



SPECIFICATIONS

MODEL NO
OBO-D64SN-0B-10S

PART NAME
ELECTRET CONDENSER MICROPHONE

SHEET
1 OF 8

ALTERNATION HISTORY

| Marking | Date | ECN NO. | REV. | Description | Page | PREPARE BY | APPROVE BY |
|---------|-------------|---------|------|--------------|------|------------|------------|
| -- | JUL.26,2012 | --- | A | New Document | 8 | 曾梅梅 | 黃炳紘 |
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| REV. | DATE | PREPARED BY | CHECKED BY | APPROVED BY |
|------|-------------|-------------|------------|-------------|
| A | JUL.26,2012 | 曾梅梅 | 王志偉 | 黃炳紘 |



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MODEL NO
OBO-D64SN-0B-10S

PART NAME
ELECTRET CONDENSER MICROPHONE

SHEET
2 OF 8

MODEL NO : OBO- D64SN-0B-10S

Features: Conformity Rosh Directive (2002/95/EC) Requests.

1. Electrical Characteristics

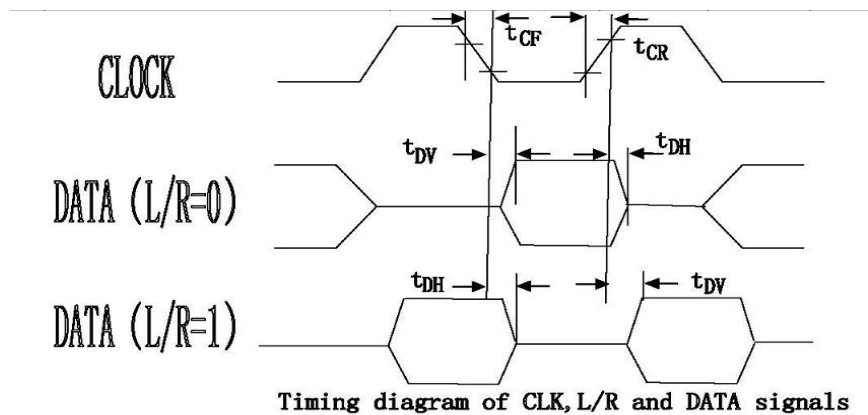
(Temp=20±2°C Room Humidity=65±5%)

| No | Parameter | Symbol | Min | Typ | Max | Unit | Comments |
|------|-------------------------------------|--------|------------|--------------------------|------------|------|--|
| 1.1 | Sensitivity(analog signals output) | S | -31 | -28 | -25 | dB | 0dB=1V/Pa , at 1kHz |
| 1.2 | Noise transfer function cut-off | NTF | | 0.055 x f _{CLK} | | MHz | Relative to fCLK |
| 1.3 | Modulator order | | | 4 | | | Given by design |
| 1.4 | Idle mode tone frequency | fT | 22 | | | KHz | @ Fclk=1 MHz |
| 1.5 | Clock freq.(sample rate) | fCLK | 1 | 2.4 | 3 | MHz | |
| 1.6 | Clock duty cycle | fDC | 40 | 50 | 60 | % | |
| 1.7 | Jitter tolerance | δ | | | 0.5 | ns | |
| 1.8 | Output Voltage low | VIOL | -0.3 | | 0.35 X VDD | V | |
| 1.9 | Output Voltage high | VIOH | 0.65 X VDD | | VDD+ 0.3 | V | |
| 1.10 | Output current at high voltage | IH | 1 | | 10 | mA | Short circuit current |
| 1.11 | Extended Vdd range | | 2.4 | 3.3 | 3.63 | V | |
| 1.12 | Signal to Noise Ratio | S/N | 57 | | | dB | at 1kHz S.P.L=1Pa (A-Weighted Curve) |

2. Digital Logical Characteristics

| Symbol | Parameter | Min | Typical | Max | Units |
|-----------------|--|-----------------|---------|-----------------|-------|
| V_{IT+} | Positive-going input threshold voltage | | 1.82 | | V |
| V_{IT-} | Negative-going input threshold voltage | | 1.27 | | V |
| ΔV_{IT} | Input hysteresis | | 0.55 | | V |
| V_{IOL} | Data input/output logic low level | -0.3 | | $0.35 * V_{DD}$ | V |
| V_{IOH} | Data input/output logic high level | $0.65 * V_{DD}$ | | $V_{DD} + 0.3$ | V |

| | High Impedance | Data sampled at | L/R_SELECT Connected to |
|-------------------------|----------------|-----------------|-------------------------|
| DATA_L | Falling clock | Rising clock | GND |
| DATA_R | Rising clock | Falling clock | V_{DD} |



3. Frequency Responses

The microphone must fulfill the relative frequency response tolerance window specifications with the following measurement conditions.

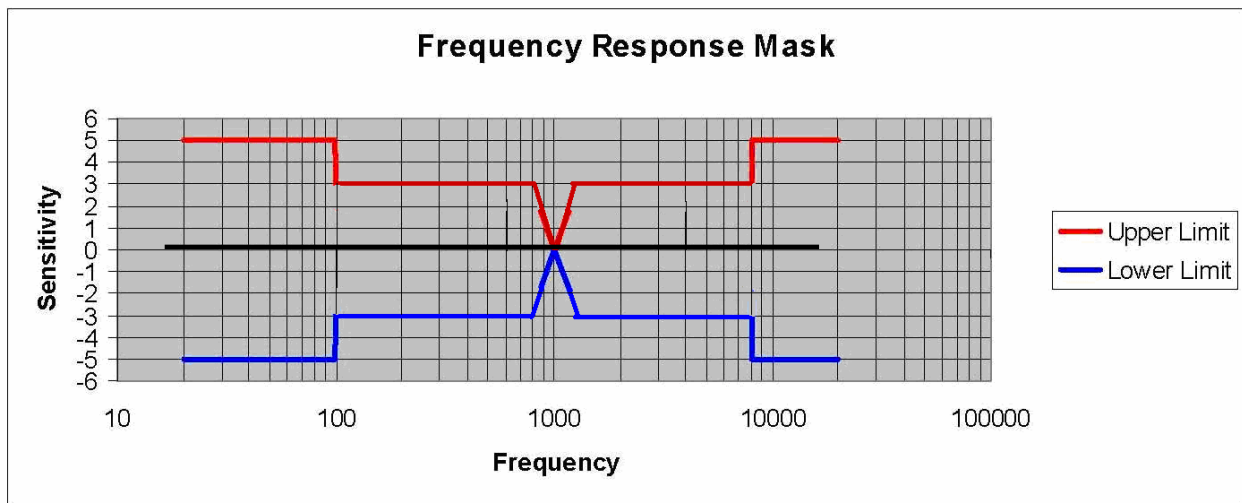
TEMPERATURE: +20°C

ACOUSTIC STIMULUS: 1Pa (94dB SPL) - measured at 50 cm from the Hi-Fi loudspeaker. The loudspeaker must be equalized for flat frequency response.

POSITION: The far field measurement point is located 50cm from the Hi-Fi speaker. The speaker must be positioned away from any reflecting surfaces. The 1Pa acoustic stimulus is at the microphone position.

Frequency Response Mask for Digital microphones

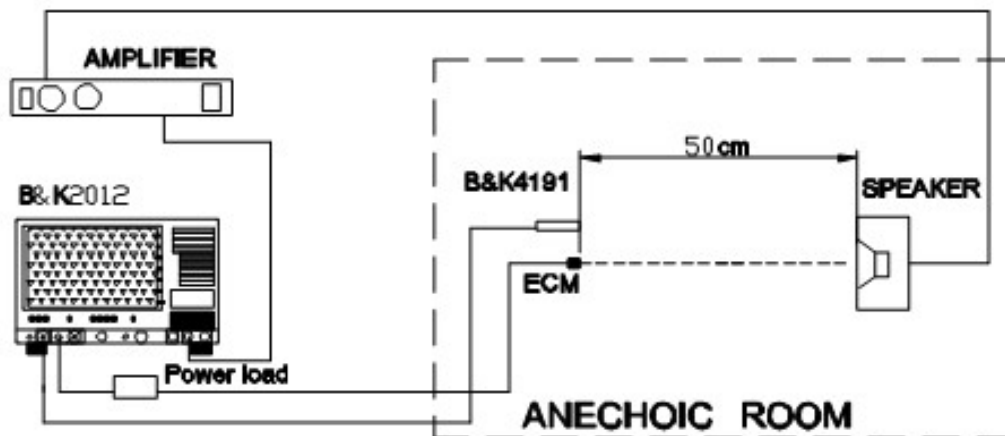
| Frequency / Hz | Lower limit | Upper limit | Unit |
|-----------------|-------------|-------------|----------|
| 20 ... 100 | -5 | +5 | dBr 1kHz |
| 100 ... 8000 | -3 | +3 | dBr 1kHz |
| 8000 ... 20 000 | -5 | +5 | dBr 1kHz |



NOTICE:

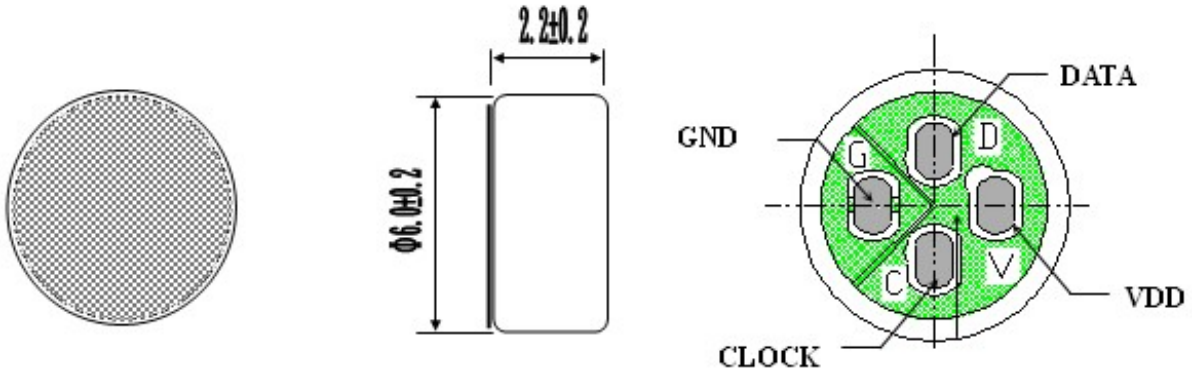
The distribution of the sensitivity must be a Normal Distribution and the Cpk value for the sensitivity must be at least 1.66 in all conditions.

4 · Test Setup Drawing



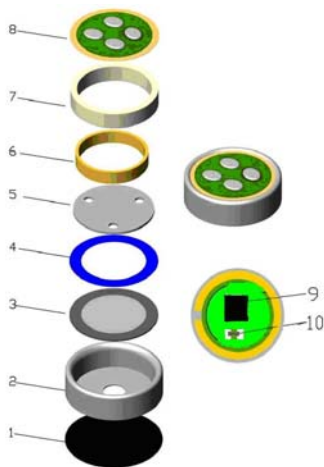
5 · Appearance And Dimension

Unit : mm



| Name | Function |
|---------------------|--|
| GND | Ground |
| CLK | User-adjustable clock input to microphone |
| DATA _{L,R} | Right or left microphone PDM data output |
| V _{DD} | Power supply and IO voltage for microphone |

6 · Drawing



| | | | | |
|------------|---------------------|-----------------|------------|---------------|
| 10 | Chip Capacitor | | 1 | 100000PF |
| 9 | IC | | 1 | |
| 8 | P.C.B | | 1 | FR-4 |
| 7 | Copper ring | | 1 | |
| 6 | HOUSPING CHAMBER | | 1 | |
| 5 | ELECTRET BACK | | 1 | |
| 4 | SPACER | | 1 | |
| 3 | POLARIZED DIAPHRAGM | | 1 | |
| 2 | CASE | AL-mg alloy | 1 | |
| 1 | FELT | Fabric cloth | 1 | |
| No. | Name | material | QTY | Remark |

7. Temperature Conditions

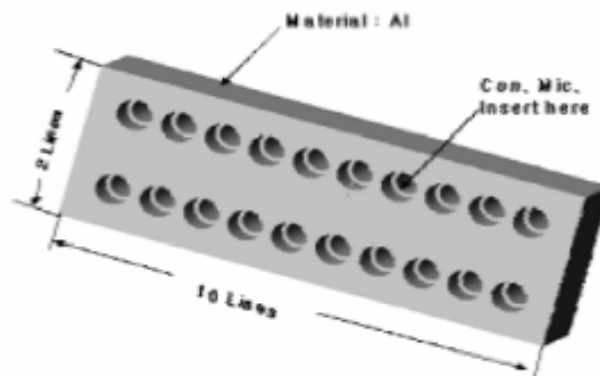
| Storage Temperature Range | Operation Temperature Range |
|---------------------------|-----------------------------|
| -40°C ~ +75°C | -20°C ~ +60°C |

8. Terminal Mechanical Strength

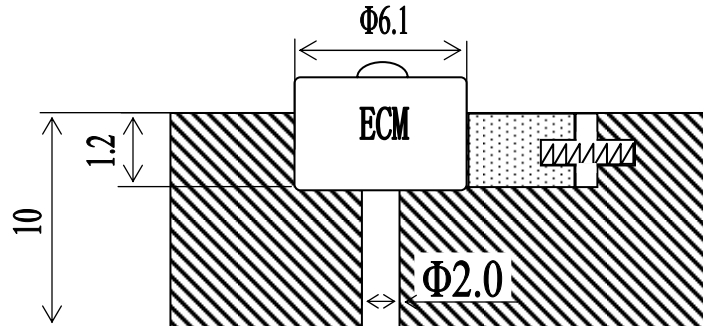
Terminal mechanical strength to be no interference in operation after pulled the terminal with 1kg strength for 1 minute.

9. Soldering Conditions

- 1 we use anti-static welding machine which can control soldering temperature automatically.
- 2 Soldering temperature should be controlled under 320°C.
- 3 MIC shall be fixed on the metal block (heat sink), which has high radiation effects , and heat sink shall contact with MIC tightly.
- 4 Soldering time for each terminal shall be 1~2 sec.
- 5 Soldering pinhole shall be avoided.
- 6 MIC may easily be destroyed by the static electricity and the countermeasure for eliminating the static electricity shall be executed (worktable and human body shall be ground connection).
- 7 Heat Sink Shape of heat sink



Shape of hole at fixed part



11 Reliability Test

After each of following test, the sensitivity of the microphone should be within $\pm 3\text{dB}$ of initial sensitivity after 3 hours of conditioning at 20°C .

1. Vibration Test

Frequency : 10Hz~55Hz

Amplitude : 1.52mm

Change of Frequency : 1 octave/min

2 hours in each of axes

2. High Temperature Test

$+70^\circ\text{C}$ for 72 hours.

3. Low Temperature Test

-20°C for 72 hours.

4. Humidity Test

90%~95%RH, $+40^\circ\text{C}$ for 240 hours.

5. Temperature Cycles

-20°C \longleftrightarrow 25°C \longleftrightarrow 70°C \longleftrightarrow -20°C
 (2h) (1h) (2h) (1h) (2h) (2h) for 10 cycles.

12. Packing

1. MODEL NUMBER :
OBO-D64SN-0B-10S.

**DIMENSION:(LENGTH*WIDTH
*HEIGHT)**

2.1 Anti-Static Foam:
80mm*80mm*2mm

2.2 SMALL BOX
85mm*85mm*10mm

2.3 MIDDLE BOX:
175mm*95mm*50mm

2.4 CARTON SIZE:
550mm*230mm*235mm

3. QUANTITY AND WEIGHT

3.1 100PCS/SMALL BOX

3.2 1000PCS/MID BOX

3.3 20000PCS/CARTON

3.4 1PC=0.3g

3.5 NET WEIGHT : 6.0kg

3.6 GROSS WEIGHT : 10.0kg

4. LABEL STIPULATION

4.1 CONTENTS SHOULD BE SEEN CLEAR.

Packing chart



X1



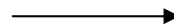
100PCS



X10



1000PCS



30000PCS

