DATA SHEET

MI SERIES
MAGNETIC INDICATORS

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

Applications

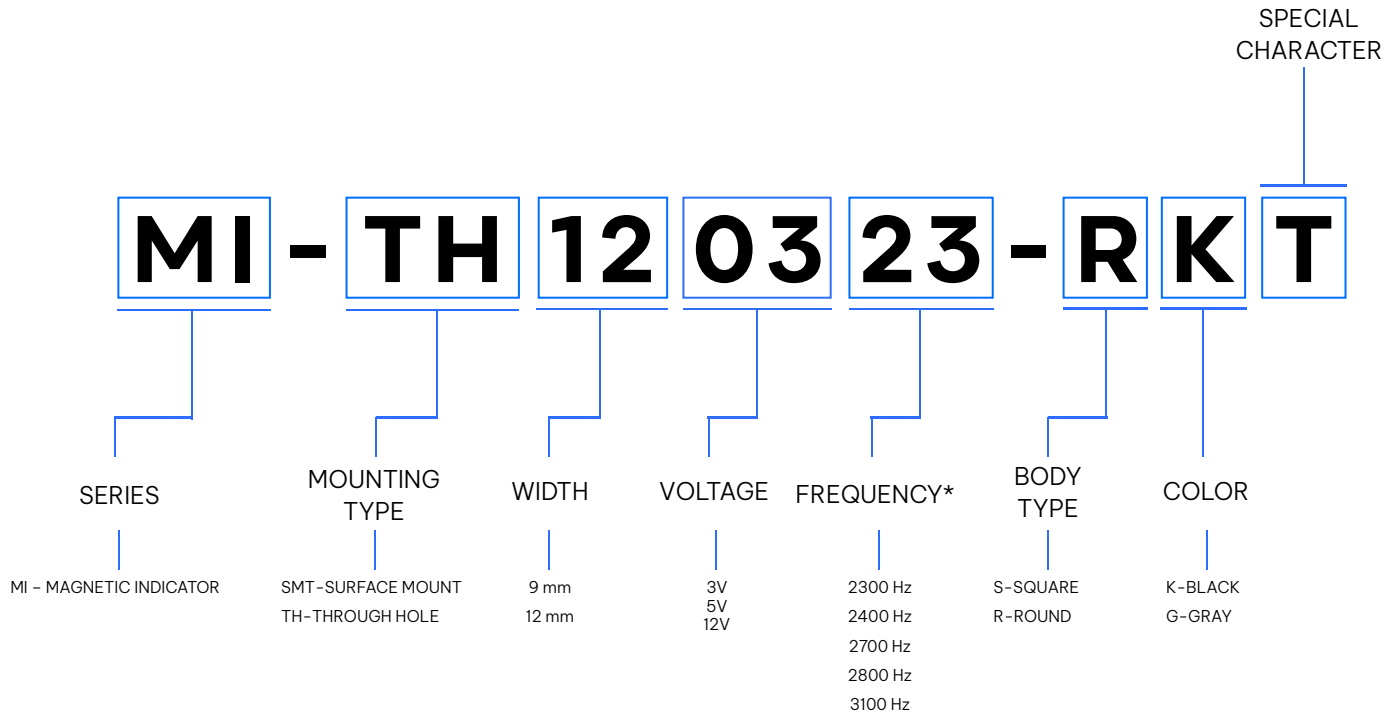
- Industrial
- Medical
- Automotive
- Automation & Controls
- Communications
- Robotics
- IoT
- Security Systems

Key Features

- Internal driving circuitry for seamless integration into existing designs
- Plug & play design
- Rich single tone & crisp sound quality
- Good low-frequency response from 2.3 to 3.1 KHz
- Available sizes 9.0 to 12.7mm, round or square shapes
- SMD or Through-hole mounting options
- Low voltage consumption: 3V, 5V & 12V options.
- ROHS compliant

Ordering Data

SKU Offering



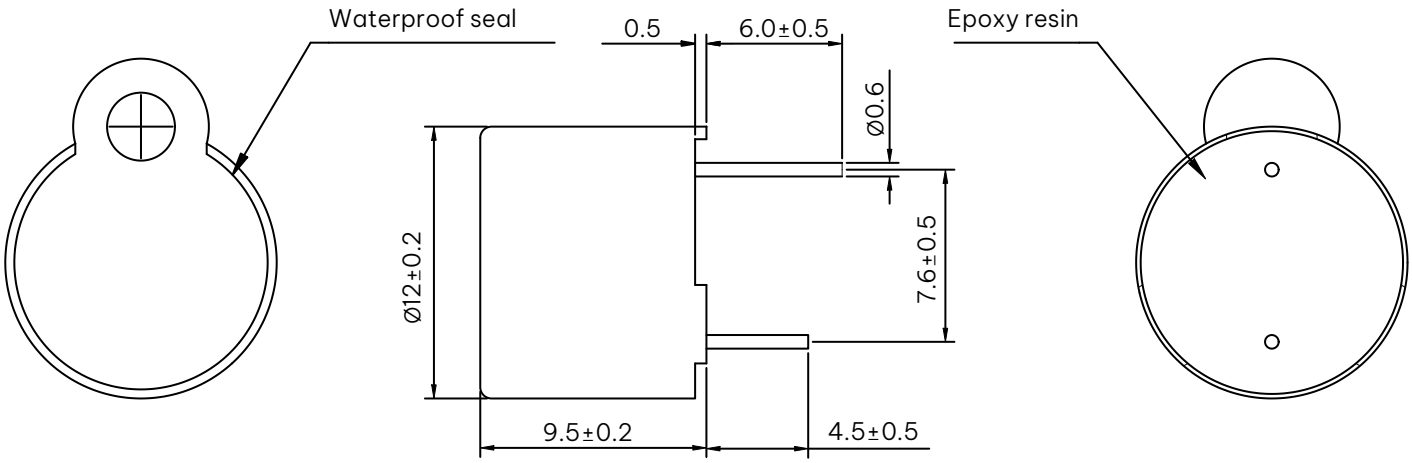
*The frequency is specified using a two-digit code. The code represents the frequency value in hundreds of Hertz (×100 Hz). Unless otherwise stated, all frequency codes follow this convention.

Ordering Data

Part Number	Mounting Type	Width	Voltage	Frecuency (Hz)	Body Type	Color	Page
MI-TH12-0323-RKT	Through Hole	12mm	3V	2300 ± 300	Round	Black	**4**
MI-TH09-0523-RK	Through Hole	9.0mm	5V	2300 ± 300	Round	Black	**5**
MI-TH12-0523-RK	Through Hole	12mm	5V	2300 ± 300	Round	Black	**6**
MI-TH12-0323-RK	Through Hole	12mm	3V	2300 ± 400	Round	Black	**7**
MI-SMT12-0524-SGT	Surface Mount	12.6mm x 12.6mm	5V	2400 ± 300	Square	Gray	**8**
MI-SMT12-1224-SG	Surface Mount	12.6mm x 12.6mm	12V	2400 ± 300	Square	Gray	**19**
MI-SMT12-0524-SG	Surface Mount	12.7mm x 12.7mm	5V	2400 ± 400	Square	Gray	**10**
MI-SMT09-0327-SK	Surface Mount	9.6mm x 9.6mm	3V	2700 ± 300	Square	Black	**11**
MI-SMT09-1227-SK	Surface Mount	9.6mm x 9.6mm	12V	2700 ± 300	Square	Black	**12**
MI-SMT09-0527-SK	Surface Mount	9.6mm x 9.6mm	5V	2700 ± 300	Square	Black	**13**
MI-TH09-0328-RK	Through Hole	9.0mm	3V	2800 ± 300	Round	Black	**14**
MI-TH12-0531-RK	Through Hole	12mm	5V	3100 ± 300	Round	Black	**15**

Product Dimensions

MI-TH12-0323-RKT

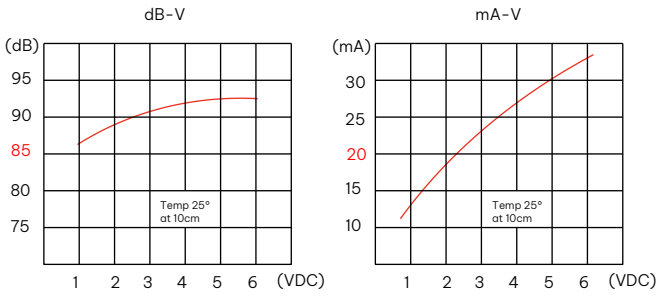


Unit: mm

Electrical Characteristics	
Resonant Frequency (Hz)	2300 ± 300
Operating Voltage (Vdc)	2.0 ~ 5.0
Rated Voltage (Vdc)	3.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	85 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

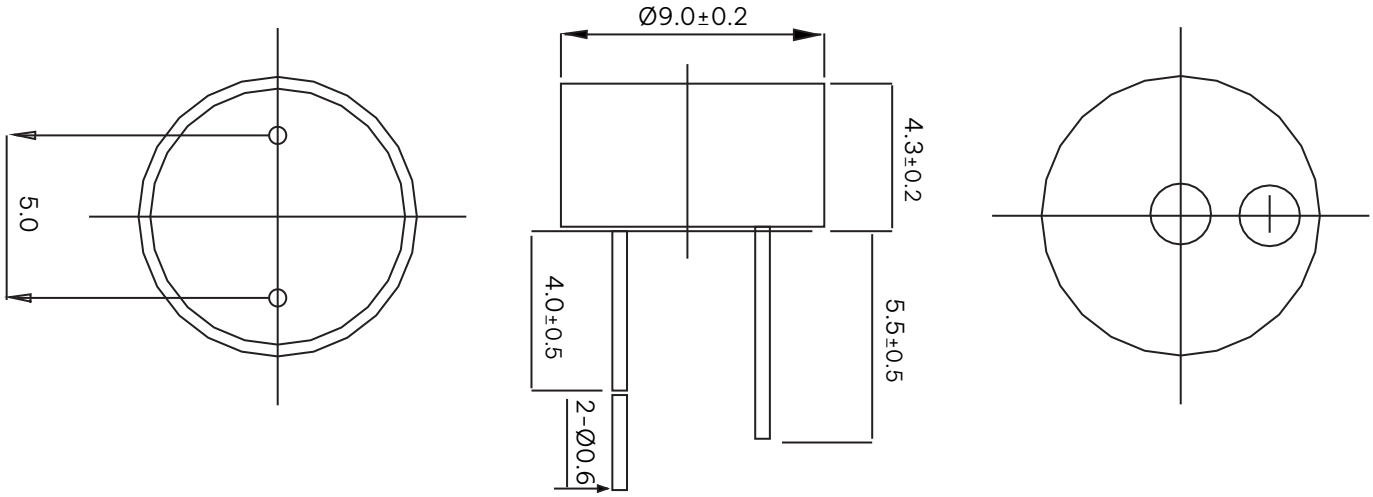
Material	
Housing	PBT plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	1.6

Voltage/Current/ Sound pressure



Product Dimensions

MI-TH09-0523-RK

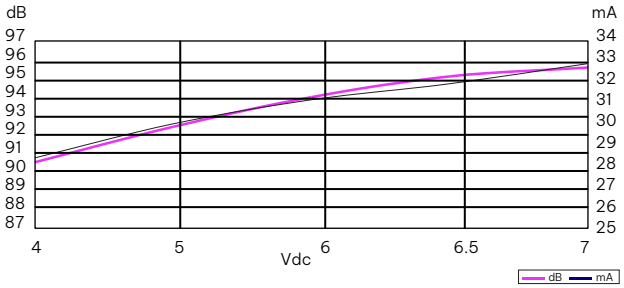


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2300 ± 300
Operating Voltage (Vdc)	4.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	85 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

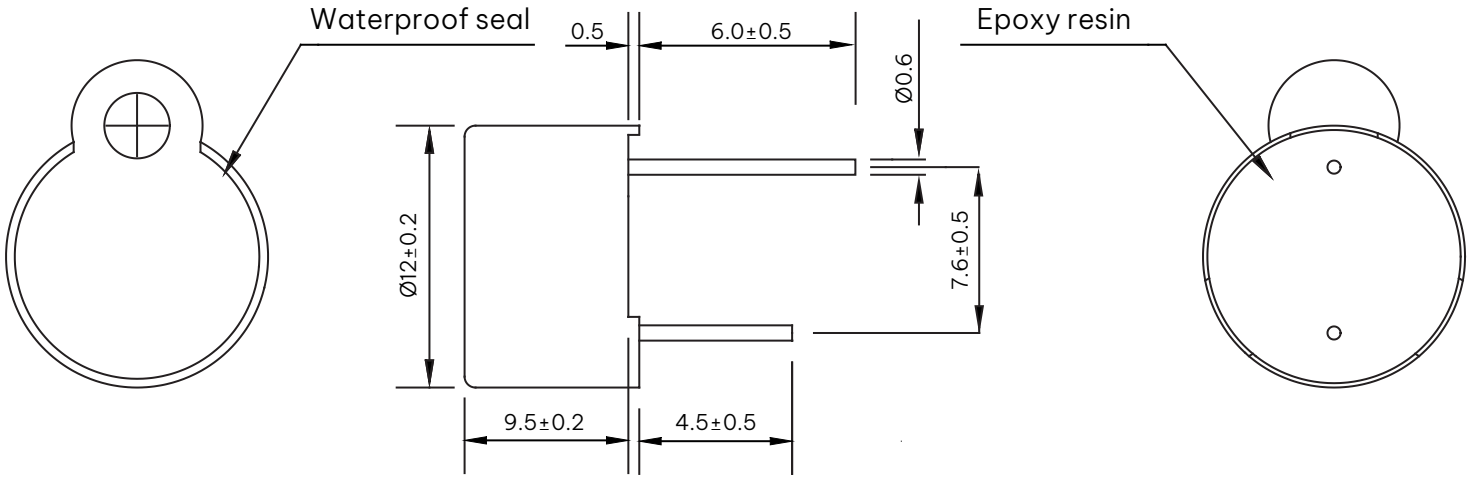
Material	
Housing	PPO plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	1.5

Voltage/Current/ Sound pressure



Product Dimensions

MI-TH12-0523-RK

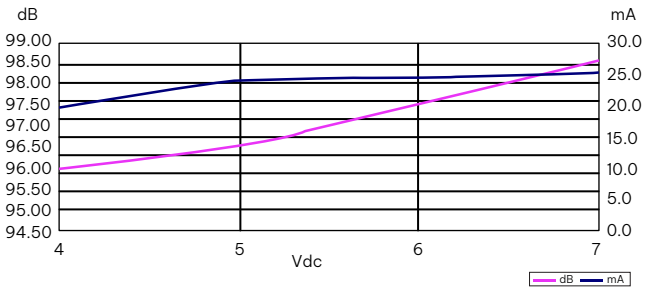


Unit: mm

Electrical Characteristics	
Resonant Frequency (Hz)	2300 ± 300
Operating Voltage (Vdc)	4.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	50 at Rated Voltage
Sound Pressure Level (dB/min)	90 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

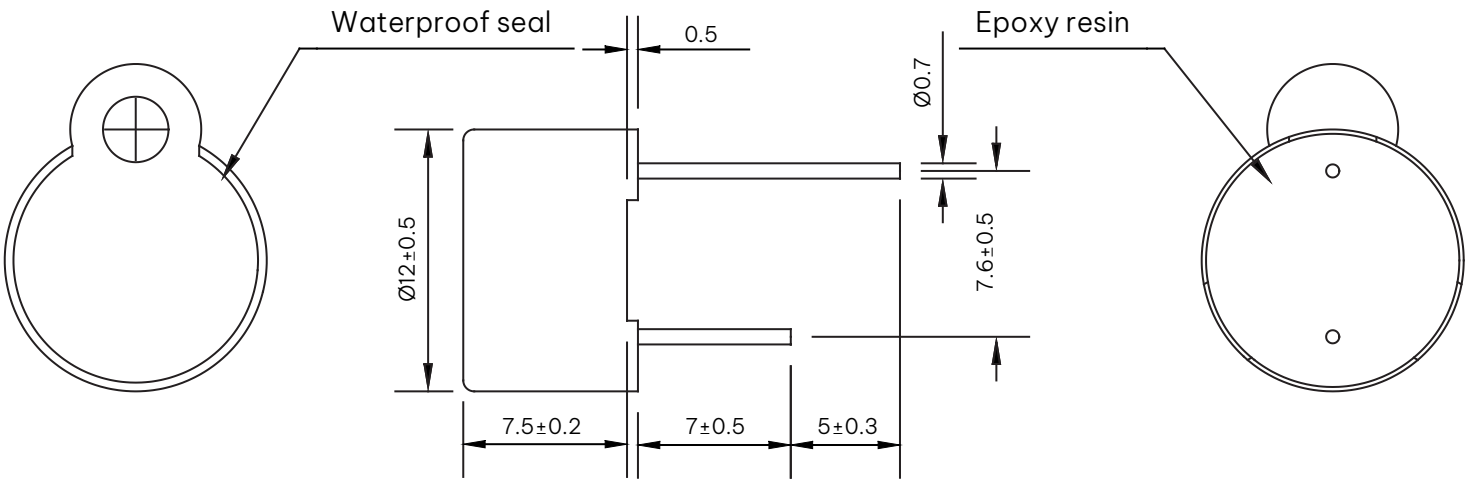
Material	
Housing	PBT plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	1.6

Voltage/Current/ Sound pressure



Product Dimensions

MI-TH12-0323-RK

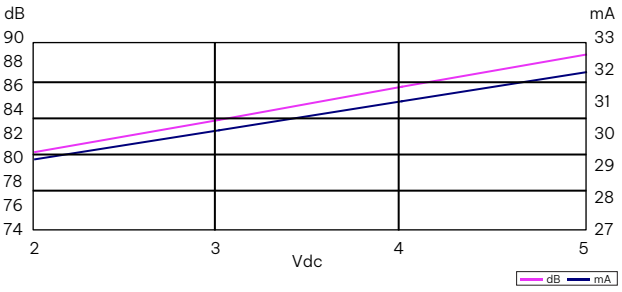


Unit: mm

Electrical Characteristics	
Resonant Frequency (Hz)	2300 ± 400
Operating Voltage (Vdc)	2.0 ~ 5
Rated V oltage (Vdc)	3.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	85 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

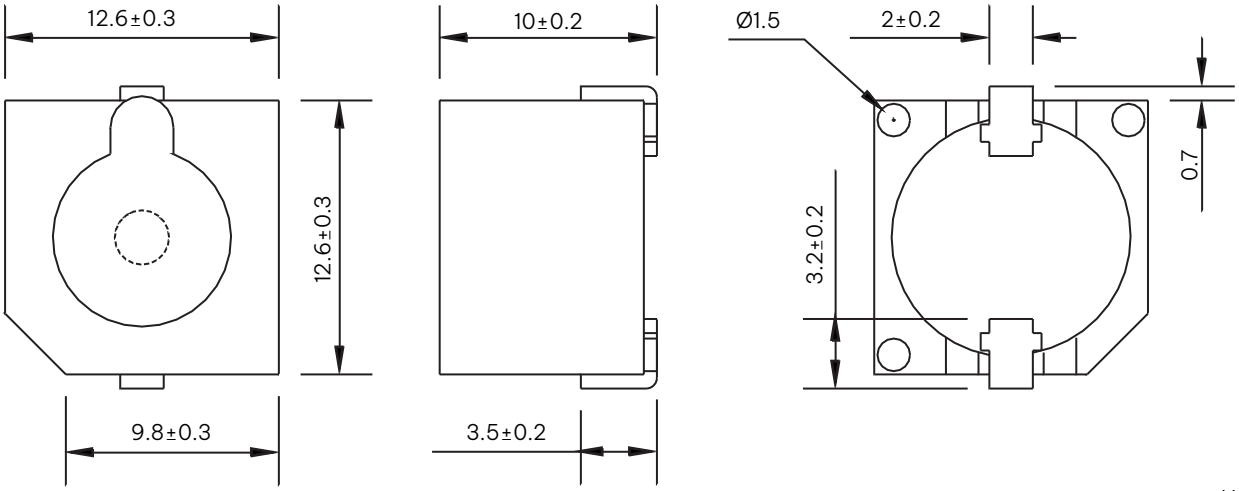
Material	
Housing	PPO plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	1.8

Voltage/Current/ Sound pressure



Product Dimensions

MI-SMT12-0524-SGT

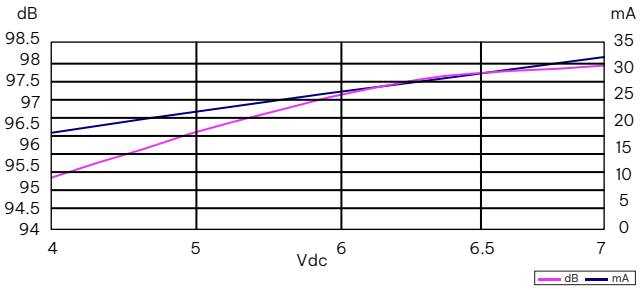


Unit: mm

Electrical Characteristics	
Resonant Frequency (Hz)	2400 ± 300
Operating Voltage (Vdc)	4.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	90 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80
Condition by wave (°C)	250±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 5sec

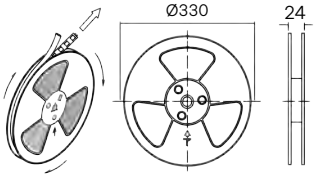
Material	
Housing	PPS plastic resin (Color : Gray)
Leading Pin	SMD
Weight (Gram)	2.8

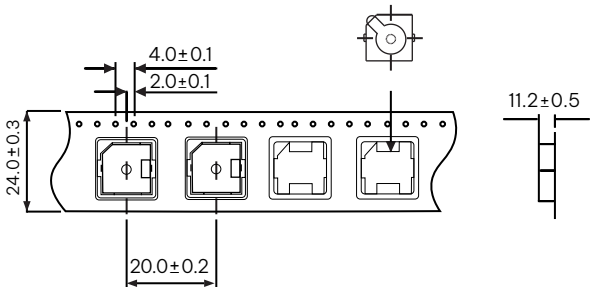
Voltage/Current/ Sound pressure



Package Method

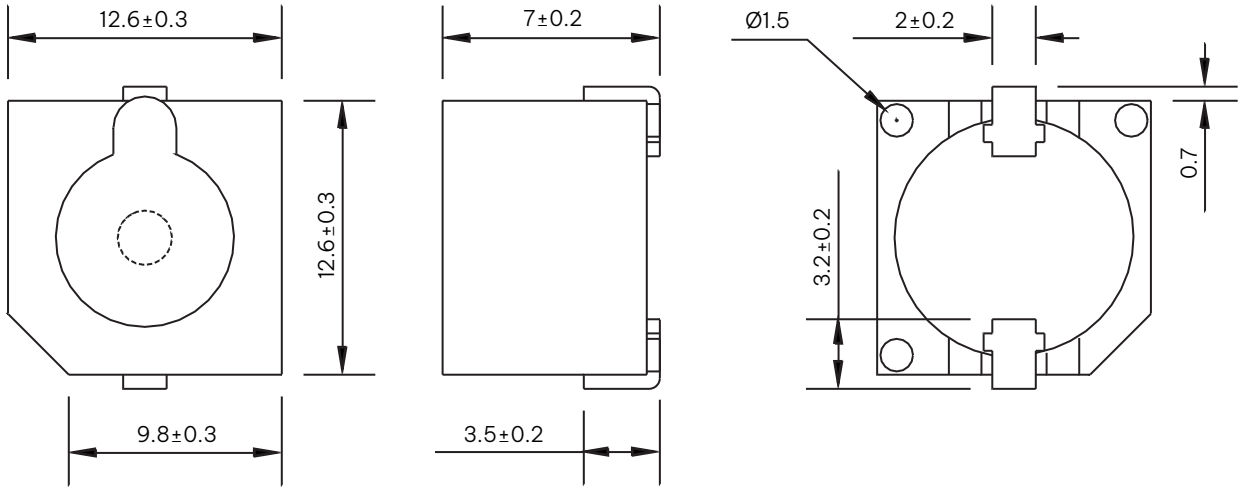
250pcs per tape reel





Product Dimensions

MI-SMT12-1224-SG

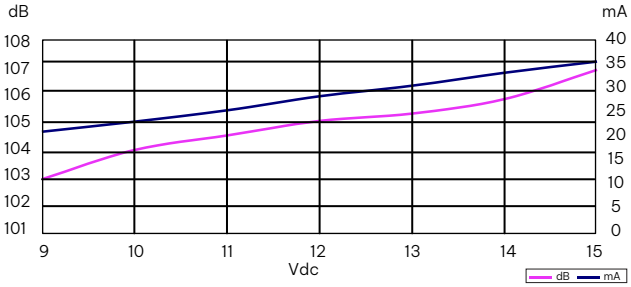


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2400 ± 300
Operating Voltage (Vdc)	9.0 ~ 15
Rated V oltage (Vdc)	12
Current Consumption (mA/max)	50 at Rated Voltage
Sound Pressure Level (dB/min)	90 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80
Condition by wave (°C)	245±5°C / 1 min
Condition by hand (°C)	350±20°C / within 5sec

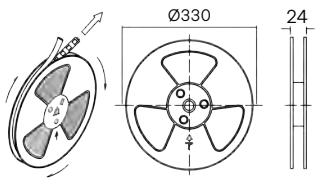
Material	
Housing	PPS plastic resin (Color : Gray)
Leading Pin	SMD
Weight (Gram)	2.8

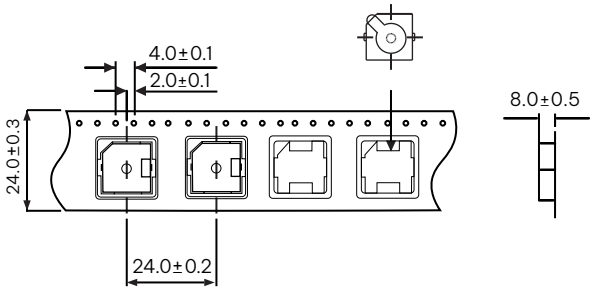
Voltage/Current/ Sound pressure



Package Method

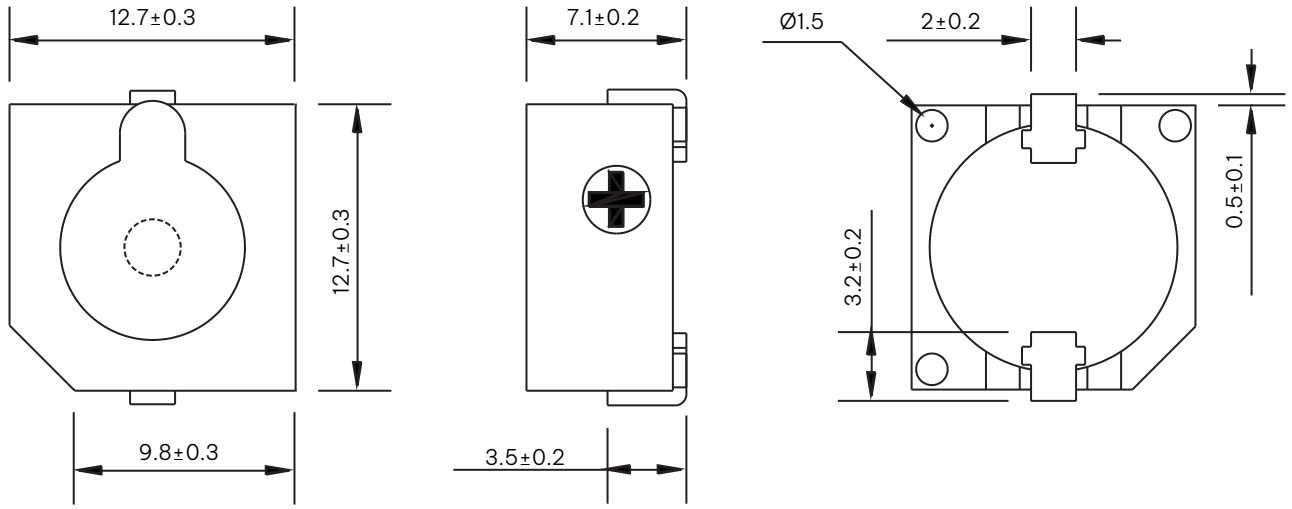
300pcs per tape reel





Product Dimensions

MI-SMT12-0524-SG

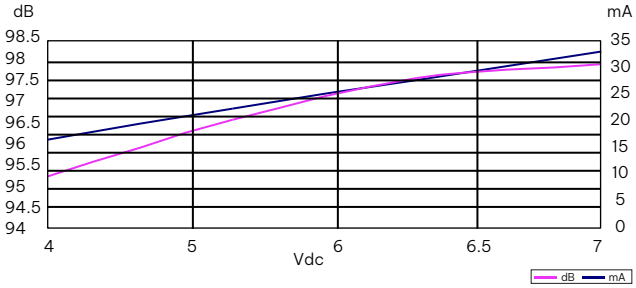


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2400 ± 400
Operating Voltage (Vdc)	4.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	88 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +80
Condition by wave (°C)	250±5°C / within 10sec
Condition by hand (°C)	350±20°C / within 5sec

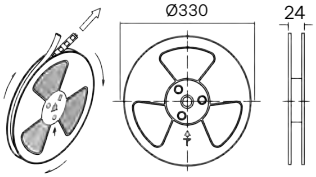
Material	
Housing	PPS plastic resin (Color : Gray)
Leading Pin	SMD
Weight (Gram)	2.0

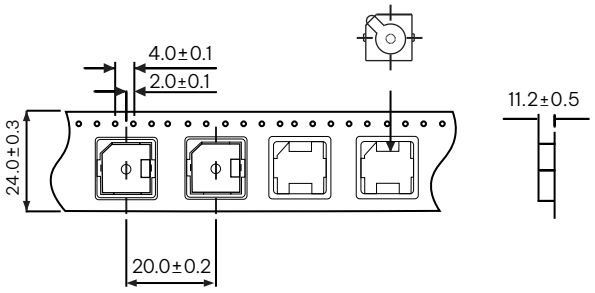
Voltage/Current/ Sound pressure



Package Method

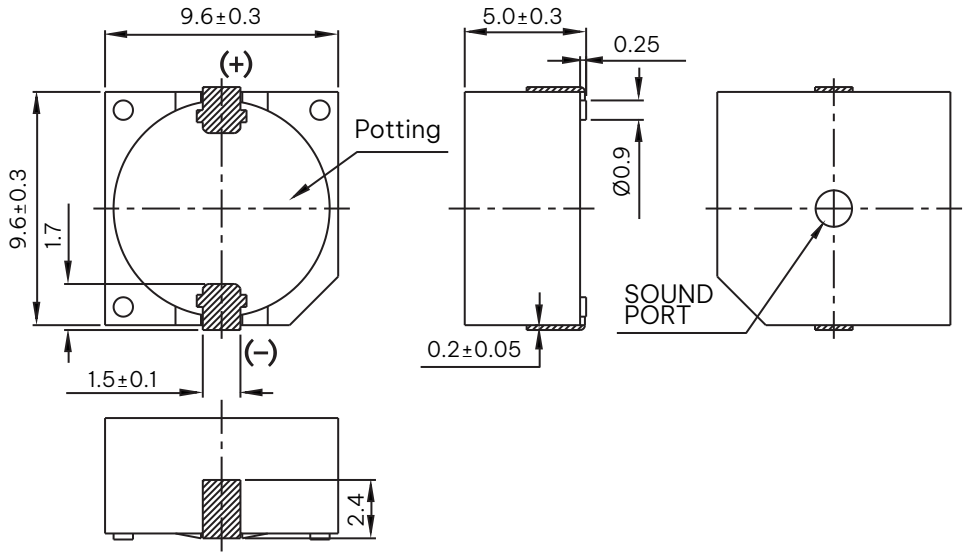
250pcs per tape reel





Product Dimensions

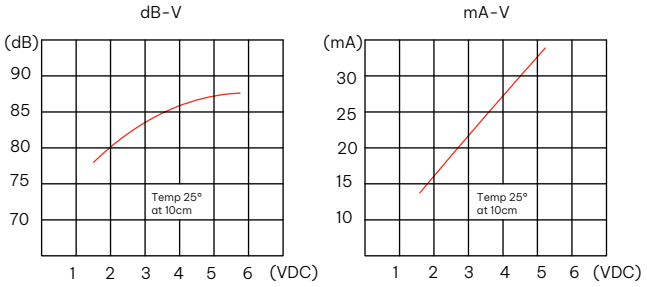
MI-SMT09-0327-SK



Unit: mm

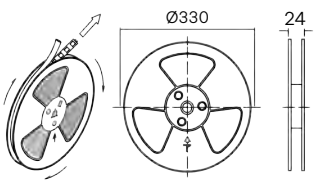
Electrical Characteristics	
Oscillation Frequency (Hz)	2700 ± 300
Operating Voltage (Vdc)	2 ~ 5
Rated V oltage (Vdc)	3
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	80 at 10cm at Rated Voltage
Tone/Pulse Rate	Single
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +85
Condition by wave (°C)	255±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 5sec

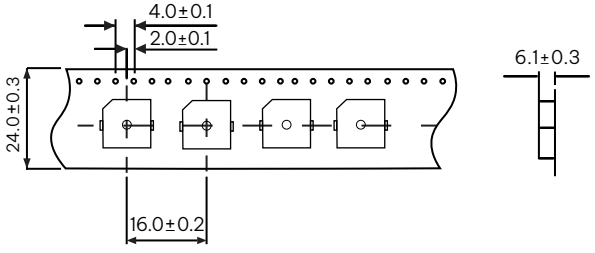
Material	
Housing	PPS plastic resin (Color : Black)
Leading Pin	SMD
Weight (Gram)	1.5



Package Method

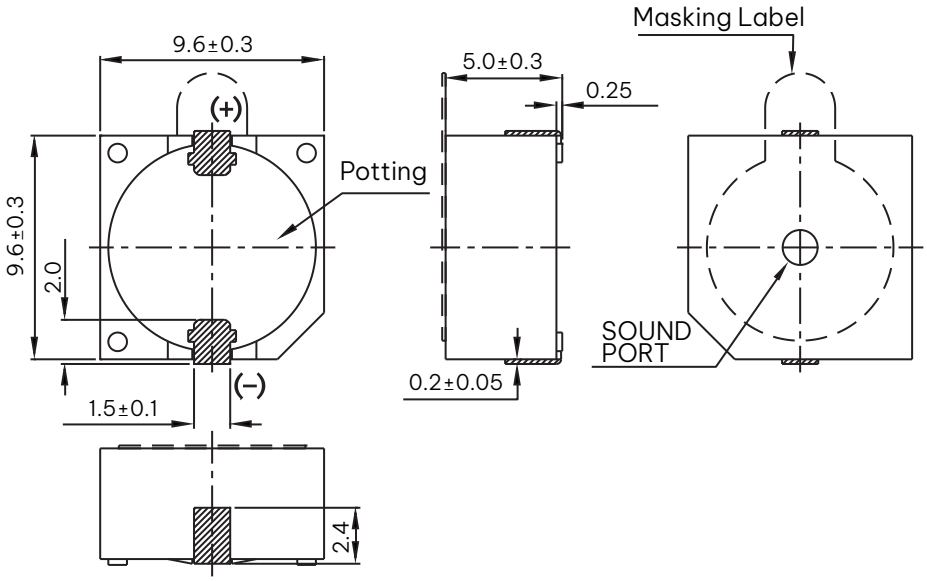
600pcs per tape reel





Product Dimensions

MI-SMT09-1227-SK

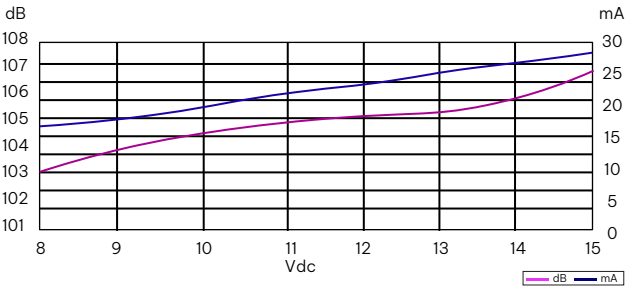


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2700± 300
Operating Voltage (Vdc)	8 ~ 15
Rated V oltage (Vdc)	12
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	85 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +85
Condition by wave (°C)	260±5°C / within 5sec
Condition by hand (°C)	350±20°C / within 3sec

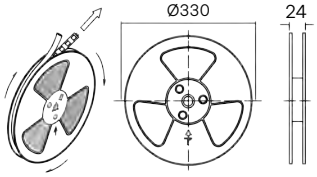
Material	
Housing	PPS plastic resin (Color : Black)
Leading Pin	Plated Brass (Au)
Weight (Gram)	1.5

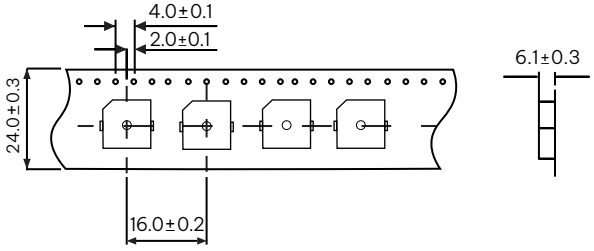
Voltage/Current/ Sound pressure



Package Method

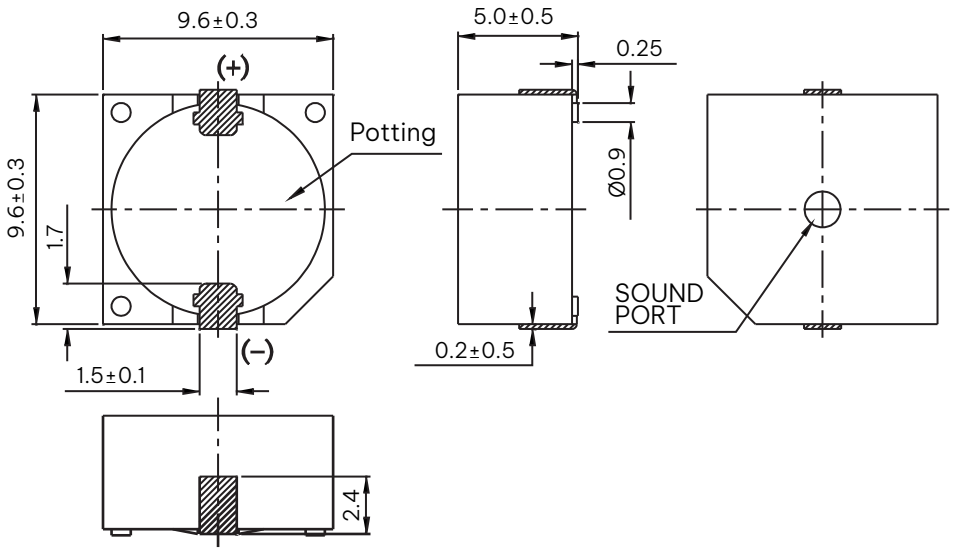
600pcs per tape reel





Product Dimensions

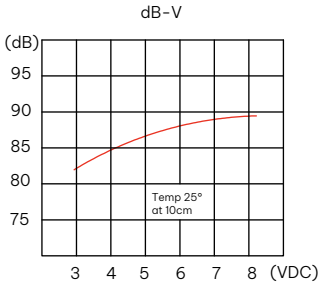
MI-SMT09-0527-SK

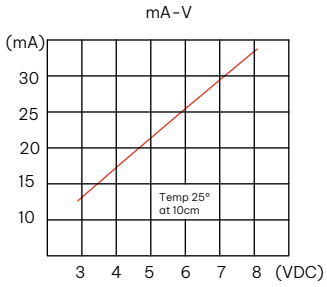


Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2700 ± 300
Operating Voltage (Vdc)	4.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	80 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-30 ~ +85

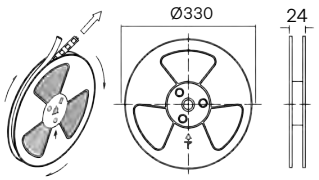
Material	
Housing	PPS plastic resin (Color : Black)
Leading Pin	SMD
Weight (Gram)	1.5

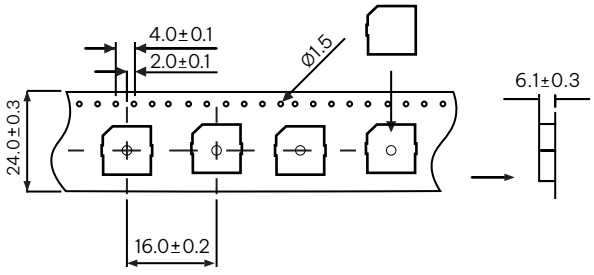


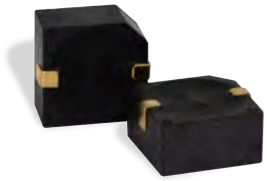


Package Method

600pcs per tape reel

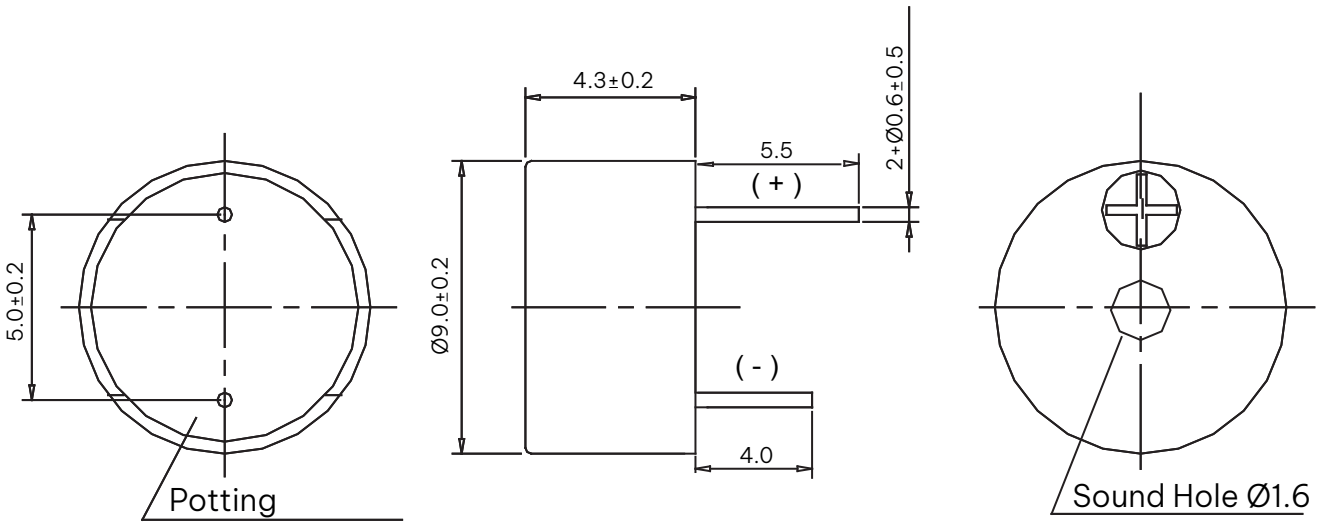






Product Dimensions

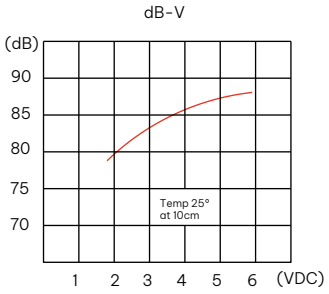
MI-TH09-0328-RK

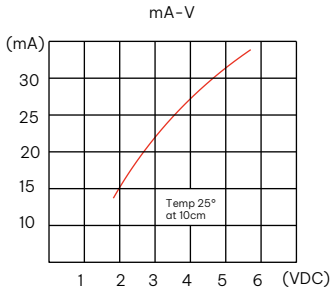


Unit: mm
Tolerance: ±0.5mm

Electrical Characteristics	
Oscillation Frequency (Hz)	2800 ± 300
Operating Voltage (Vdc)	2 ~ 5
Rated V oltage (Vdc)	3
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	80 at 10cm at Rated Voltage
Tone/Pulse Rate	Constant
Operating Temperature (°C)	-20 ~ +70
Storage Temperature (°C)	-40 ~ +80

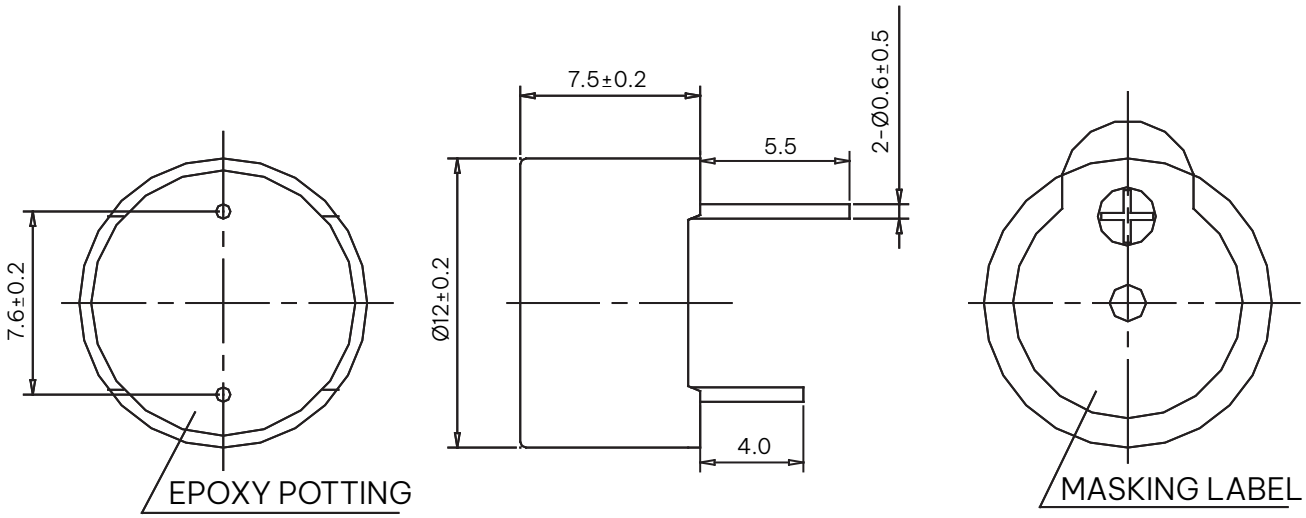
Material	
Housing	PBT plastic resin (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	2.0





Product Dimensions

MI-TH12-0531-RK



WAVE SOLDER AND WASH ALLOWED

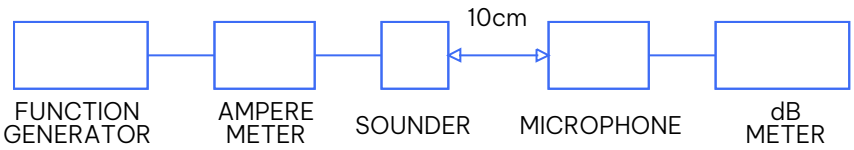
Unit: mm

Electrical Characteristics	
Oscillation Frequency (Hz)	3100 ± 300
Operating Voltage (Vdc)	3.0 ~ 7.0
Rated V oltage (Vdc)	5.0
Current Consumption (mA/max)	30 at Rated Voltage
Sound Pressure Level (dB/min)	85 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

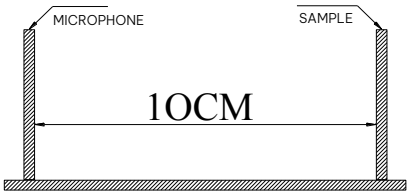
Material	
Housing	NORYL (Color : Black)
Leading Pin	Tin Plated Brass
Weight (Gram)	2.0

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.



In the measuring test, buzzers is placed as follows:



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