

MAGNETIC TRANSDUCER

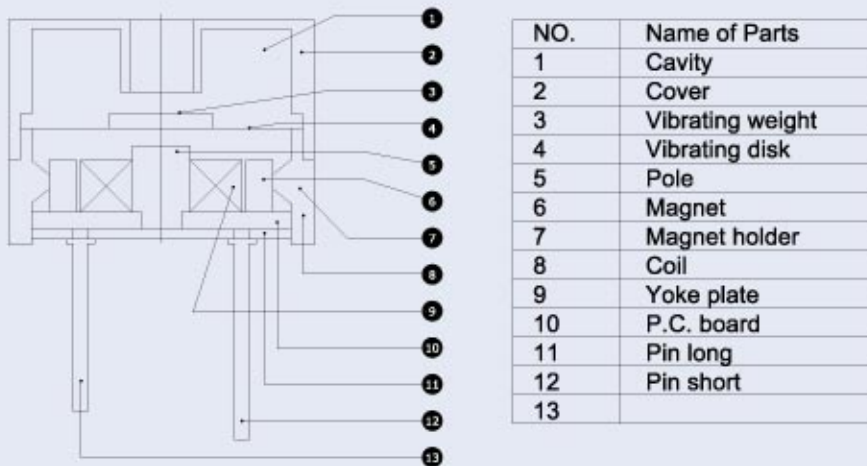
MODEL NO.	Dimensions (mm)	Rated Voltage (V)	Operating Voltage (V)	Resistance (Ω)	Rated Frequency (Hz)	SPL At 10cm (dBA)	Current Consumption (mA)	Operating Temp. (°C)	Terminal Type	Page NO.
OBO-25AL1	8.0×7.6×2.5	3.0	2~4	16±3	2,300	Min. 81	Max. 100	-20~+60	SMD	39
OBO-25AP1	8.0×7.6×2.5	3.0	2~4	16±3	2,700	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

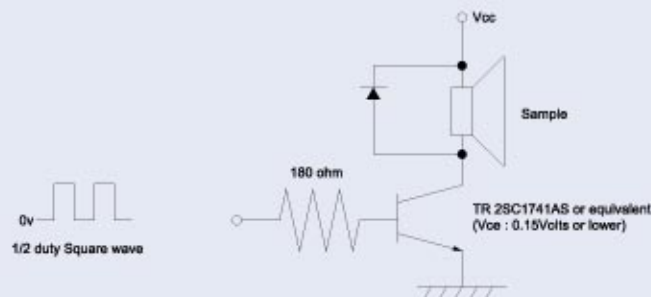
Magnetic Transducers are driven by an input frequency. The given frequency characteristics can be obtained only when applying square wave (Vo-p).

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



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

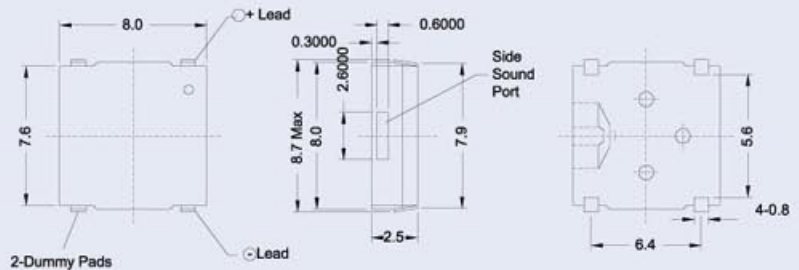
SMD MAGNETIC TRANSDUCER

SMD 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
TERMINAL	導端

Dimensions (Unit: mm ± 0.2)



HOUSING MATERIAL : LCP

Frequency Response

FEATURES

- SMD small size
- Side opening for sound emission

適用範圍

- SMD小尺寸
- 側孔發音

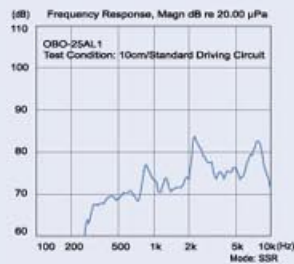
☆ Value applying rated voltage (resonant frequency, 1/2 duty square wave)

OBO-25AL1

3.0VDC
2~4V
max. 100mA
min. 81dB
16 ± 3Ω
2,300Hz
-20°C to +60°C
-40°C to +85°C
0.4gm
SMD Type

OBO-25AP1

3.0VDC
2~4V
max. 100mA
min. 83dB
16 ± 3Ω
2,700Hz
-20°C to +60°C
-40°C to +85°C
0.4gm
SMD Type



SMD MAGNETIC TRANSDUCER

SMD 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
TERMINAL	導端

Dimensions (Unit: mm ± 0.2)

Frequency Response

FEATURES

- SMD small size
- Side opening for sound emission

適用範圍

- SMD小尺寸
- 側孔發音

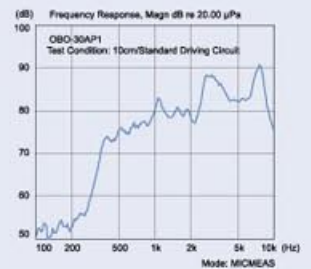
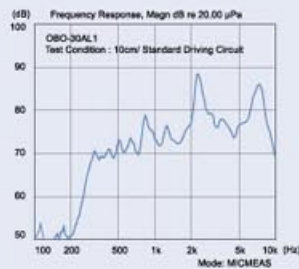
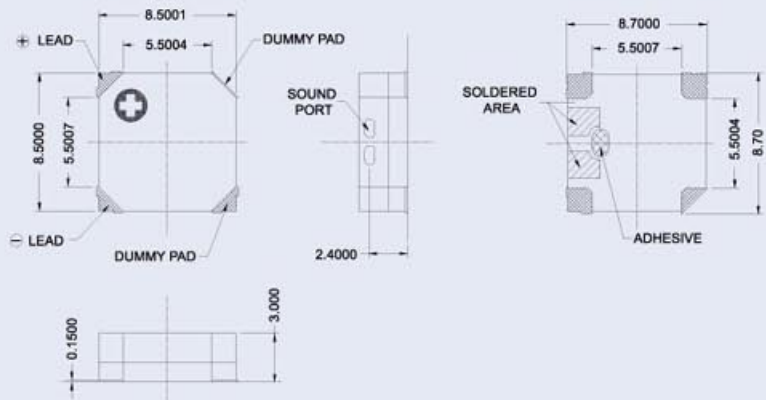
☆ Value applying rated voltage (resonant frequency, 1/2 duty square wave)

OBO-30AL1

3.0VDC
2~4V
max. 100mA
min. 83dB
16 ± 3Ω
2,300Hz
-30°C to +70°C
-40°C to +85°C
0.5gm
SMD Type

OBO-30AP1

3.0VDC
2~4V
max. 100mA
min. 85dB
16 ± 3Ω
2,700Hz
-30°C to +70°C
-40°C to +85°C
0.5gm
SMD Type



SMD MAGNETIC TRANSDUCER

SMD 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
TERMINAL	導端

Dimensions (Unit: mm ± 0.2)

FEATURES

- SMD small size
- Side opening for sound emission

適用範圍

- SMD小尺寸
- 側孔發音

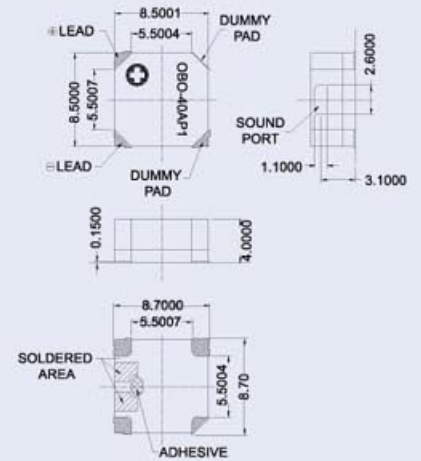
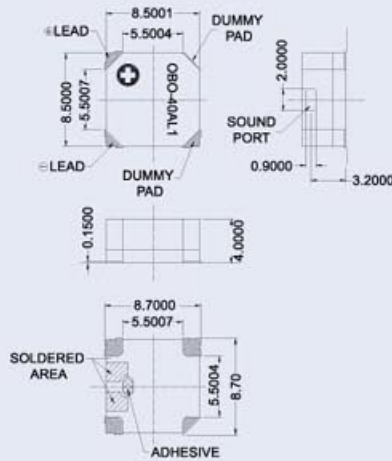
☆ Value applying rated voltage (resonant frequency, 1/2 duty square wave)

OBO-40AL1

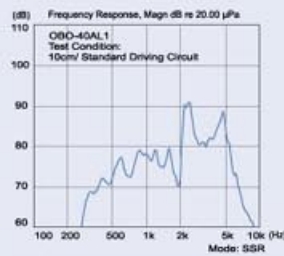
3.0VDC
2~4V
max. 80mA
min. 87dB
16 ± 3Ω
2,300Hz
-30°C to +70°C
-40°C to +85°C
0.6gm
SMD Type

OBO-40AP1

3.0VDC
2~4V
max. 80mA
min. 90dB
16 ± 3Ω
2,700Hz
-30°C to +70°C
-40°C to +85°C
0.6gm
SMD Type



Frequency Response



SMD MAGNETIC TRANSUCER

SMD 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
TERMINAL	導端

Dimensions (Unit: mm ± 0.5)

FEATURES

- SMD small size
- Side opening for sound emission

適用範圍

- SMD小尺寸
- 側孔發音

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

OBO-40BS1

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

5.5 ± 1Ω

2,730Hz
-30°C to +70°C
-40°C to +85°C

1.0gm

SMD Type

OBO-40BS2

3.0VDC
2~4V
max. 80mA
min. 85dB

15 ± 3Ω

2,730Hz
-30°C to +70°C
-40°C to +85°C

1.0gm

SMD Type

OBO-40BS3

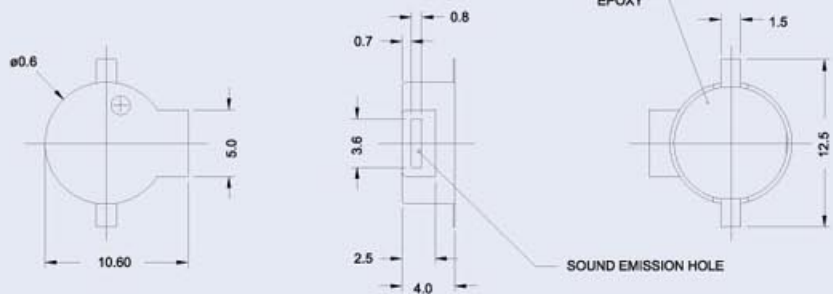
5.0VDC
4~6V
max. 80mA
min. 85dB

30 ± 5Ω

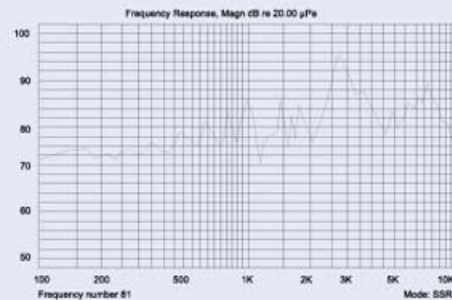
2,730Hz
-30°C to +70°C
-40°C to +85°C

1.0gm

SMD Type

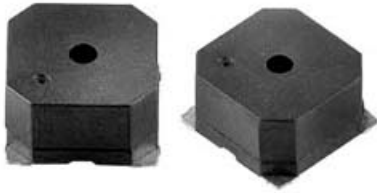


Frequency Response



SMD MAGNETIC TRANSDUCER

SMD 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
TERMINAL	導端

Dimensions (Unit: mm ± 0.2)

FEATURES

- SMD small size
- Top opening for sound emission

適用範圍

- SMD小尺寸
- 正孔發音

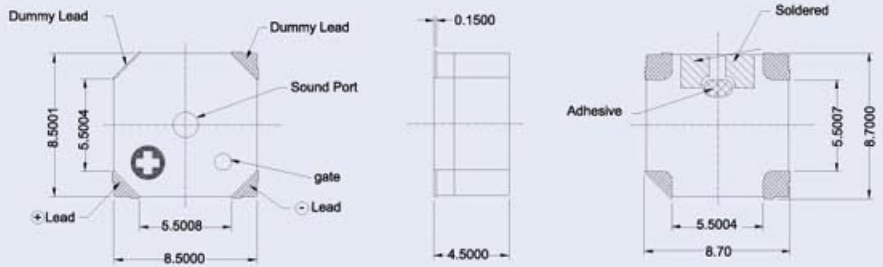
☆ Value applying rated voltage (resonant frequency, 1/2 duty square wave)

OBO-45AL1

3.0VDC
2~4 V
max. 80mA
min. 87dB
16 ± 3Ω
2,300Hz
-30°C to +70°C
-40°C to +85°C
0.6gm
SMD Type

OBO-45AP1

3.0VDC
2~4 V
max. 80mA
min. 87dB
16 ± 3Ω
2,700Hz
-30°C to +70°C
-40°C to +85°C
0.6gm
SMD Type



Frequency Response



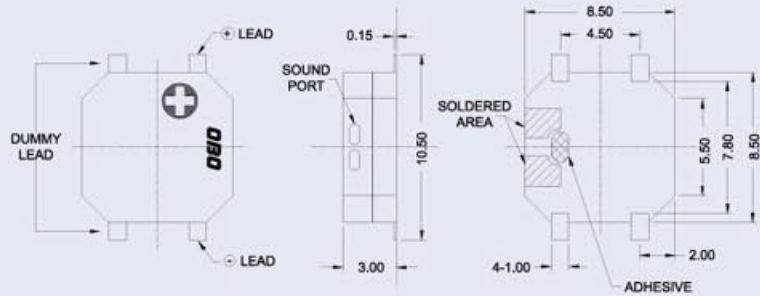
SMD MAGNETIC TRANSDUCER

SMD 電磁式蜂鳴器

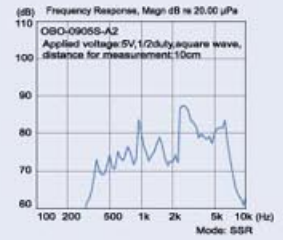
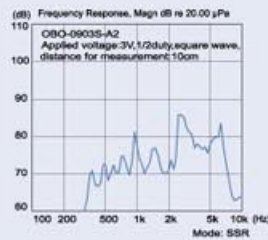


RATED VOLTAGE	設定電壓
OPERATING VOLTAGE	電壓範圍
☆ RATED CURRENT	消耗電流
☆ SOUND PRESSURE LEVEL AT 10 CM	輸出音壓
COIL RESISTANCE	線圈電阻
RATED FREQUENCY	額定頻率
OPERATING TEMP. RANGE	操作溫度
STORAGE TEMP. RANGE	儲存溫度
WEIGHT	重量
TERMINAL	導端

Dimensions (Unit: mm ± 0.2)



Frequency Response



FEATURES

- SMD small size
- Side opening for sound emission

適用範圍

- SMD小尺寸
- 側孔發音

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

OBO-0903S-A2

3.0VDC
2~5V
max.100mA
min. 87dB
16 ± 4Ω
2,700Hz
-30°C to +70°C
-40°C to +85°C
0.5gm
SMD Type

OBO-0905S-A2

5.0VDC
4~7V
max.100mA
min. 87dB
30 ± 4Ω
2,700Hz
-30°C to +70°C
-40°C to +85°C
0.5gm
SMD Type