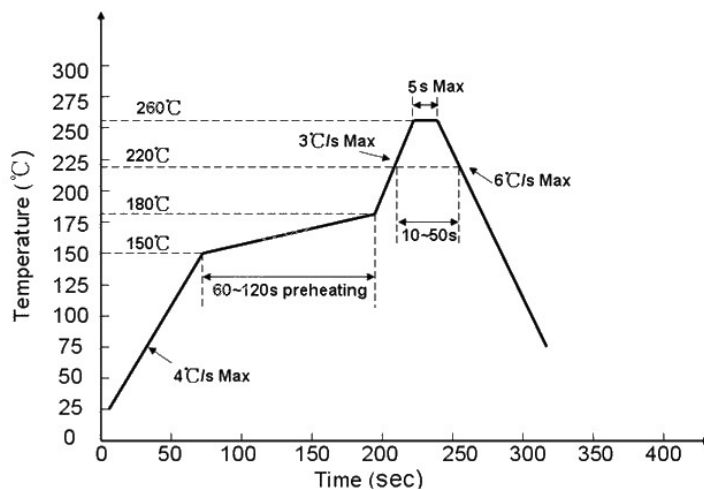
**Recommended Setting**



**5. Frequency Response**

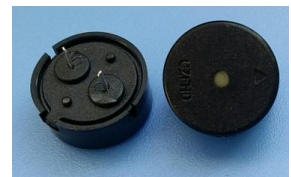


**7. Recommended wave soldering temperature**



**1. Product type: Piezoelectric Ceramic Buzzer (Pin Type)**
**2. Technical Parameter Measuring condition**

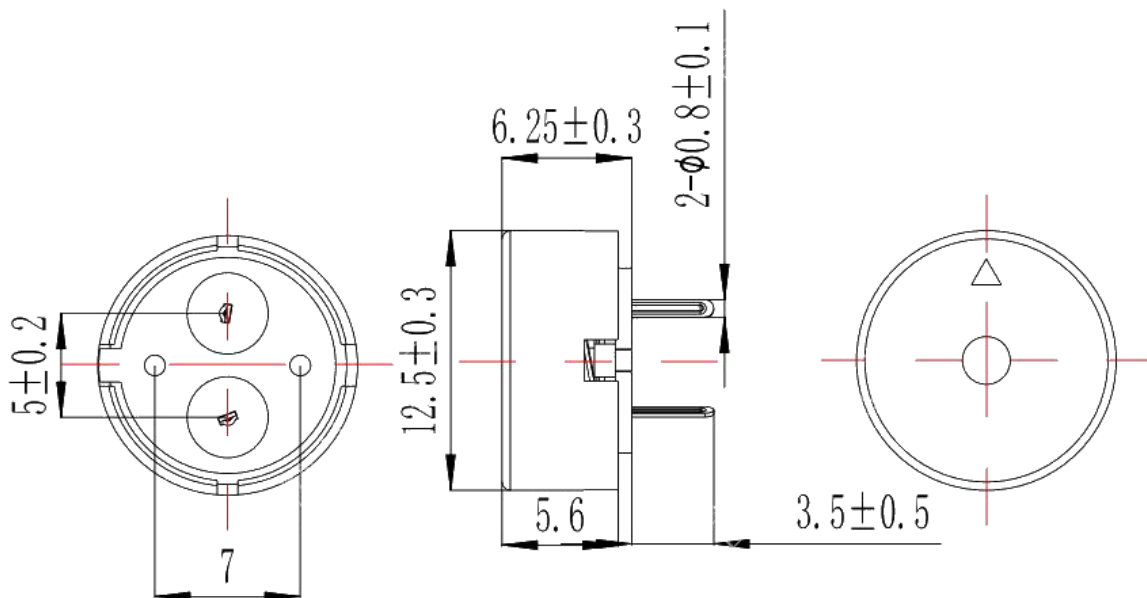
Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3°C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.



1	Resonant Frequency	4000Hz
2	Operating Voltage	3 ~ 20 Vp-p
3	Rated Current	Max.3mA , At 4KHz 50% duty Square Wave 5Vp-p
4	Sound Output at 10cm	Min.80dB, At 4KHz 50% duty Square Wave 5Vp-p
5	Capacitance	12000 ± 30% pF At 1KHz
6	Operating Temperature	-20°C ~ +80°C
7	Store Temperature	-30°C ~ +85°C
8	Net Weight	Approx 0.75g
9	RoHS	Yes

**3. Dimensions**

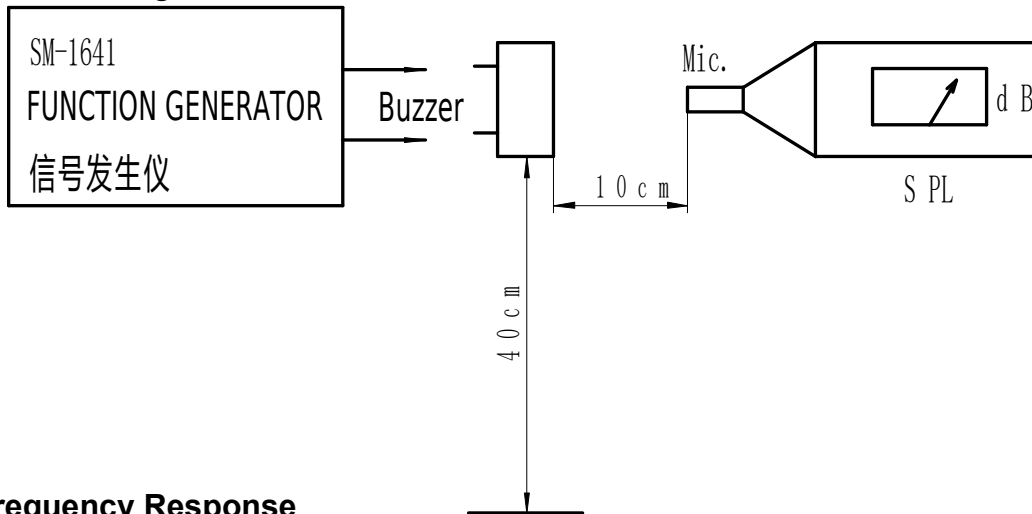
Unit: mm



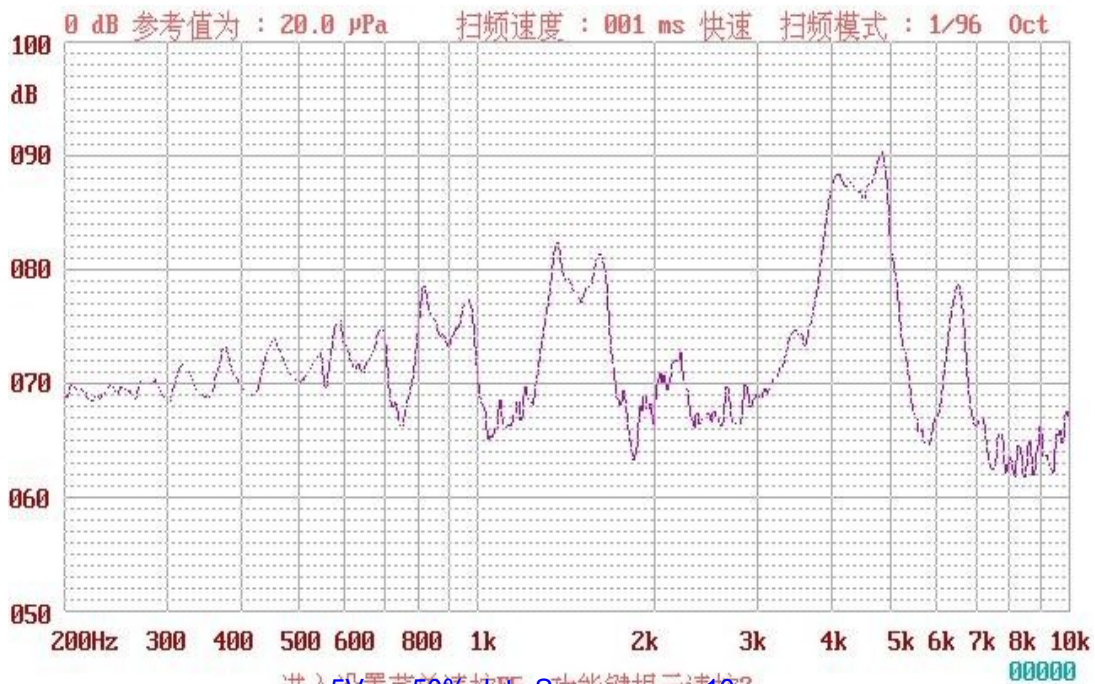
\*Unit: mm; Tolerance: ±0.5mm Except Specified

\*Housing Material: Black PBT

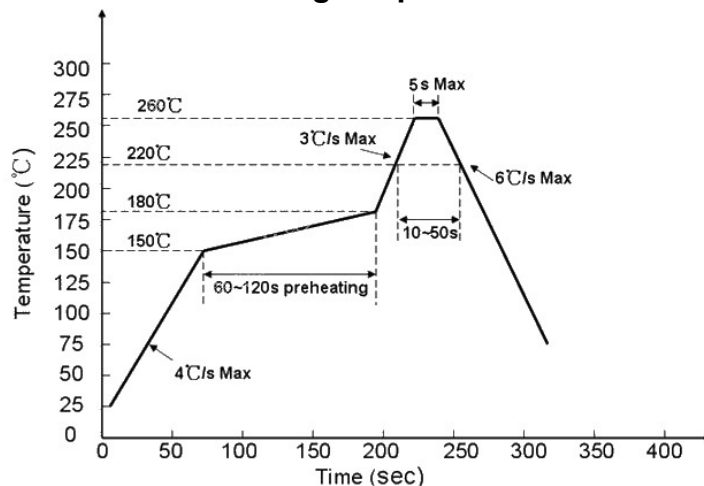
**4. Electrical And Acoustical Measuring Condition**  
Recommended Setting




**5. Frequency Response**

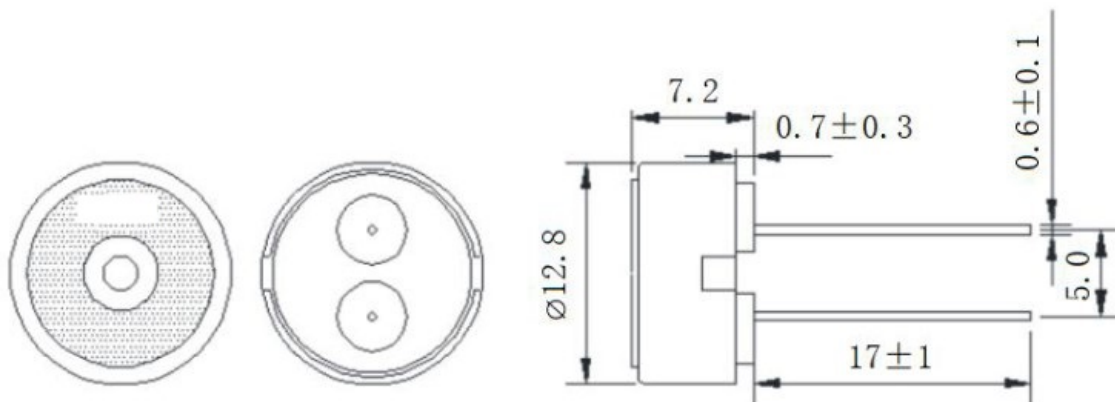


**7. Recommended wave soldering temperature**



**1. Product type: Piezoelectric Ceramic Buzzer (Pin Type)**

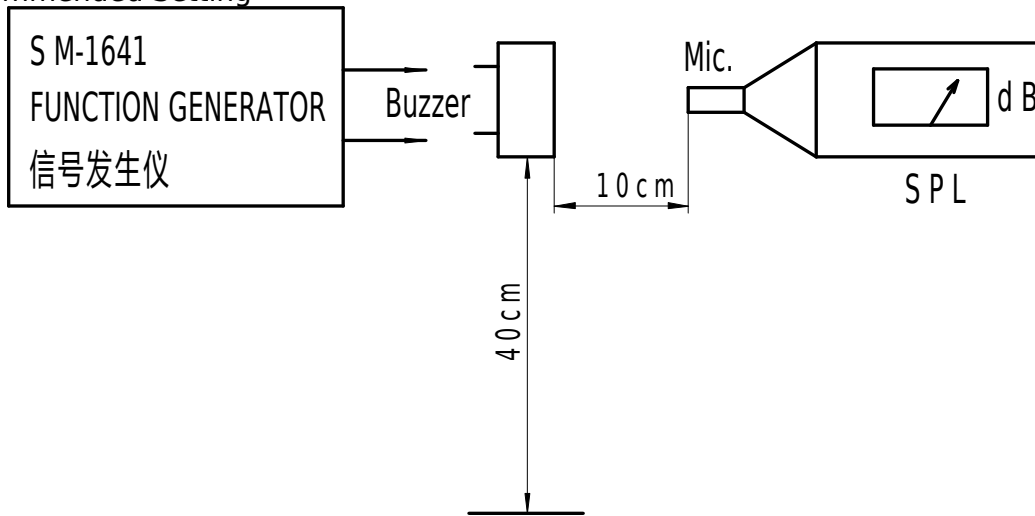
<b>2. Technical Parameter Measuring condition</b> Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3 °C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.		
1	Resonant Frequency	4000Hz
2	Operating Voltage	2- 25 Vp-p
3	Resonance Impedance	≤ 500Ω At 9.0KHz
4	Rated Current	Max.8mA At 4KHz 50% duty Square Wave 12Vp-p
5	Sound Output at 10cm	Min.80dB, At 4KHz 50% duty Square Wave 12Vp-p
6	Capacitance	9000±30% pF At 1KHz
7	Operating Temperature	-40°C ~ +85°C
8	Store Temperature	-40°C ~ +85°C
9	Net Weight	Approx 0.75g
10	RoHS	Yes

**3. Dimensions**      Unit: mm


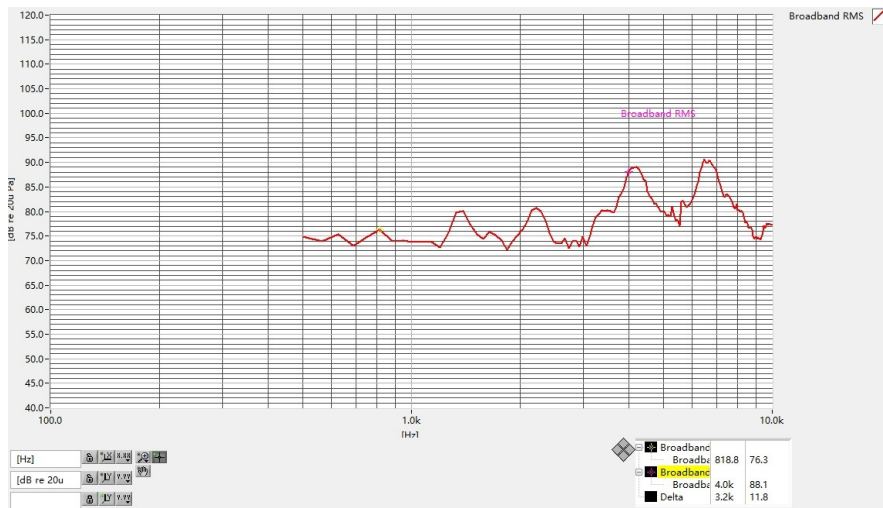
\*Unit: mm; Tolerance:  $\pm 0.5$ mm Except Specified

\*Housing Material: Black PBT

#### 4. Electrical And Acoustical Measuring Condition Recommended Setting

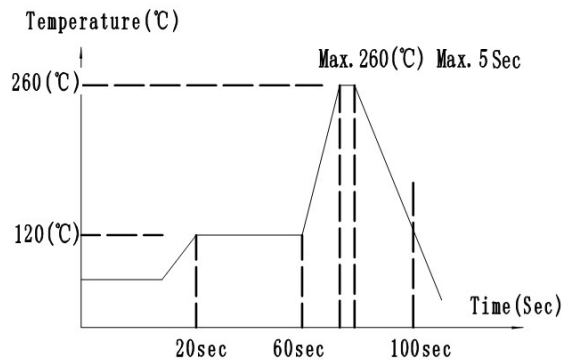


#### 5. Frequency Response



12Vp-p 50% duty Square wave, 10cm

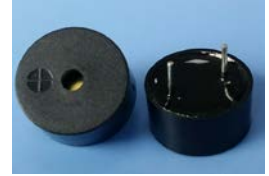
#### 6. Recommended the wave soldering temperature



**1. Product type:** Piezoelectric Ceramic Buzzer (Pin Type)

**2. Technical Parameter**
**Measuring condition**

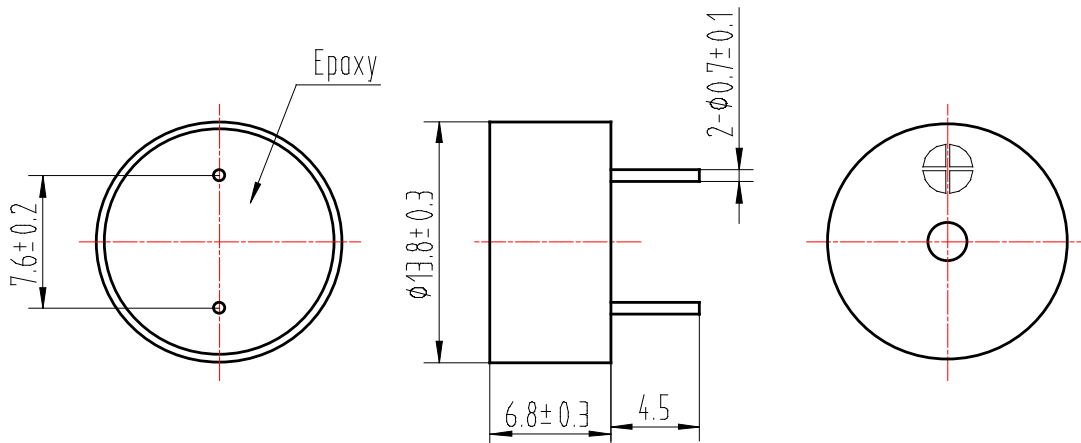
Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3°C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.



1	Resonant Frequency	4000Hz
2	Operating Voltage	1 ~ 25 Vp-p
3	Rated Current	Max.5mA , At 4KHz 50% duty Square Wave 5Vp-p
4	Sound Output at 10cm	Min. 85dB, At 4KHz 50% duty Square Wave 5Vp-p
5	Capacitance	12000 ± 30% pF At 1KHz
6	Operating Temperature	-20°C ~ 70°C
7	Store Temperature	-30°C ~ 80°C
8	Net Weight	Approx 0.5g
9	RoHS	Yes

**3. Dimensions**

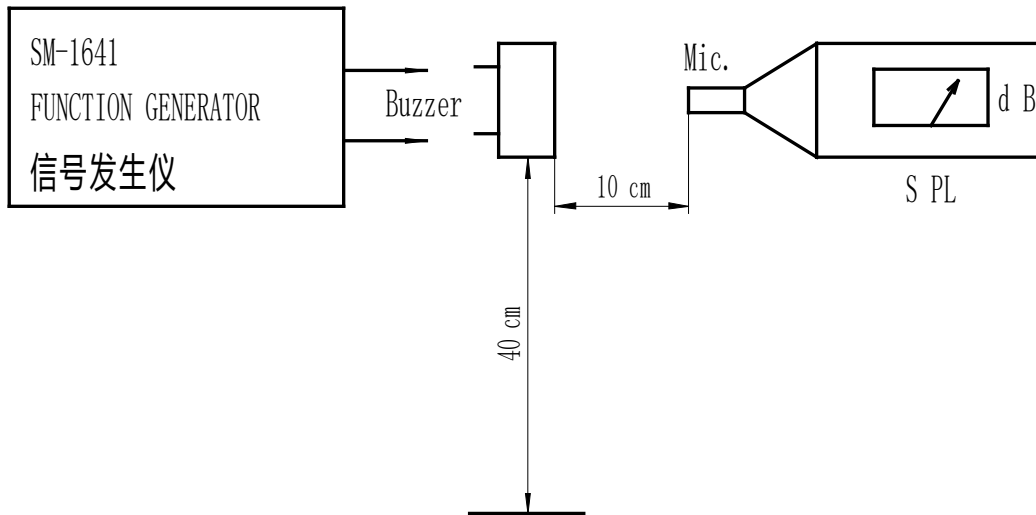
Unit: mm


 \*Unit: mm; Tolerance:  $\pm 0.5$ mm Except Specified

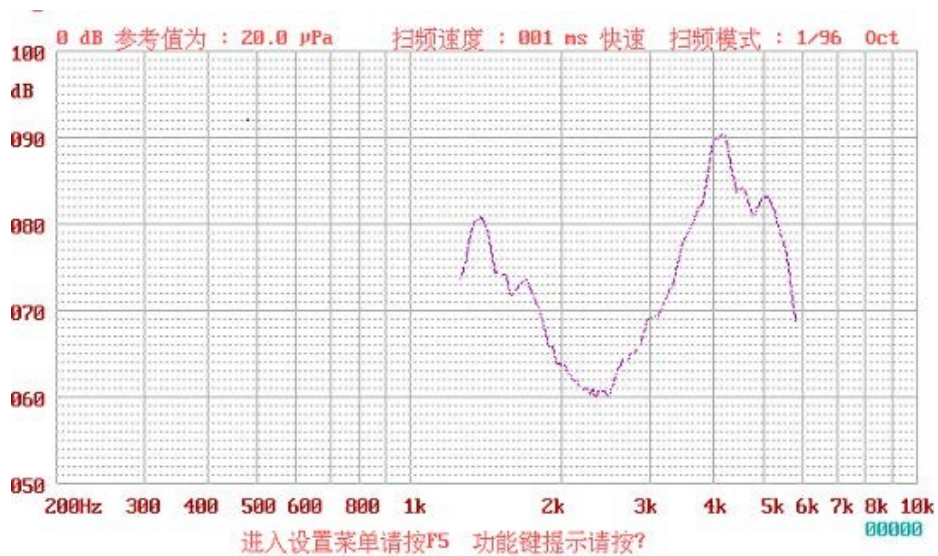
\*Housing Material: Black PBT

#### 4. Electrical And Acoustical Measuring Condition

##### Recommended Setting

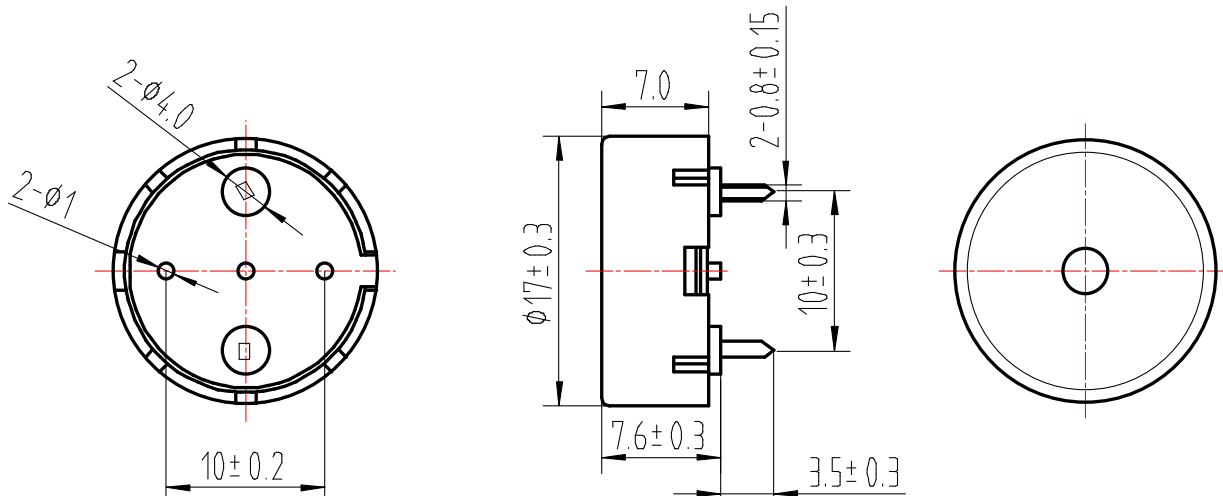


#### 5. Frequency Response



5Vp-p 50% duty Square wave, 10cm

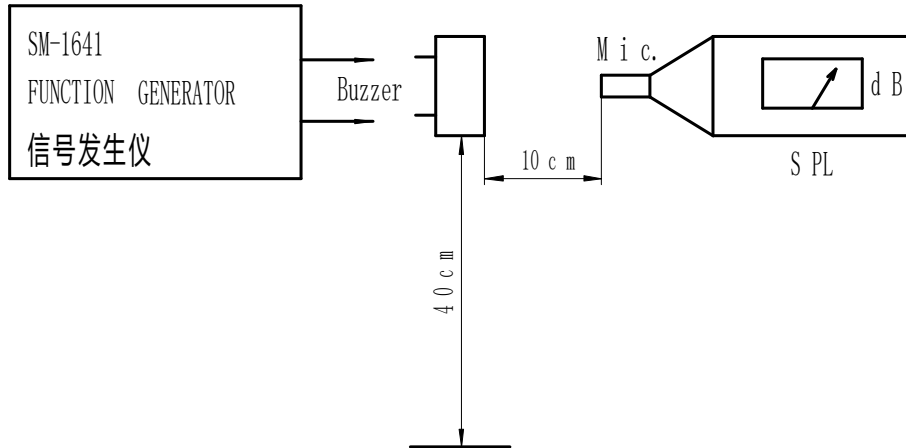
**1. Product type: Piezoelectric Ceramic Buzzer (Pin Type)**

<b>2. Technical Parameter</b>		<b>Measuring condition</b>
		Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3 °C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.
1	Resonant Frequency	4000Hz
2	Operating Voltage	1 ~ 25 Vp-p
3	Rated Current	Max.5mA , At 4KHz 50% duty Square Wave 5Vp-p
4	Sound Output at 10cm	Min. 80dB, At 4KHz 50% duty Square Wave 5Vp-p
5	Capacitance	15000 ± 30% pF At 1KHz
6	Operating Temperature	-20°C ~ 70°C
7	Store Temperature	-30°C ~ 80°C
8	Net Weight	Approx 1.5g
9	RoHS	Yes
<b>3. Dimensions</b> Unit: mm		
		
*Unit: mm; Tolerance: ± 0.5mm Except Specified		
*Housing Material: Black PBT		

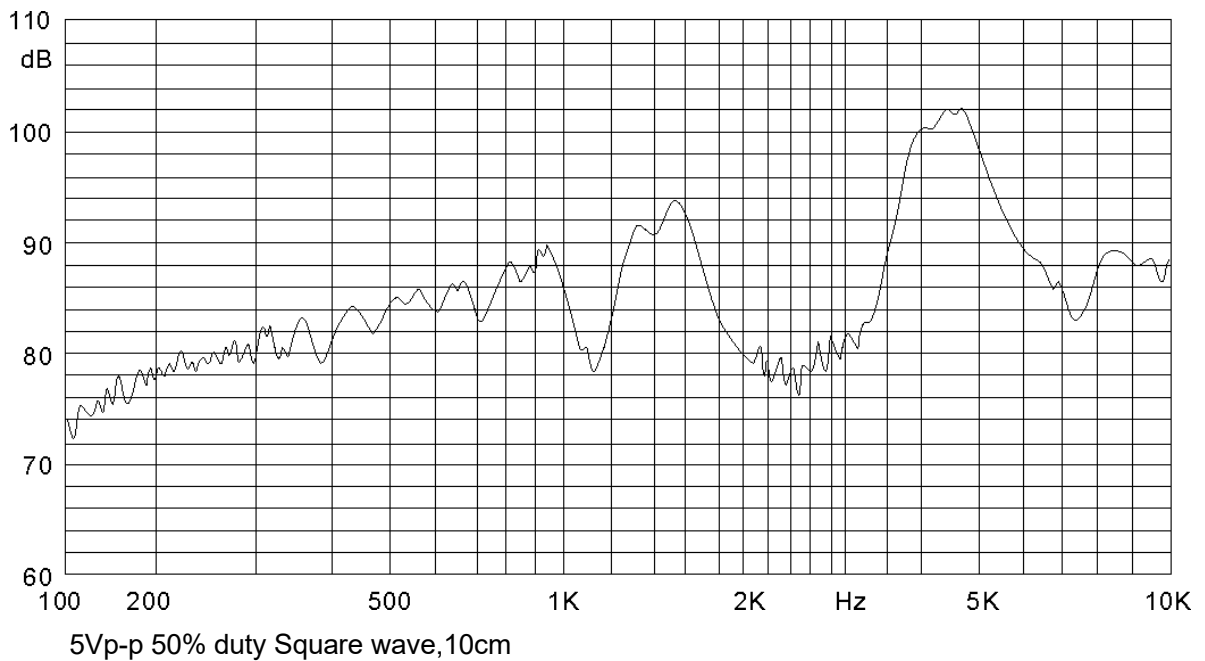


#### 4. Electrical And Acoustical Measuring Condition

##### Recommended Setting



#### 5. Frequency Response



**1. Product type:** Piezoelectric Ceramic Buzzer (Pin Type)

**2. Technical Parameter Measuring condition**

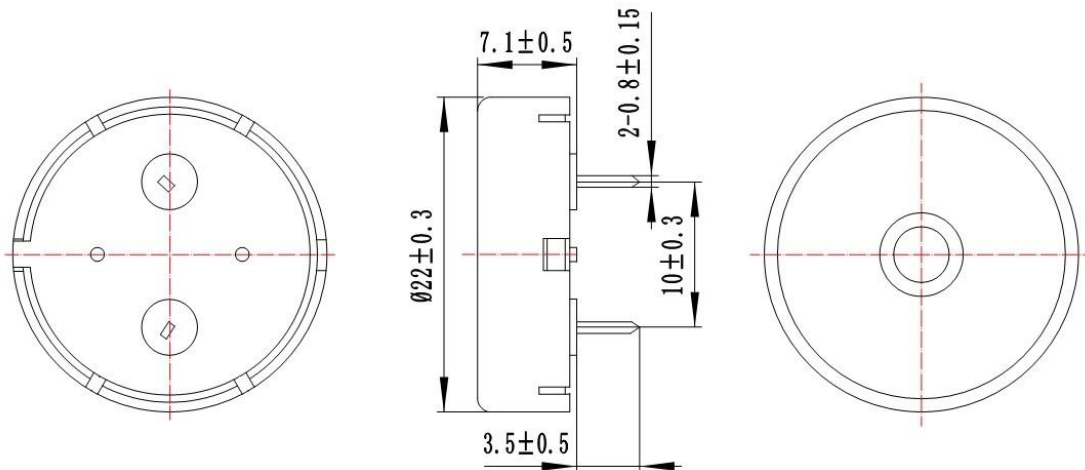
Part shall be measured under a condition (Temperature: 5 ~ 35°C, Humidity: 45% ~ 85%R.H., Atmospheric pressure: 860 ~ 1060hPa) unless the standard condition (Temperature: 25±3°C, Humidity: 60±10%R.H. Atmospheric pressure: 860 ~ 1060hPa) is regulated to measure.



1	Resonant Frequency	4000Hz
2	Operating Voltage	1 ~ 25 Vp-p
3	Rated Current	Max.3mA , At 4KHz 50% duty Square Wave 5Vp-p
4	Sound Output at 10cm	Min.85dB, At 4KHz 50% duty Square Wave 5Vp-p
5	Capacitance	25000 ± 30% pF At 1KHz
6	Operating Temperature	-20°C ~ 70°C
7	Store Temperature	-30°C ~ 80°C
8	Net Weight	Approx 2.0g
9	RoHS	Yes

**3. Dimensions**

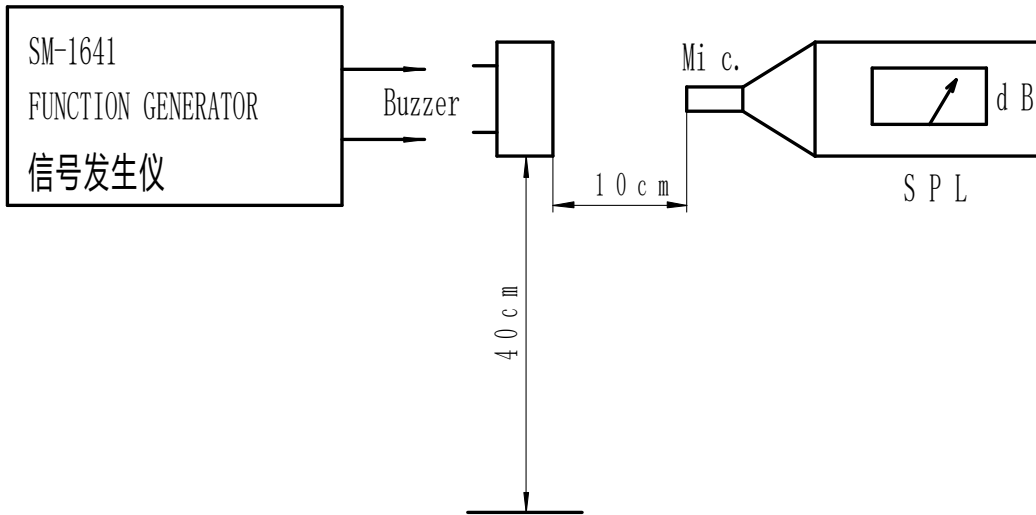
Unit: mm


 \*Unit: mm; Tolerance:  $\pm 0.5$ mm Except Specified

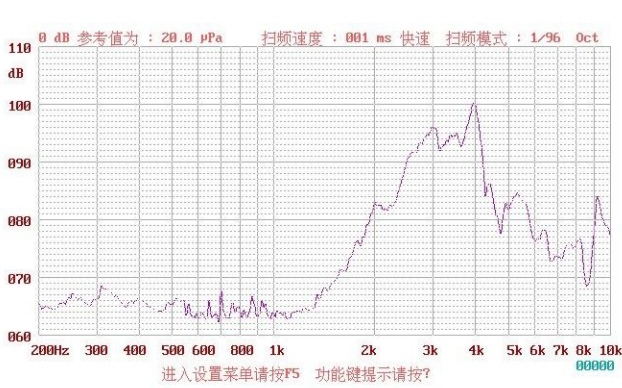
\*Housing Material: Black PBT

### 4. Electrical And Acoustical Measuring Condition

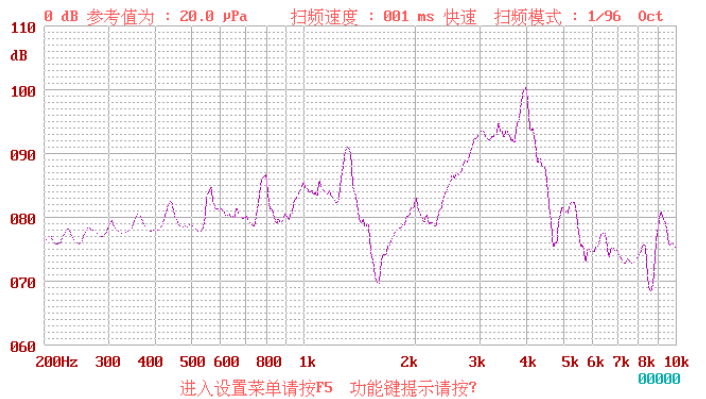
#### Recommended Setting



### 5. Frequency Response



3.6vrms sinusoidal wave @10cm



5Vp-p 50% duty Square wave 10cm