

MAGNETIC TRANSDUCER

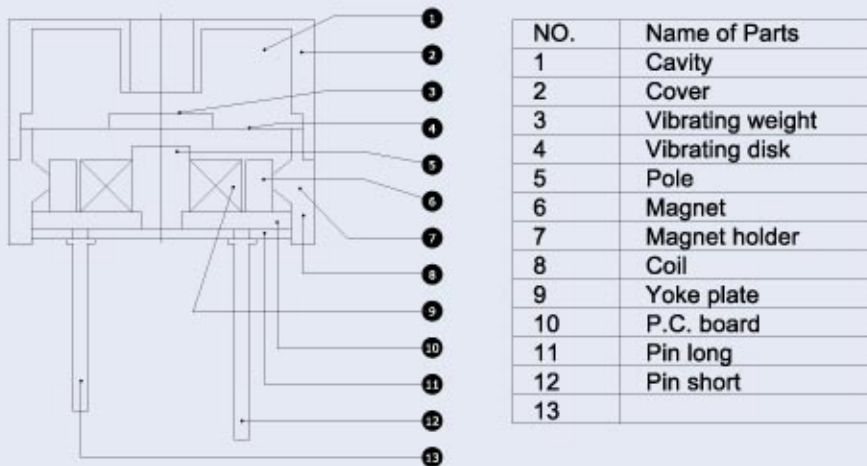
MODEL NO.	Dimensions (mm)	Rated Voltage (V)	Operating Voltage (V)	Resistance (Ω)	Rated Frequency (Hz)	SPL At 10cm (dBA)	Current Consumption (mA)	Operating Temp. (°C)	Terminal Type	Page NO.
OBO-25AL1	8.0×7.6×2.5	3.0	2~4	16±3	2,300	Min. 81	Max. 100	-20~+60	SMD	39
OBO-25AP1	8.0×7.6×2.5	3.0	2~4	16±3	2,700	Min. 83	Max. 100	-20~+60	SMD	39
OBO-30AL1	8.5×8.5×3.0	3.0	2~4	16±3	2,300	Min. 83	Max. 100	-30~+70	SMD	40
OBO-30AP1	8.5×8.5×3.0	3.0	2~4	16±3	2,700	Min. 85	Max. 100	-30~+70	SMD	40
OBO-40AL1	8.5×8.5×4.0	3.0	2~4	16±3	2,300	Min. 87	Max. 80	-30~+70	SMD	41
OBO-40AP1	8.5×8.5×4.0	3.0	2~4	16±3	2,700	Min. 87	Max. 80	-30~+70	SMD	41
OBO-40BS1	9.0×4.0	1.5	1~2	5.5±1	2,730	Min. 85	Max. 80	-30~+70	SMD	42
OBO-40BS2	9.0×4.0	3.0	2~4	15±3	2,730	Min. 85	Max. 70	-30~+70	SMD	42
OBO-40BS3	9.0×4.0	5.0	4~6	30±5	2,730	Min. 85	Max. 80	-30~+70	SMD	42
OBO-45AL1	8.5×8.5×4.5	3.0	2~4	16±3	2,300	Min. 87	Max. 80	-30~+70	SMD	43
OBO-45AP1	8.5×8.5×4.5	3.0	2~4	16±3	2,700	Min. 87	Max. 80	-30~+70	SMD	43
OBO-0903S-A2	8.5×8.5×3.0	3.0	2~5	16±4	2,700	Min. 87	Max. 80	-30~+70	SMD	44
OBO-0905S-A2	8.5×8.5×3.0	5.0	4~7	30±4	2,700	Min. 87	Max. 80	-30~+70	SMD	44
OBO-0901A-A2	9.0×4.0	1.5	1~2	5.5±1	2,730	Min. 85	Max. 80	-20~+60	PIN	45
OBO-0903A-A2	9.0×4.0	3.0	2~4	15±3	2,730	Min. 85	Max. 80	-20~+60	PIN	45
OBO-0905A-A2	9.0×4.0	5.0	4~6	30±5	2,730	Min. 85	Max. 80	-20~+60	PIN	45
OBO-1001R-A2	9.6×5.0	1.5	1~2	5.5±2	2,730	Min. 85	Max. 80	-20~+60	PIN	46
OBO-1003R-A2	9.6×5.0	3.0	2~4	15±3	2,730	Min. 85	Max. 80	-20~+60	PIN	46
OBO-1005R-A2	9.6×5.0	5.0	4~6	30±5	2,730	Min. 85	Max. 100	-20~+60	PIN	46
OBO-1201G-A1	12.0×8.5	1.5	1~2	16±2	2,048	Min. 85	Max. 55	-25~+70	PIN	47
OBO-1201G-B1	12.0×8.5	1.5	1~3	42±6	2,048	Min. 85	Max. 15	-20~+70	PIN	47
OBO-1206G-C1	12.0×8.5	6.0	4~8	73±6	2,048	Min. 82	Max. 30	-20~+70	PIN	47
OBO-1201M-A3	12.0×5.5	1.5	1~3	16±2	2,048	Min. 75	Max. 30	-20~+70	PIN	48
OBO-1201M-B3	12.0×5.5	1.5	1~3	42±6	2,048	Min. 70	Max. 15	-20~+70	PIN	48
OBO-1203M-A3	12.0×5.5	3.0	1~5	16±2	2,048	Min. 85	Max. 70	-20~+60	PIN	49
OBO-1205M-B3	12.0×5.5	5.0	3~8	42±5	2,048	Min. 85	Max. 50	-30~+80	PIN	49
OBO-1205A-D2	12.0×9.0	5.0	3~7	42±5	2,048	Min. 82	Max. 50	-20~+70	PIN	50
OBO-1212A-D2	12.0×9.0	12.0	7~16	140±14	2,400	Min. 85	Max. 40	-20~+70	PIN	50
OBO-1201A-A2	12.0×9.0	1.5	1~2	6.5±1	2,400	Min. 75	Max. 70	-20~+70	PIN	51
OBO-1206A-A2	12.0×9.0	6.0	4~8	45±6	2,400	Min. 85	Max. 50	-20~+70	PIN	51
OBO-1212A-A2	12.0×9.0	12.0	6~15	140±14	2,400	Min. 85	Max. 40	-20~+70	PIN	51
OBO-1601A-A2	16.0×14.0	1.5	1~2	27±3	2,048	Min. 80	Max. 15	-20~+70	PIN	52
OBO-1606A-A2	16.0×14.0	6.0	4~8	50±5	2,048	Min. 85	Max. 40	-20~+70	PIN	52
OBO-1612A-A2	16.0×14.0	12.0	8~16	115±12	2,048	Min. 85	Max. 40	-20~+70	PIN	52
OBO-1201C-A2	12.0×9.5	1.5	1.2~3	-	2,300±400	Min. 75	Max. 20	-20~+70	PIN	53
OBO-1206C-A2	12.0×9.5	6.0	3~8	-	2,300±300	Min. 85	Max. 30	-20~+70	PIN	53
OBO-1212C-A2	12.0×9.5	12.0	8~16	-	2,300±300	Min. 85	Max. 30	-30~+80	PIN	53
OBO-1201D-A2	12.0×7.5	1.5	1.3~3	-	2,300±500	Min. 75	Max. 25	-20~+70	PIN	54
OBO-1203D-A2	12.0×7.5	3.0	2~5	-	2,300±400	Min. 83	Max. 30	-20~+70	PIN	54
OBO-1205D-A2	12.0×7.5	5.0	3~7	-	2,300±400	Min. 83	Max. 30	-25~+70	PIN	54
OBO-1212D-A2	12.0×7.5	12.0	8~16	-	2,300±400	Min. 83	Max. 30	-25~+70	PIN	54

CONSTRUCTION OF MAGNETIC TRANSDUCER

With reference to the below drawing which shows the construction of 9Ø, 12Ø, 16Ø type magnetic transducers, the operation principle of miniature sound transducers can be explained as follows :

As shown in the drawing, the metal vibrating disk located in between two covers oscillated and makes sound by the magnetic field which attracts the vibrating disk being affected by the imposed magnetic flux.

This movement is generated by the current through the coil which is located in the magnetic circuits consisting of permanent magnetic and iron core.



CONSTRUCTION VIEW OF 9Ø, 12Ø, 16Ø TYPE

BASIC POINT FOR ADEQUATE USES

1. Frequency Characteristics

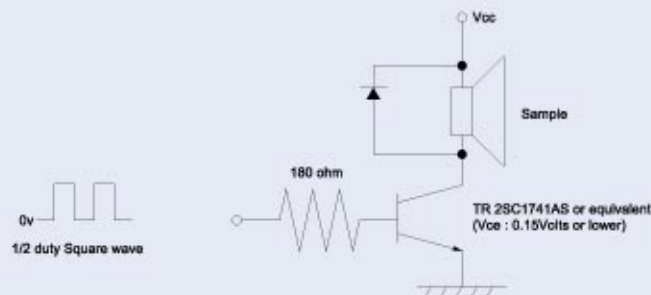
Magnetic Transducers are driven by an input frequency. The given frequency characteristics can be obtained only when applying square wave (Vo-p).

The end-users must know the facts that the characteristics of frequency may be quite change in different shapes with the applied various waves, like sine wave, square wave (Vo-p) or the other waves.

2. Rated Voltage

When other voltage are applied than our recommended one, the characteristics of frequency will be also changed. To have best performance, the recommended voltage by OBO has better being used always.

STANDARD DRIVING CIRCUIT FOR TRANSDUCER



MAGNETIC TRANSDUCER

電磁式蜂鳴器

PART NUMBERING SYSTEM

OBO- 12 01 N - B 1 W

For Wire type only (No numbering for pin type)

Numbering for various spec. of marketing or leads length

Numbering for various spec. of frequency, impedance & material

Serial number for various types

A,B,K : for the external drive with sealed type

C,D,F : for the internal drive with sealed type

G,H,J : for the external drive without sealed type

R,N : for the side emission hole design

M : for the bigger emission hold

Y : for the aside emission hold on the top of buzzer

S,T : for the type of SMD buzzer

For the rated voltage

ex. 1.5V numbering by 01 ; 3.0V numbering by 03

Diameter for the buzzer

成品編號原則

OBO- 12 01 N - B 1 W

W : 表 Wire type. (pin type則不編碼)

外觀流水號

特性流水碼，區別不同頻率，阻抗，材質

系列碼

A,B,K : 表外部驅動線路式，封膠防水

C,D,F : 表內部驅動線路式，封膠防水

G,H,J : 表外部驅動線路式，無封膠防水

R,N : 表側孔發音

M : 表大孔發音

Y : 表正面偏孔發音

S,T : 表SMD TYPE

設定電壓碼

例 1.5V 以 0.1表示；3.0V 以 03表示

成品直徑

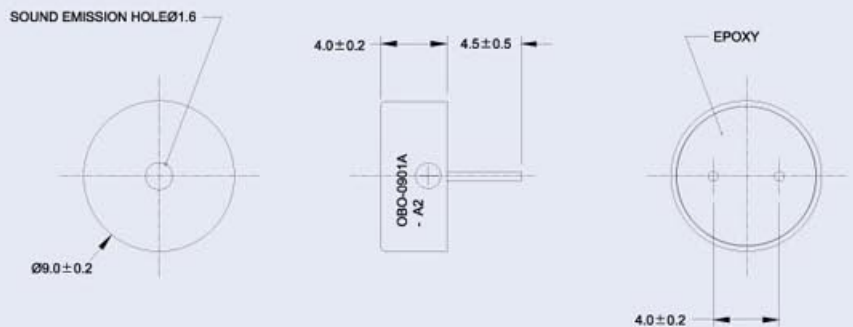
MAGNETIC TRANSDUCER

電磁式蜂鳴器

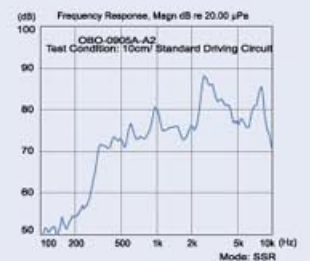
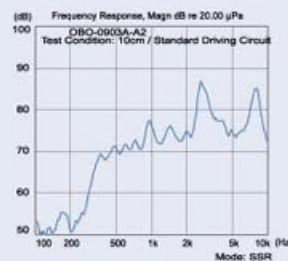
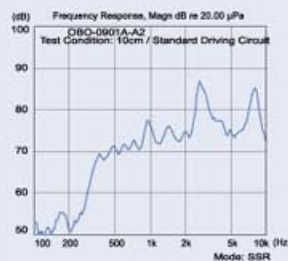


RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

Dimensions (Unit: mm ± 0.5)



Frequency Response



FEATURES

- Small size, capable for wave soldering
- Top opening for sound emission

適用範圍

- 小尺寸、可做波峰焊
- 正孔發音

☆ Value applying rated voltage (2730Hz, 1/2 duty square wave)

OBO-0901A-A2

1.5VDC
1~2V
max. 80mA
min. 85dB
5.5 ± 1Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
0.7gm

OBO-0903A-A2

3.0VDC
2~4V
max. 80mA
min. 85dB
15 ± 3Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
0.7gm

OBO-0905A-A2

5.0VDC
4~6V
max. 80mA
min. 85dB
30 ± 5Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
0.7gm

MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

特點

- Small size, capable for wave soldering
- Side opening for sound emission

- 小尺寸、可做波峰焊
- 側孔發音

☆ Value applying rated voltage (2730Hz, 1/2 duty square wave)

OBO-1001R-A2

1.5VDC
1~2V
max. 80mA
min. 85dB

OBO-1003R-A2

3.0VDC
2~4V
max. 70mA
min. 85dB

OBO-1005R-A2

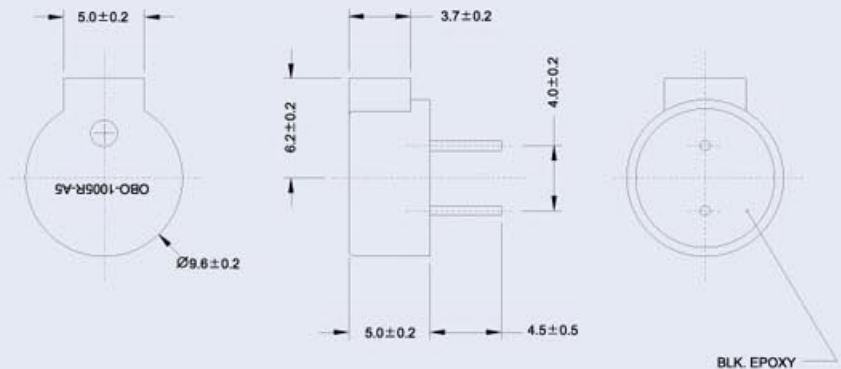
5.0VDC
4~6V
max. 100mA
min. 85dB

5.5±2Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
1.0gm

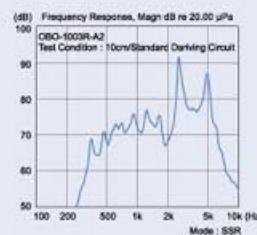
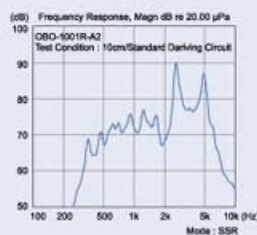
25±3Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
1.0gm

30±5Ω
2,730Hz
-20°C to +60°C
-40°C to +85°C
1.0gm

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage : Rated Voltage
1/2 duty Square wave
Distance for Measurement : 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

適用範圍

• Small size, high sound output

小尺寸、高音壓

☆ Value applying rated voltage (2048Hz, 1/2 duty square wave)

OBO-1201G-A1

1.5VDC
1~2V
max. 55mA
min. 85dB

OBO-1201G-B1

1.5VDC
1~3V
max. 15mA
min. 85dB

OBO-1206G-C1

6.0VDC
4~8V
max. 30mA
min. 82dB

16 ± 2Ω

2,048Hz

-25°C to +70°C

-30°C to +80°C

1.3gms

42 ± 6Ω

2,048Hz

-20°C to +70°C

-30°C to +80°C

2.0gms

73 ± 6Ω

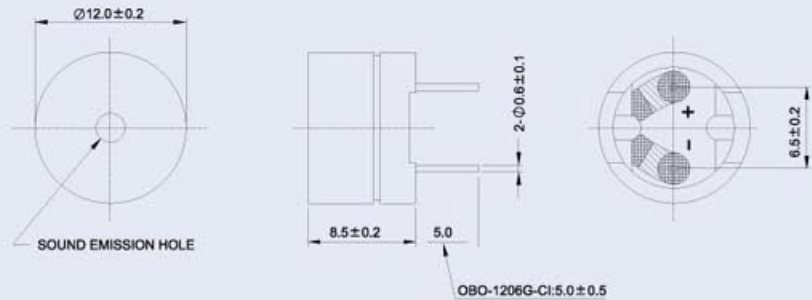
2,048Hz ± 150Hz

-20°C to +70°C

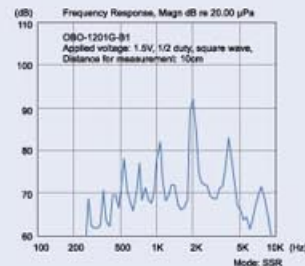
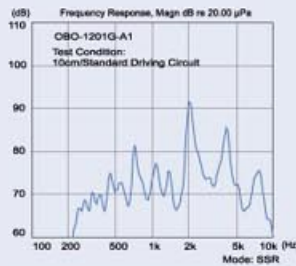
-30°C to +80°C

1.5gms

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage : 1.5V
1/2 duty Square wave
Distance for Measurement : 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

特點

• Small Size, not allowed for wave soldering

小尺寸、不可作波峰焊

☆ Value applying rated voltage (2048Hz, 1/2 duty square wave)

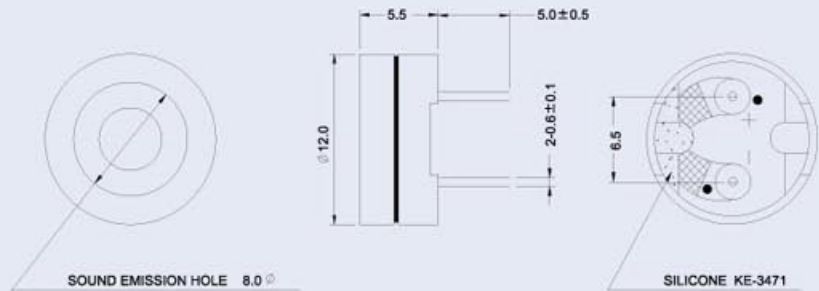
OBO-1201M-A3

1.5VDC
1~3V
max. 30mA
min. 75dB
16±2Ω
2,048Hz
-20°C to +70°C
-30°C to +85°C
1.3gms

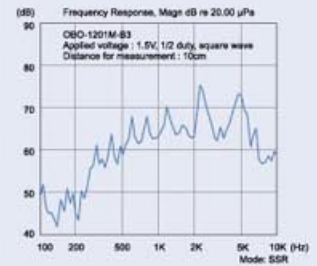
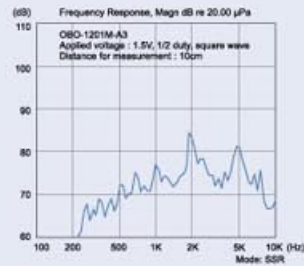
OBO-1201M-B3

1.5VDC
1~3V
max. 15mA
min. 70dB
42±6Ω
2,048Hz
-25°C to +70°C
-30°C to +80°C
1.3gms

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage : 1.5V
1/2 duty Square wave
Distance for Measurement : 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

Small size, not allowed for wave soldering

特色

小尺寸，不可作波峰焊

☆ Value applying rated voltage (2048Hz, 1/2 duty square wave)

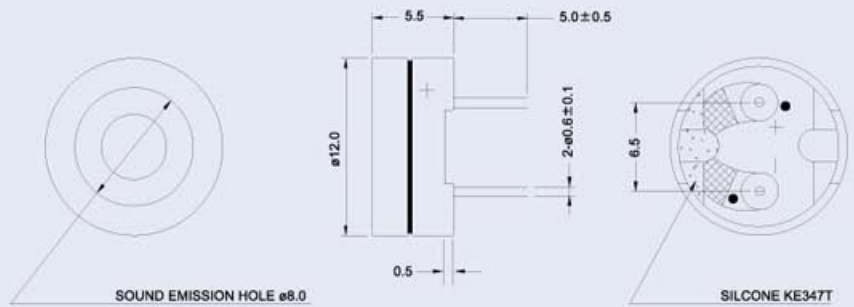
OBO-1203M-A3

3.0VDC
1~5V
max. 70mA
min. 85dB
16 ± 2Ω
2,048 Hz
-20°C to +60°C
-30°C to +70°C
1.3gms

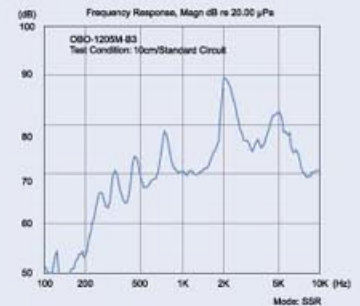
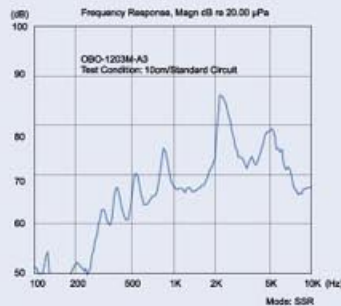
OBO-1205M-B3

5.0VDC
3~8V
max. 50mA
min. 85dB
42 ± 6Ω
2,048 Hz
-30°C to +80°C
-30°C to +85°C
2gms

Dimensions (Unit: mm ±0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage: 3.0V / 5.0V
1/2 duty Square Wave
Distance for Measurement: 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

特點

• Sealed design for wave soldering and washing

封膠、可作波封焊及水洗

☆ Value applying rated voltage (resonant frequency, 1/2 duty square wave)

OBO-1205A-D2

5VDC
3~7V
max. 50mA
min. 82dB

OBO-1212A-D2

12VDC
7~16V
max. 40mA
min. 85dB

42 ± 5Ω

140 ± 14Ω

2,048Hz

2,400Hz

-20°C to +70°C

-20°C to +70°C

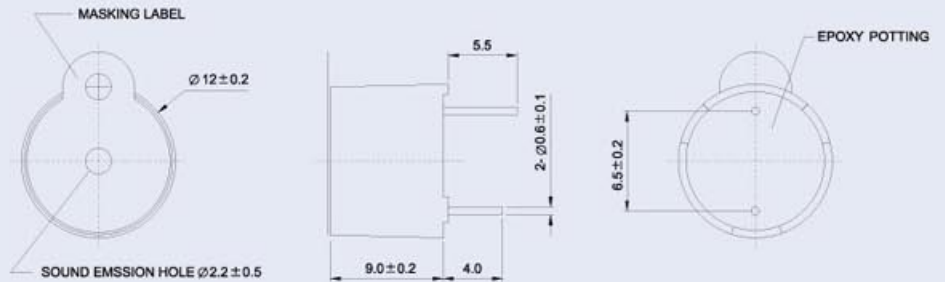
-30°C to +75°C

-30°C to +80°C

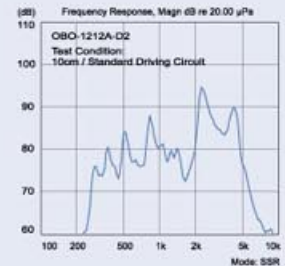
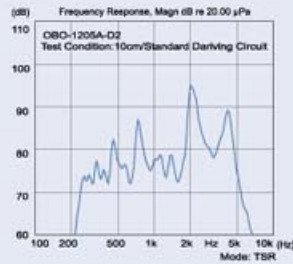
2gms

1.5gms

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage : Rated Voltage
1/2 duty Square wave
Distance for Measurement : 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

特點

• Sealed design for wave soldering and washing

封膠防水、可作波峰焊

☆ Value applying rated voltage (2400Hz, 1/2 duty square wave)

OBO-1201A-A2

1.5VDC
1~2V
max. 70mA
min. 75dB

6.5 ± 1Ω
2,400Hz
-25°C to +70°C
-30°C to +80°C
2gms

OBO-1206A-A2

6VDC
4~8V
max. 50mA
min. 85dB

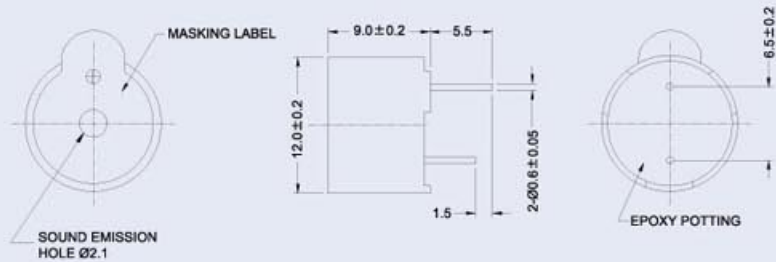
45 ± 6Ω
2,400Hz
-20°C to +70°C
-30°C to +80°C
2gms

OBO-1212A-A2

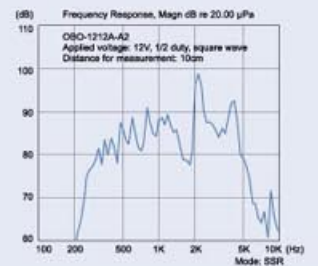
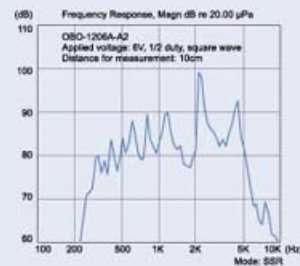
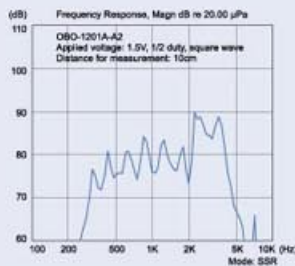
12VDC
6~15 V
max. 40mA
min. 85dB

140 ± 14Ω
2,400Hz
-20°C to +70°C
-30°C to +80°C
2gms

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage : Rated Voltage
1/2 duty Square wave
Distance for Measurement : 10cm



MAGNETIC TRANSDUCER

電磁式蜂鳴器



RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量

FEATURES

特點

• Sealed design for wave soldering and washing

封膠防水、可作波峰焊

☆ Value applying rated voltage (2048Hz, 1/2 duty square wave)

OBO-1601A-A2

1.5VDC
1~2V
max. 15mA
min. 80dB
27 ± 3Ω
2,048Hz
-20°C to +70°C
-30°C to +85°C
7gms

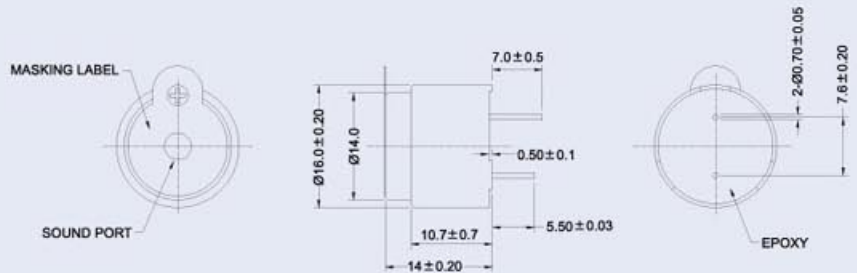
OBO-1606A-A2

6VDC
4~8V
max. 40mA
min. 85dB
50 ± 5Ω
2,048Hz
-20°C to +70°C
-30°C to +80°C
5gms

OBO-1612A-A2

12VDC
8~16V
max. 40mA
min. 85dB
115 ± 12Ω
2,048Hz
-30°C to +75°C
-40°C to +85°C
5gms

Dimensions (Unit: mm ± 0.5)



Sound Pressure Level vs.
Frequency
Applied Voltage: Rated Voltage
1/2 duty Square Wave
Distance for Measurement: 10cm

