DATA SHEET

PI SERIES
PIEZO INDICATORS

Self-driven piezoelectric indicators with rich sound quality and low frequency response.

Applications

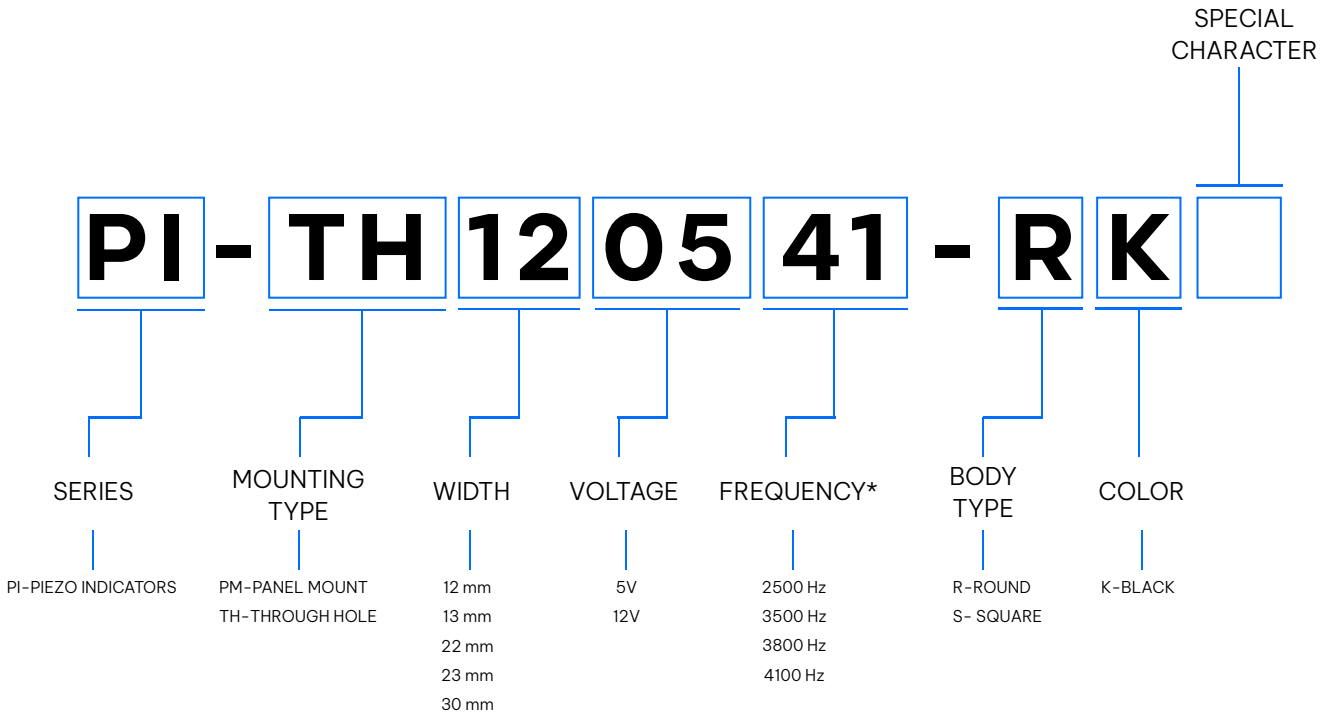
- Industrial
- Medical
- Automotive
- Automation & Controls
- Communications
- Robotics
- IoT
- Security Systems

Key Features

- Internal driving circuitry for seamless integration into existing designs
- Plug & play design
- Rich single tone & crisp sound quality
- Good low-frequency response
- Available sizes 12 to 30mm, round, square & flange type
- SMD or Through-hole mounting options
- ROHS compliant

Ordering Data

SKU Offering



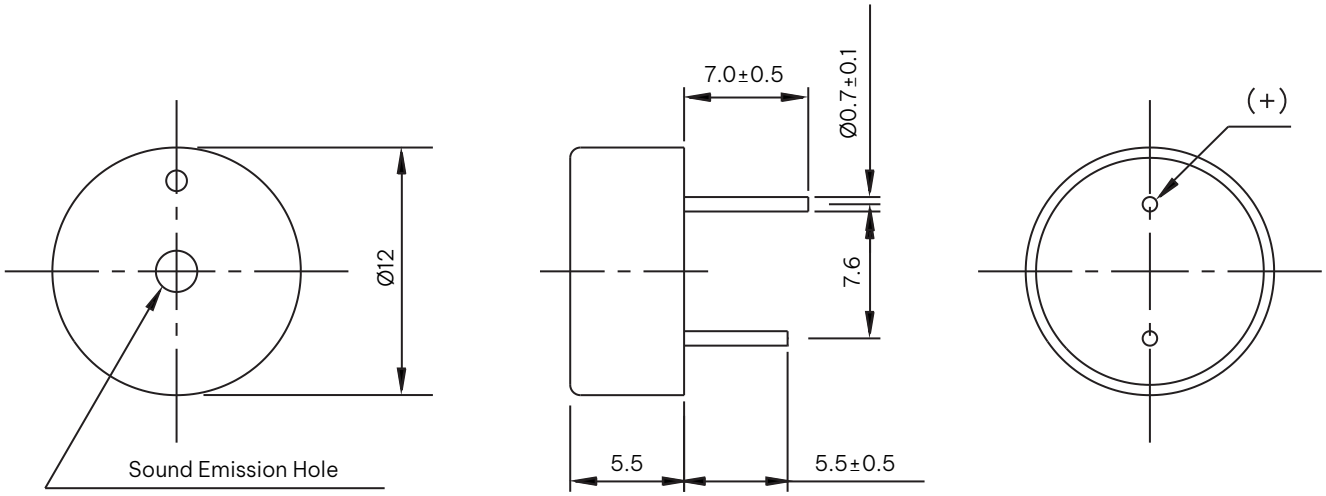
*The frequency is specified using a two-digit code. The code represents the frequency value in hundreds of Hertz (×100 Hz). Unless otherwise stated, all frequency codes follow this convention.

Ordering Data

Part Number	Mounting Type	Width	Voltage	Frecuency (Hz)	Body Type	Color	Page
PI-TH12-0541-RK	Through Hole	12mm	5V	4100 ± 200	Round	Black	**4**
PI-TH13-1241-RK	Through Hole	13.8mm	12V	4100 ± 500	Round	Black	**5**
PI-TH22-1235-RK	Through Hole	22.8mm	12V	3500 ± 300	Round	Black	**6**
PI-TH23-1238-RK	Through Hole	23mm	12V	3800 ± 500	Round	Black	**7**
PI-PM30-1225-RK	Panel Mount, Flange	30mm	12V	2500 ± 500	Round	Black	**8**

Product Dimensions

PI-TH12-0541-RK



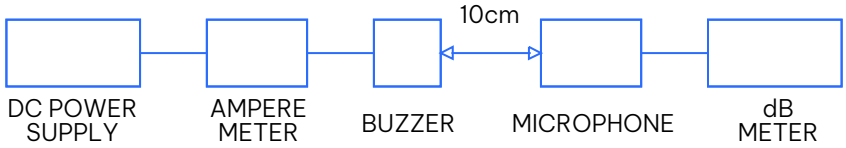
Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	4100±200
Operating Voltage (VDC)	3 ~ 5
Rated Voltage (VDC)	5.0
Current Consumption (mA/max)	5 at Rated Voltage
Sound Pressure Level (dB/min)	80 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +100
Storage Temperature (°C)	-30 ~ +110
Condition by wave (°C)	260±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 5sec

Material	
Housing	PBT plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	0.8

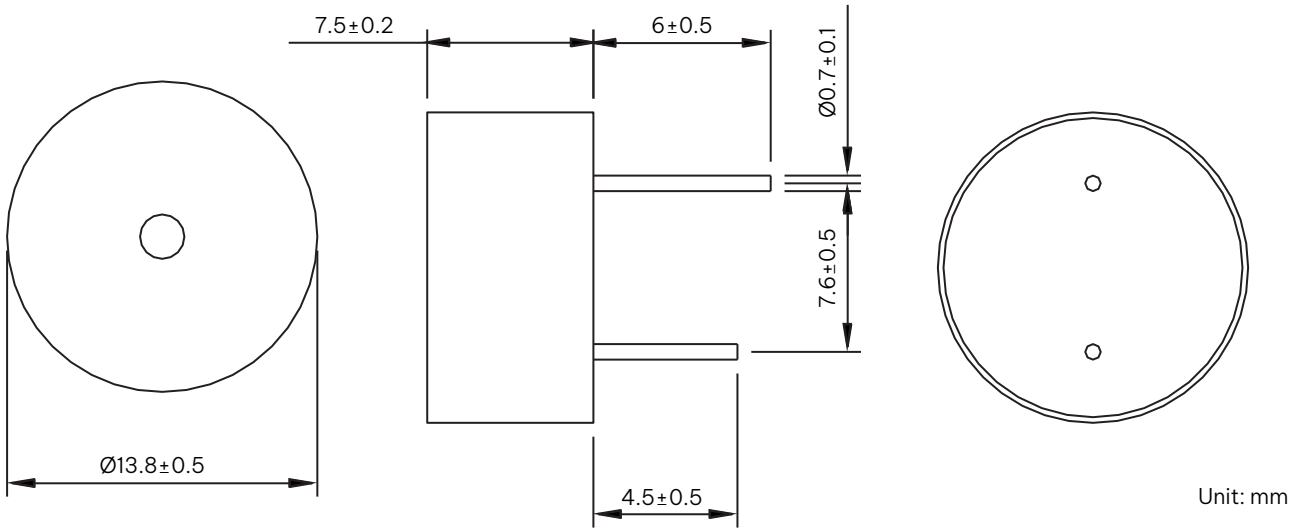
Testing Method

- **Standard Measurement conditions:** Temperature:25± 2°C Humidity:45-60%.
- **Acoustic Characteristics:** The frequency, power usage, and sound output are evaluated using the measurement equipment depicted below.



Product Dimensions

PI-TH13-1241-RK

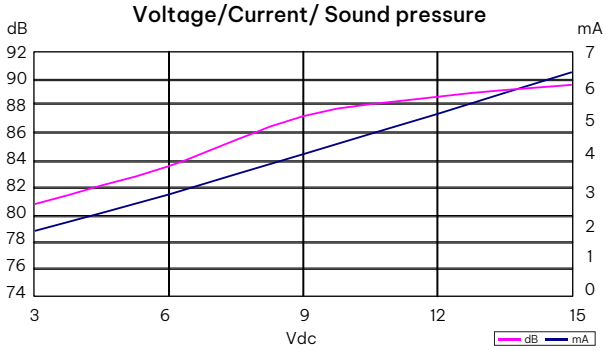


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	4100±500
Operating Voltage (VDC)	3 ~ 15
Rated Voltage (VDC)	12
Current Consumption (mA/max)	20 at Rated Voltage
Sound Pressure Level (dB/min)	83 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80
Condition by wave (°C)	260±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 5sec

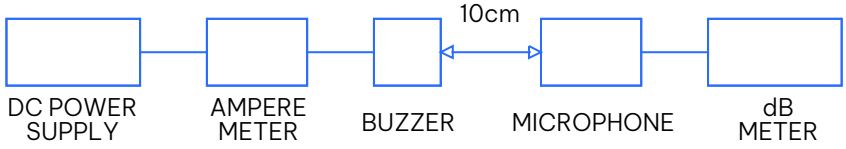
Material	
Housing	PBT (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	1.0

Voltage/Current/ Sound pressure



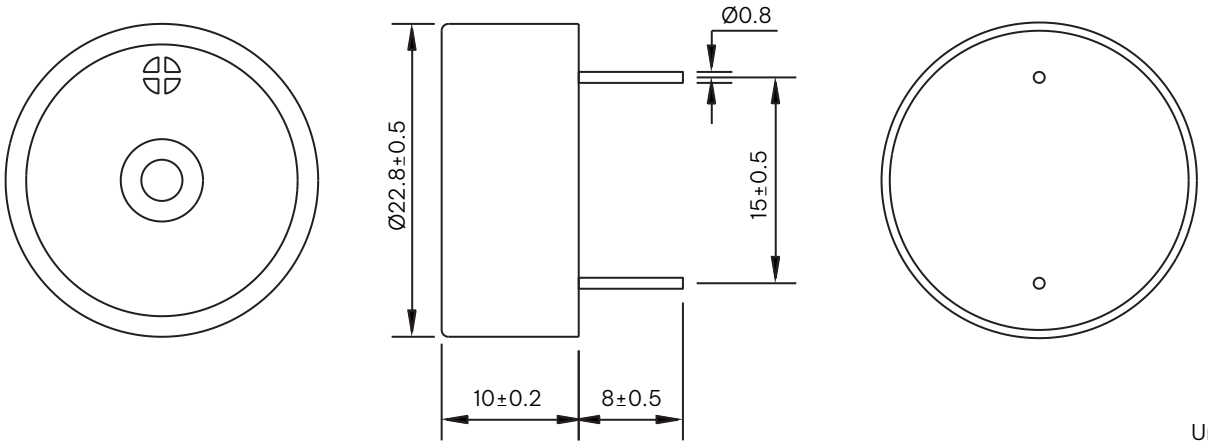
Testing Method

- **Standard Measurement conditions:** Temperature:25± 2°C Humidity:45-60%.
- **Acoustic Characteristics:** The frequency, power usage, and sound output are evaluated using the measurement equipment depicted below.



Product Dimensions

PI-TH22-1235-RK



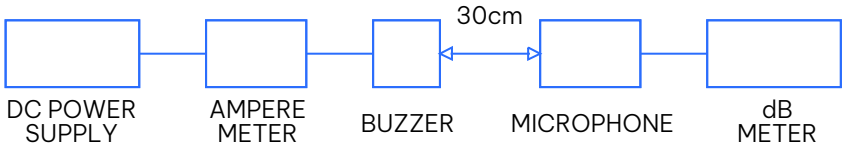
Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	3500±300
Operating Voltage (VDC)	3 ~ 16
Rated Voltage (VDC)	12
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	90 at 30cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +100
Storage Temperature (°C)	-30 ~ +110
Condition by wave (°C)	260±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 5sec

Material	
Housing	PBT (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	2.6

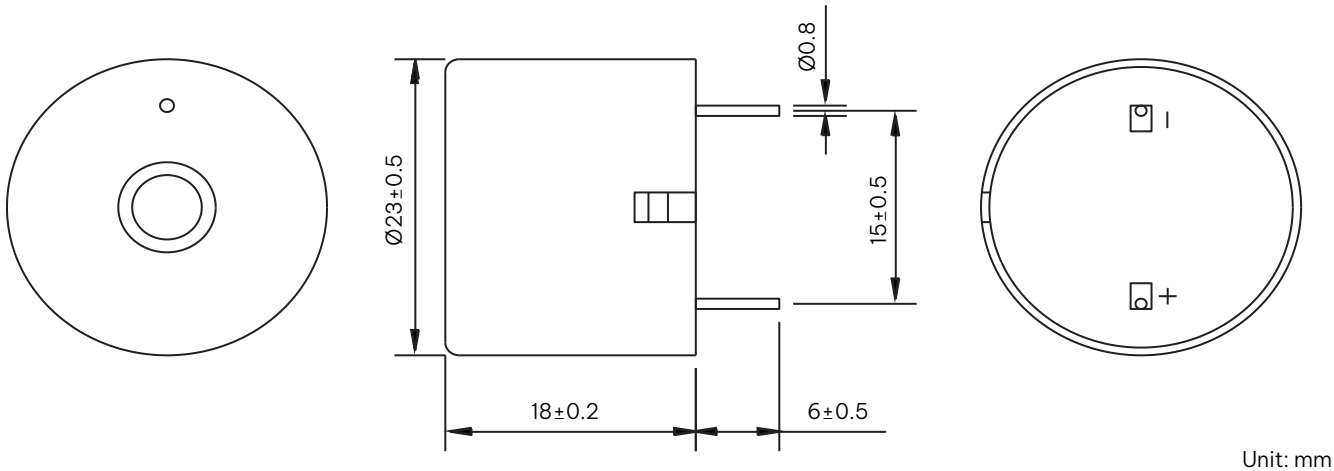
Testing Method

- **Standard Measurement conditions:** Temperature:25± 2°C Humidity:45-60%.
- **Acoustic Characteristics:** The frequency, power usage, and sound output are evaluated using the measurement equipment depicted below.



Product Dimensions

PI-TH23-1238-RK



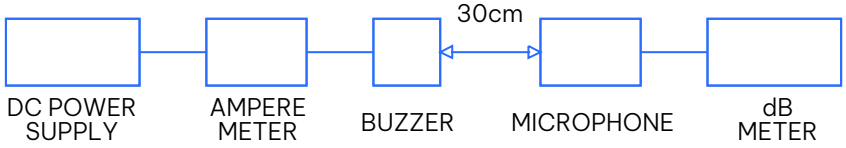
Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	3800±500
Operating Voltage (VDC)	3 ~ 24
Rated Voltage (VDC)	12
Current Consumption (mA/max)	15 at Rated Voltage
Sound Pressure Level (dB/min)	95 at 30cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80
Condition by hand (°C)	350±20°C / within 5sec

Material	
Housing	ABS Plastic Resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	4.8

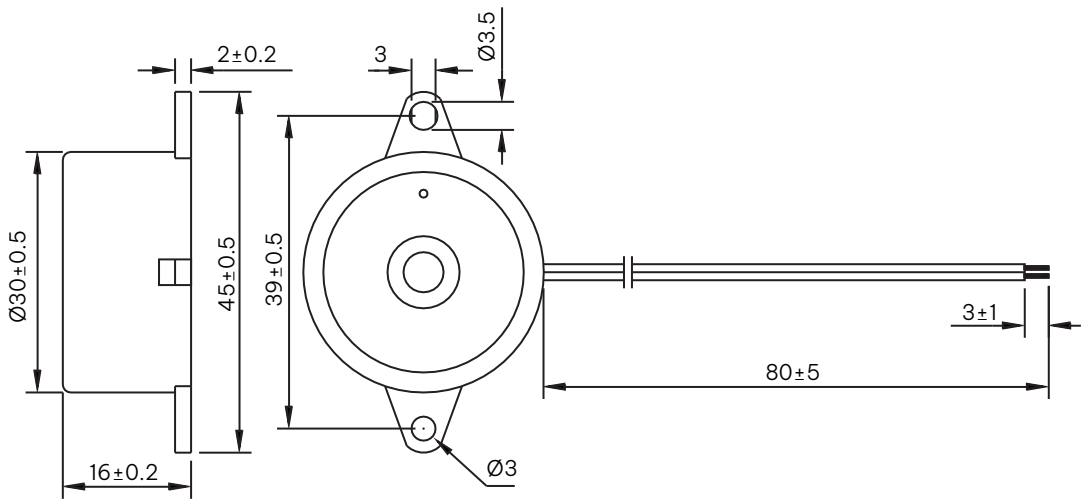
Testing Method

- **Standard Measurement conditions:** Temperature:25± 2°C Humidity:45-60%.
- **Acoustic Characteristics:** The frequency, power usage, and sound output are evaluated using the measurement equipment depicted below.



Product Dimensions

PI-PM30-1225-RK

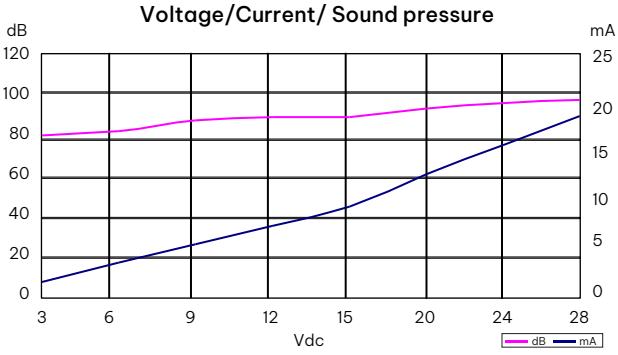


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2500±500
Operating Voltage (VDC)	3 ~ 28
Rated Voltage (VDC)	12
Current Consumption (mA/max)	8 at Rated Voltage
Sound Pressure Level (dB/min)	90 at 30cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80

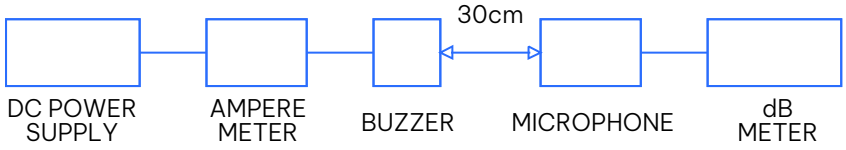
Material	
Housing	ABS Plastic Resin (Color : Black)
Leading Wire	28 AWG
Weight (Gram)	7.0

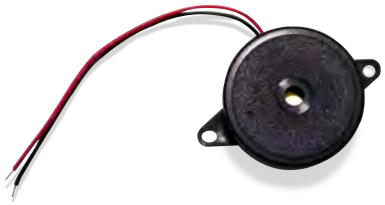
Voltage/Current/ Sound pressure



Testing Method

- **Standard Measurement conditions:** Temperature:25± 2°C Humidity:45-60%.
- **Acoustic Characteristics:** The frequency, power usage, and sound output are evaluated using the measurement equipment depicted below.





Reliability

ITEMS	METHOD OF TEST AND MEASUREMENTS	PERFORMANCE
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
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
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
Durability	Testing after 98 hours actual continuous operation. (at standard measurement conditions)	No abnormality shall exist
Drop withstanding	A natural drop from 75cm high down to the ground.	No abnormality shall exist
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

Compliances and approvals

RoHS COMPLIANT