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| Data Sheet | DMM-3526-B-R |
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Microphone Specifications

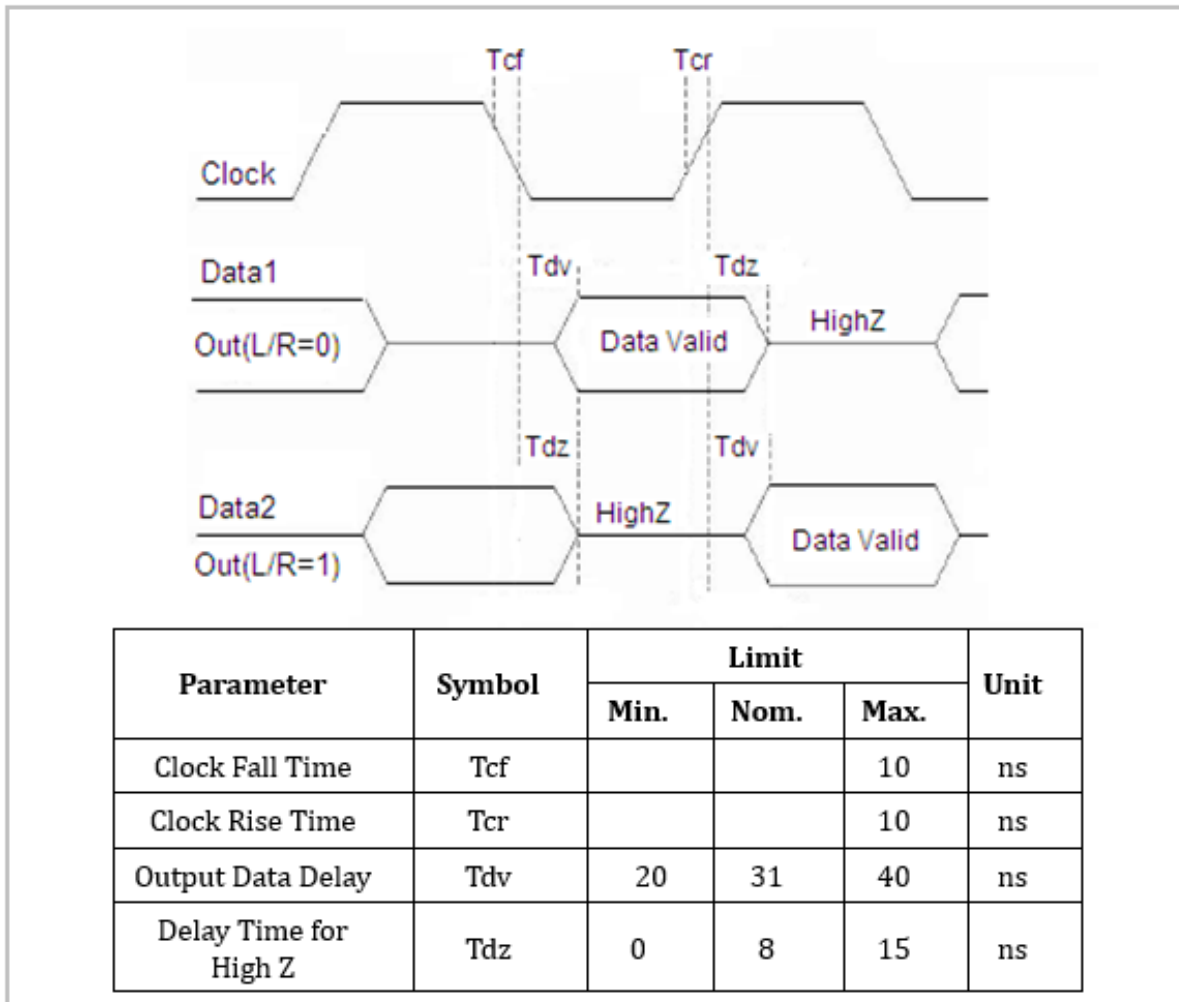
| Parameters | Condition | Values | Units |
|---|--|------------|------------|
| Directivity | Omnidirectional | | |
| Sensitivity | 1 kHz @ 50cm with 94 dB source 0 dB=1V/Pa | -26±1 | dB |
| Data Format | 1/2 Cycle PDM | | |
| Rated Voltage | - | 1.8 | VDC |
| Operating Voltage Range | - | 1.5 to 3.6 | VDC |
| Current Draw | Full Power Mode | 820 ~ 1000 | µA |
| | Low Power Mode | 400 ~ 450 | µA |
| Signal-to-Noise Ratio (1kHz, 94 dB input, A-weighted) | Full Power Mode | 63 | dB |
| | Low Power Mode | 61 | dB |
| Frequency Range | 20~18,000 | | Hz |
| Total Harmonic Distortion (typical) | 94 dB @ 50cm, 1 kHz acoustic source | 0.5% | - |
| Soldering Methods | Reflow Solder | | See page 6 |
| Acoustic Overload Point (AOP) | Full Power Mode SPL @ 50cm with 10% THD @ 1 kHz | | 123 dB |
| | Low Power Mode SPL @ 50cm with 10% THD @ 1 kHz | | 120 dB |
| Environmental Compliances | RoHS/Halogen Free | | |
| Power Supply Rejection | 100 mVpp Square Wave @ 217 Hz, A-weighted | -86 | dBFS |
| Weight | <0.3 | | Grams |
| Load Capacitance | 140 | | pF |
| Max Voltage on any Pin | 4 | | VDC |
| Maximum SPL Before Damage (Source 50cm from microphone) | 160 | | dB |
| Max Mechanical Shock | 10,000 | | Gs |
| Max Vibration | Pre-MIL-STD-883 Method 2007, Test Condition B | | |
| Operating Temperature (VDD <3.0V) | -40 ~ +100 | | °C |
| Operating Temperature (VDD >3.0V) | -40 ~ +70 | | °C |
| Storage Temperature | -40 ~ +125 | | °C |
| MSL (Moisture Sensitivity Level)* | 1 | | - |

*MSL level dependent on product remaining in sealed packaging until use

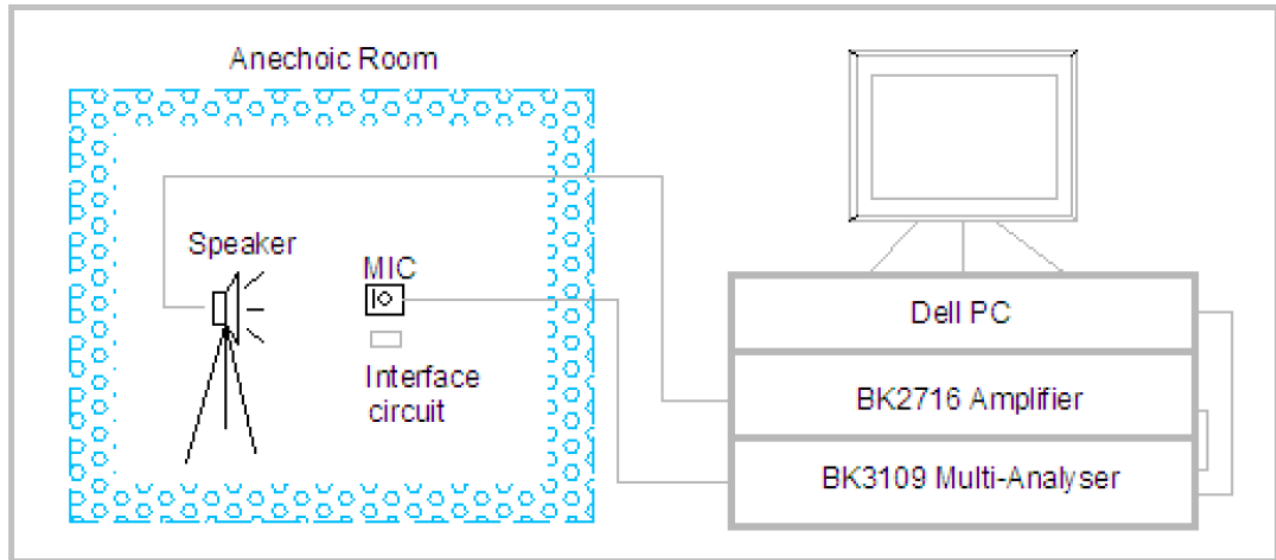
Operational Settings

| Parameters | Condition | Values | Units |
|-------------------|--|-----------------------|-------|
| Clock Frequency | Sleep Mode | 0 ~ 250 | kHz |
| | Low Power Mode | 351 ~ 800 | kHz |
| | Full Power Mode | 1.03 ~ 4.80 | MHz |
| Duty Cycle | For fCLK ≤ 2.4 MHz the duty cycle must be in the range of 40 ~ 60% and for fCLK > 2.4 MHz the duty cycle must be 50% | 40 ~ 60 | % |
| Logic Input High | - | 0.75*VDD ~ VDD + 0.3V | |
| Logic Input Low | - | -0.3 ~ 0.25*VDD | |
| Logic Output High | - | 0.75*VDD ~ VDD + 0.3V | |
| Logic Output Low | - | -0.3 ~ 0.25*VDD | |

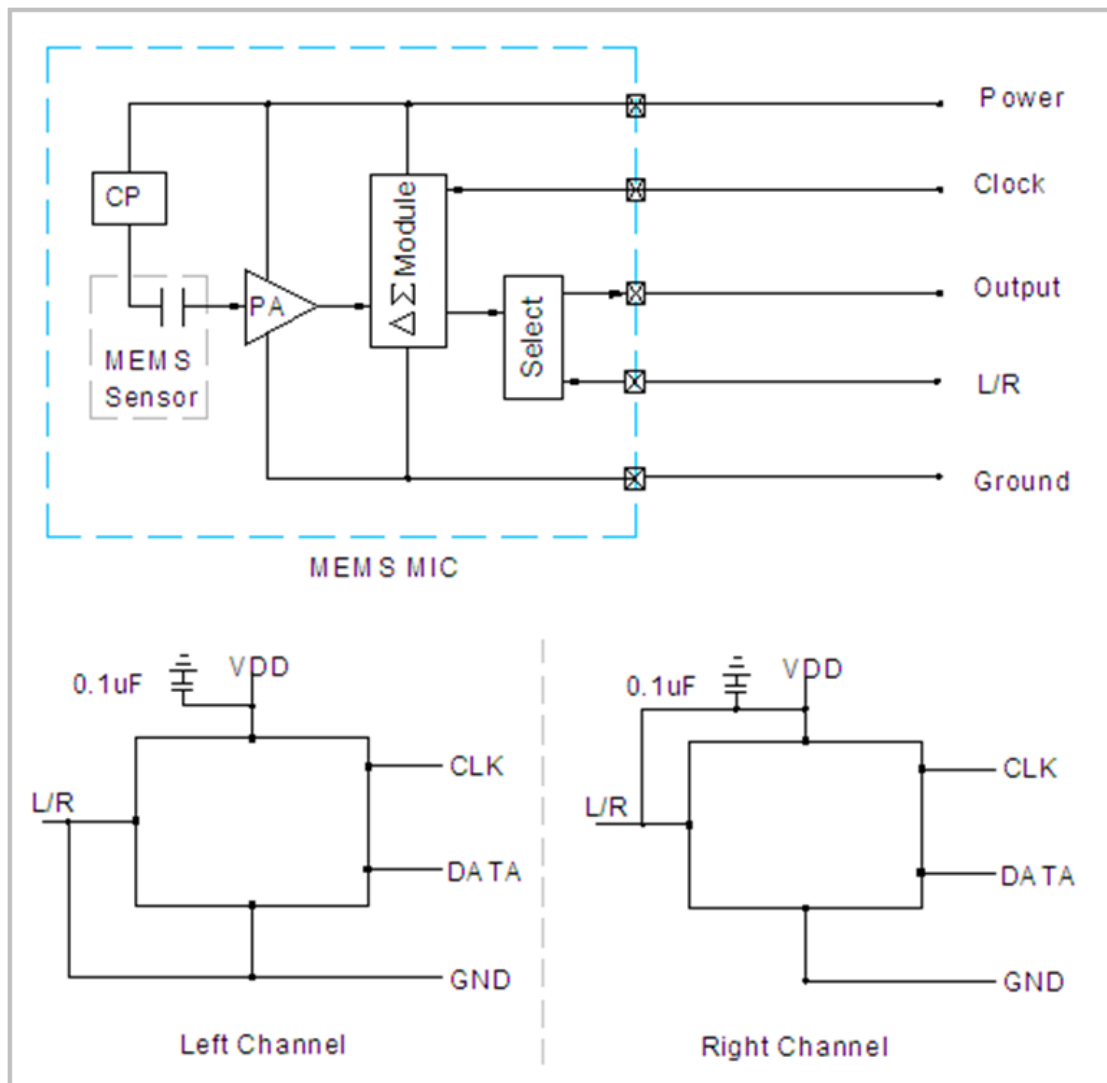
Timing Characteristics



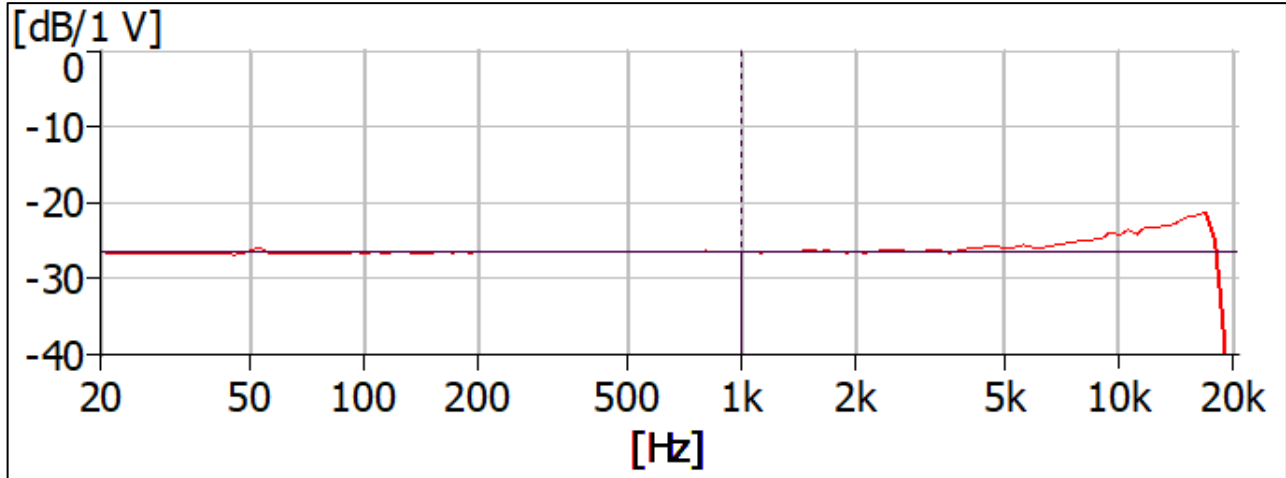
Measurement Method



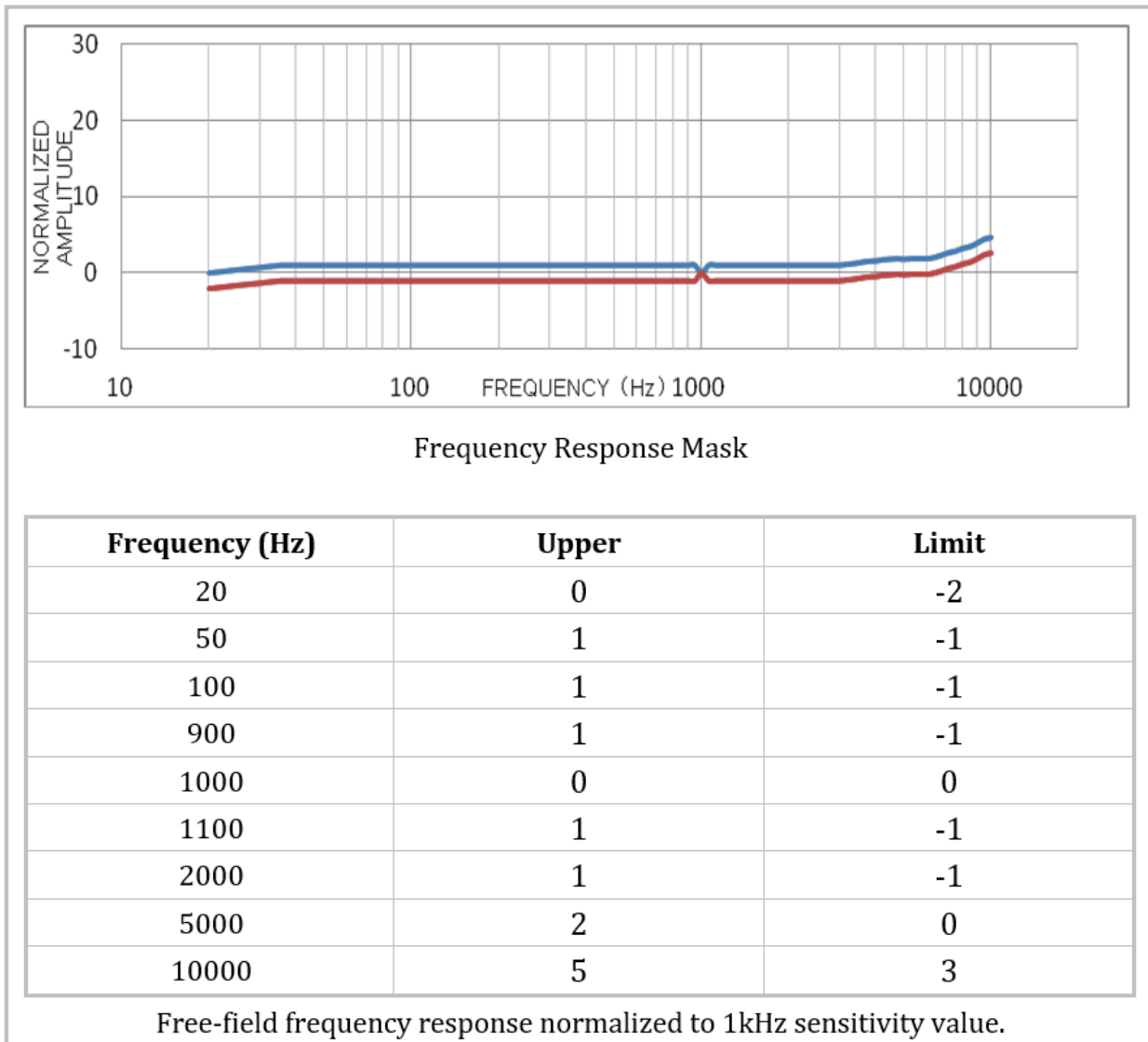
Measurement Interface Circuit



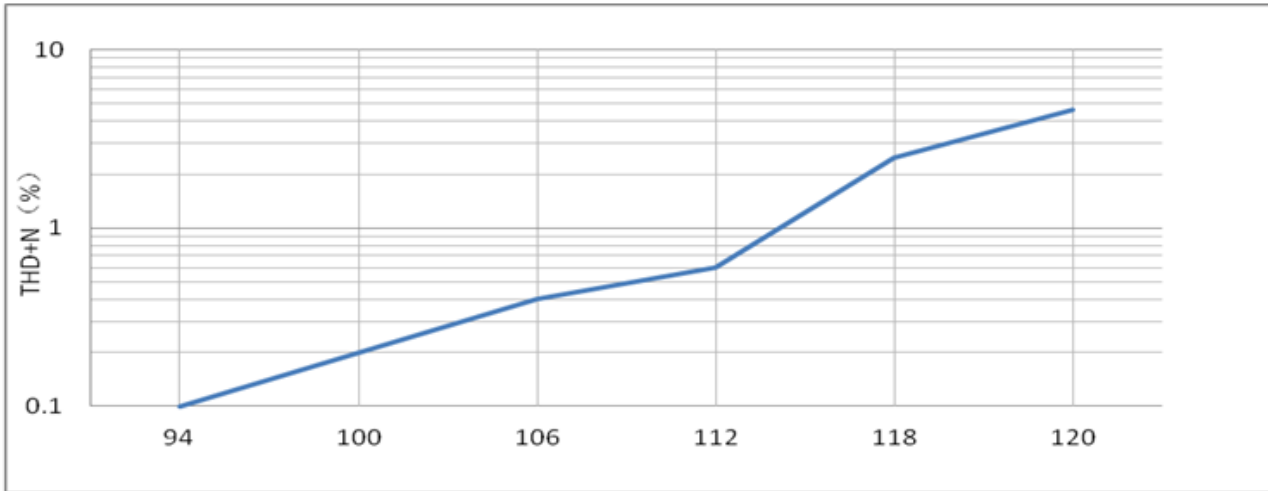
Typical Frequency Response



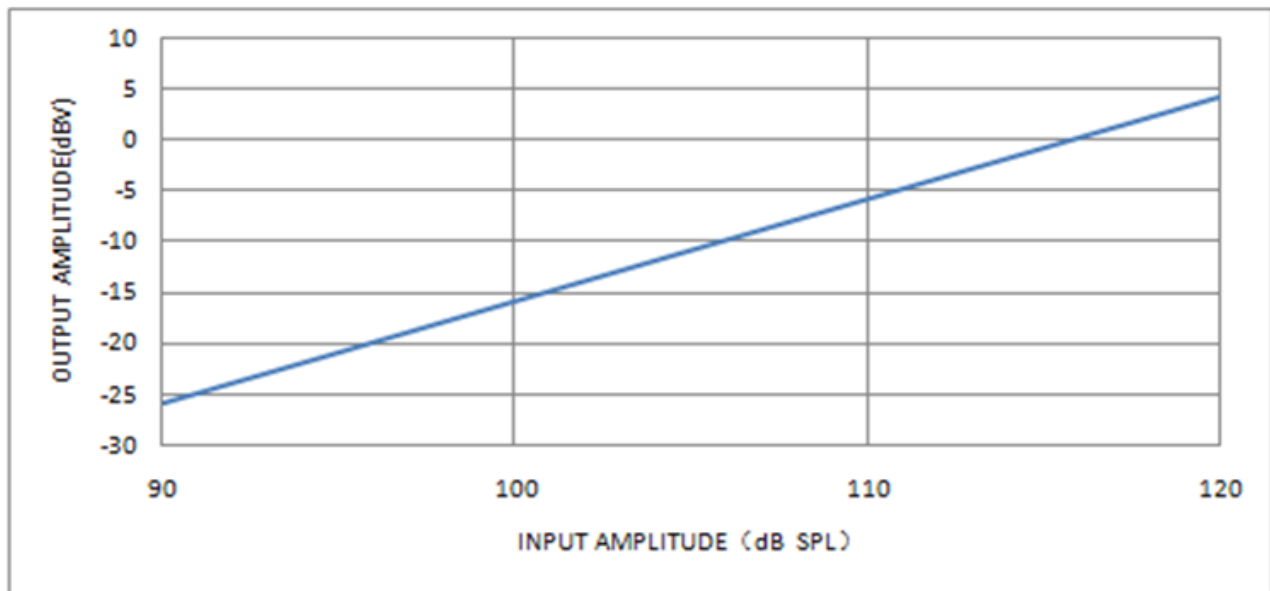
Frequency Response Mask (100% Pass/Fail Test for Microphones)



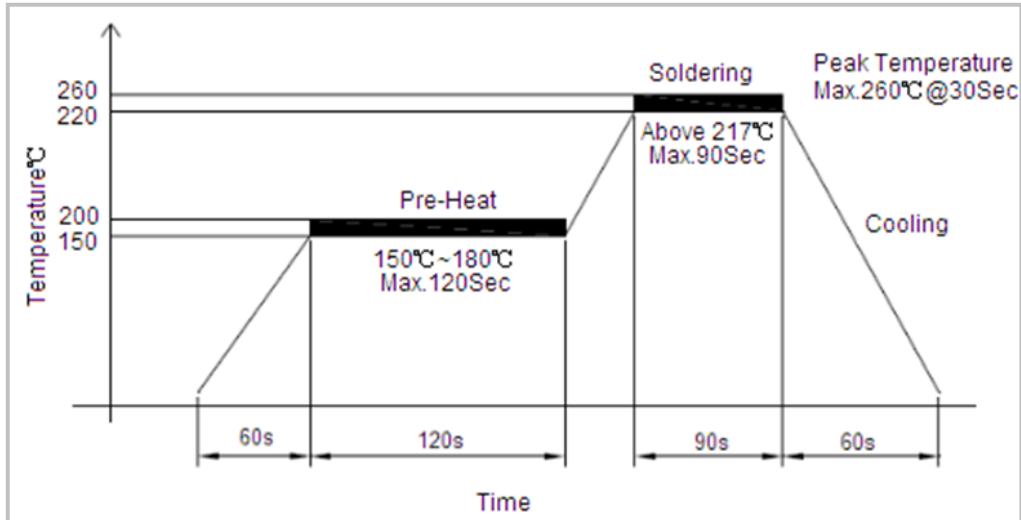
Total Harmonic Distortion + Noise versus SPL Input (with acoustic source at 50cm)



Microphone Output versus SPL Input (with acoustic source at 50cm)



Recommended Soldering Procedure



Important Notes to minimize device damage:

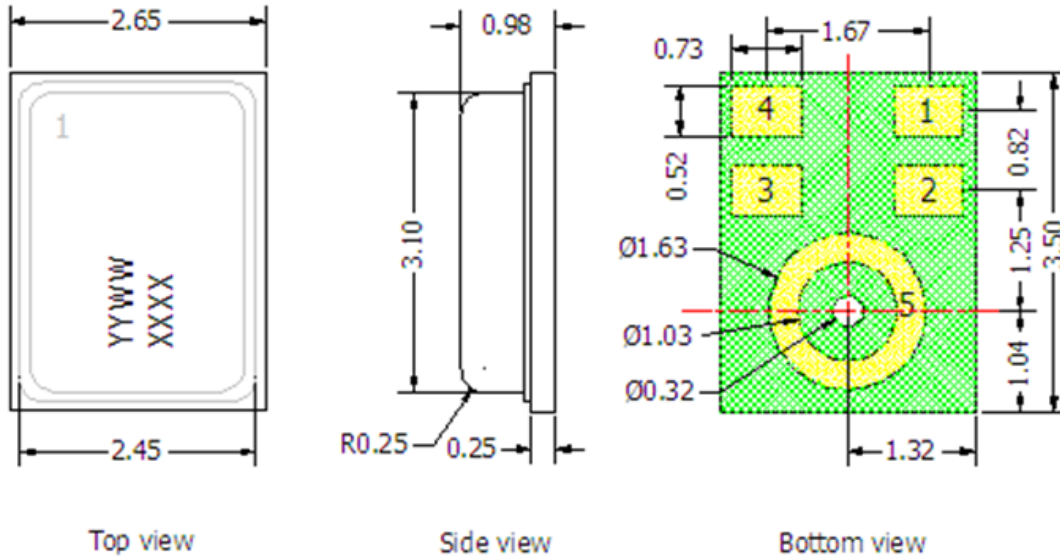
1. Do not boards wash or clean after the reflow process.
2. Do not apply over 0.3Mpa of air pressure into the port hole.
3. Do not expose to ultrasonic processing or cleaning.
4. Do not pull a vacuum over port hole of the microphone.

Reliability Testing

| Type of Test | Test Specifications |
|-----------------------------------|--|
| Simulated Reflow (Without Solder) | Samples for qualification testing require 3 passes 260±5 °C reflow solder profiles. 2 hours of setting time is required between each reflow profile test. |
| Static Humidity | Precondition at +25°C for 1 hour. Expose to +85°C with 85% relative humidity for 1000 hours. Dry at room ambient for 3±1 hour before taking final measurement. |
| Temperature Shock | Each cycle shall consist of 30 minutes at -40°C, 30 minutes at +125°C with 5 minutes transition time. Test duration is for 30 cycles, starting from cold to hot temperature. |
| ESD Sensitivity | Perform ESD sensitivity threshold measurements for each contact according to MIL-STD-883G, Method 3015.7 for Human Body Model. Identify the ESD threshold levels indicating passage of 8000V Human Body Model. |
| Vibration Test | Vibrate randomly along three perpendicular directions for 30 minutes in each direction, 4 cycles from 20~2000 Hz with a peak acceleration of 20 Gs. |
| Shock Test | Subject samples to half-sine shock pulses (3000±15% Gs for 0.3ms) in each direction, for a total of 18 shocks. |
| Drop Test | Drop samples from 1.5m height onto a steel surface, total 18 times and inspected for mechanical damage. |
| Operation Life | Subject samples to +125°C for 168 hours under full maximum rated voltage. |

Microphone frequency response and sensitivity shall not deviate more than ±3 dB.

Dimensions



| Data Code | |
|-----------|------------------------|
| YYWW | YY: Year WW: Work Week |
| XXXX | XXXX: Lot No. |

| Item | Dimension | Tolerance (+/-) | Units |
|--------------------|-----------|-----------------|-------|
| Length (L) | 3.50 | 0.10 | mm |
| Width (W) | 2.65 | 0.10 | mm |
| Height (H) | 0.98 | 0.10 | mm |
| Acoustic Port (AP) | Ø0.32 | 0.05 | mm |

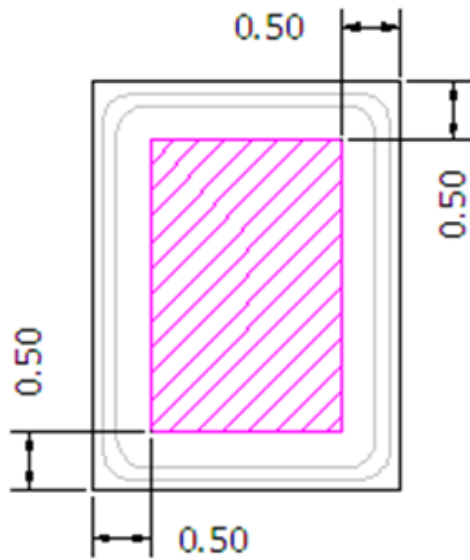
| Pin # | Pin Name | Type | Description |
|-------|-----------------|-------------|----------------|
| 1 | Output | Signal | Output Signal |
| 2 | L/R | L/R Channel | Channel select |
| 3 | CLK | Clock | Clock input |
| 4 | V _{DD} | Power | Power Supply |
| 5 | GND | Ground | Ground |

Notes:

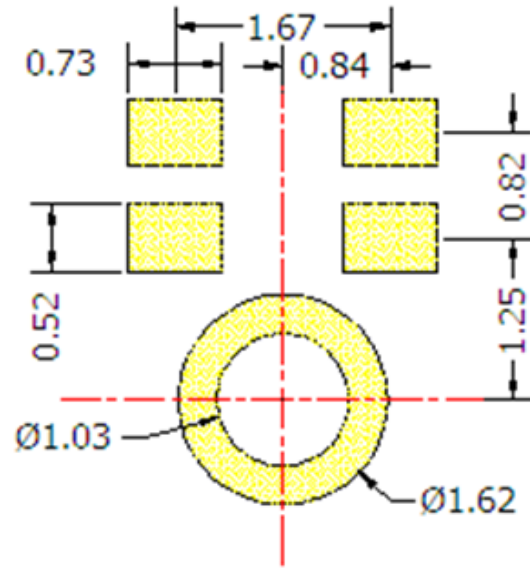
All dimensions are in millimeter (mm).

Tolerance ±0.15mm unless otherwise specified.

Suggested Pickup Tool Location and Land Pattern*



Recommended Pickup Location

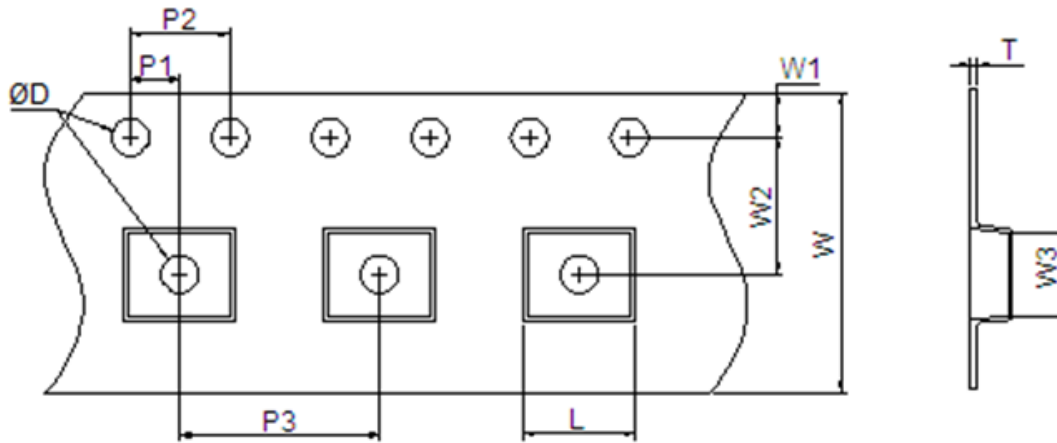


Recommended Solder Pad Layout

*This land pattern is advisory only and its use or adaptation is entirely voluntary. PUI Audio disclaims all liability of any kind associated with the use, application, or adaptation of this land pattern.

Packaging

Tape Specification



| Symbol | Dimension | | |
|-----------------|-----------|---------|---------|
| | Minimum | Nominal | Maximum |
| $\varnothing D$ | 1.5 | 1.5 | 1.6 |
| P1 | 1.9 | 2.0 | 2.1 |
| P2 | 3.9 | 4.0 | 4.1 |
| P3 | 7.9 | 8.0 | 8.1 |
| L | 3.7 | 3.8 | 3.9 |
| W | 11.7 | 12 | 12.3 |
| W1 | 1.65 | 1.75 | 1.85 |
| W2 | 5.4 | 5.5 | 5.6 |
| W3 | 2.85 | 2.95 | 3.05 |
| T | 0.25 | 0.3 | 0.35 |

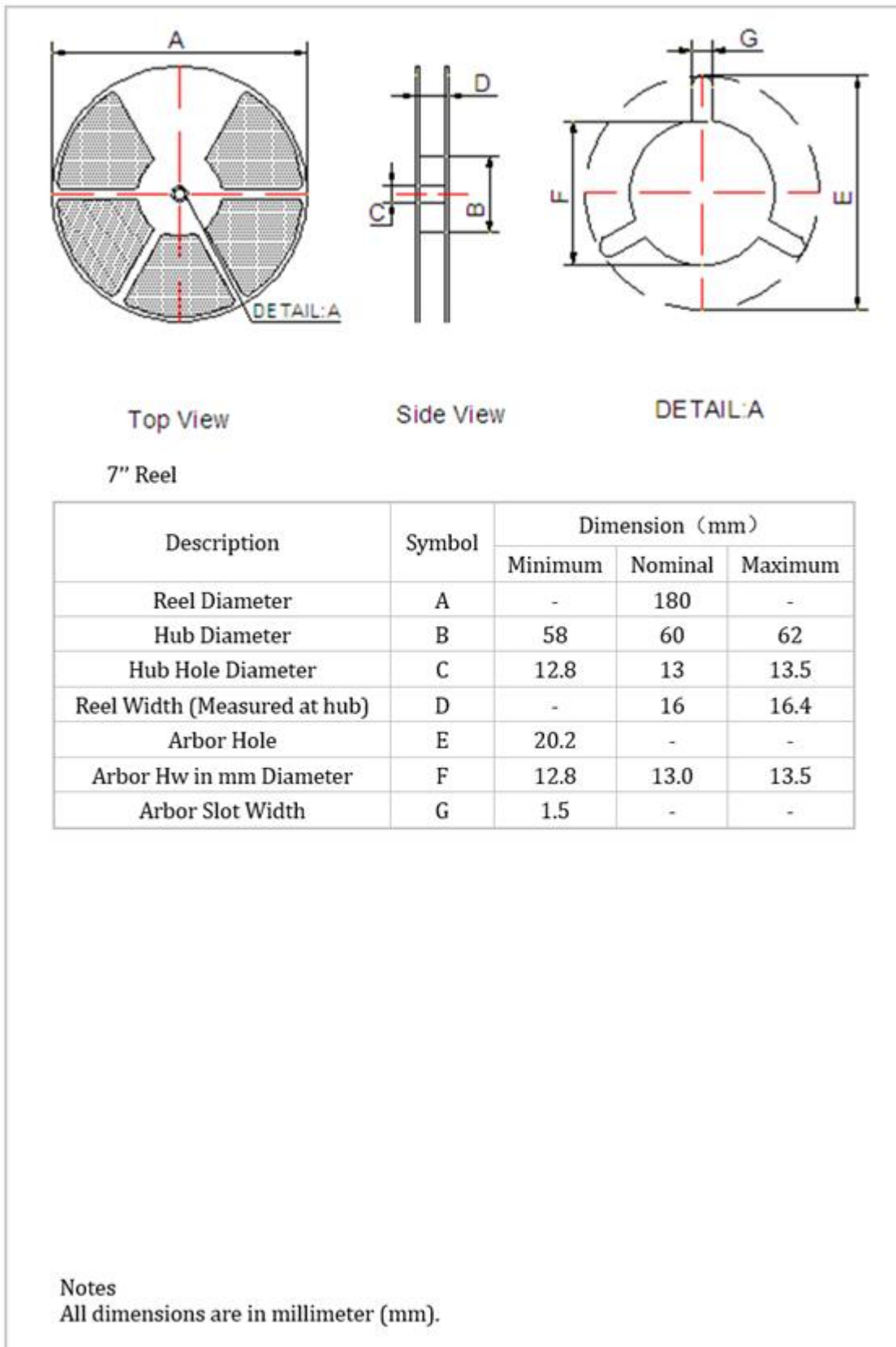
Notes

All dimensions are in millimeter (mm).

Tolerance $\pm 0.15\text{mm}$ unless otherwise specified.

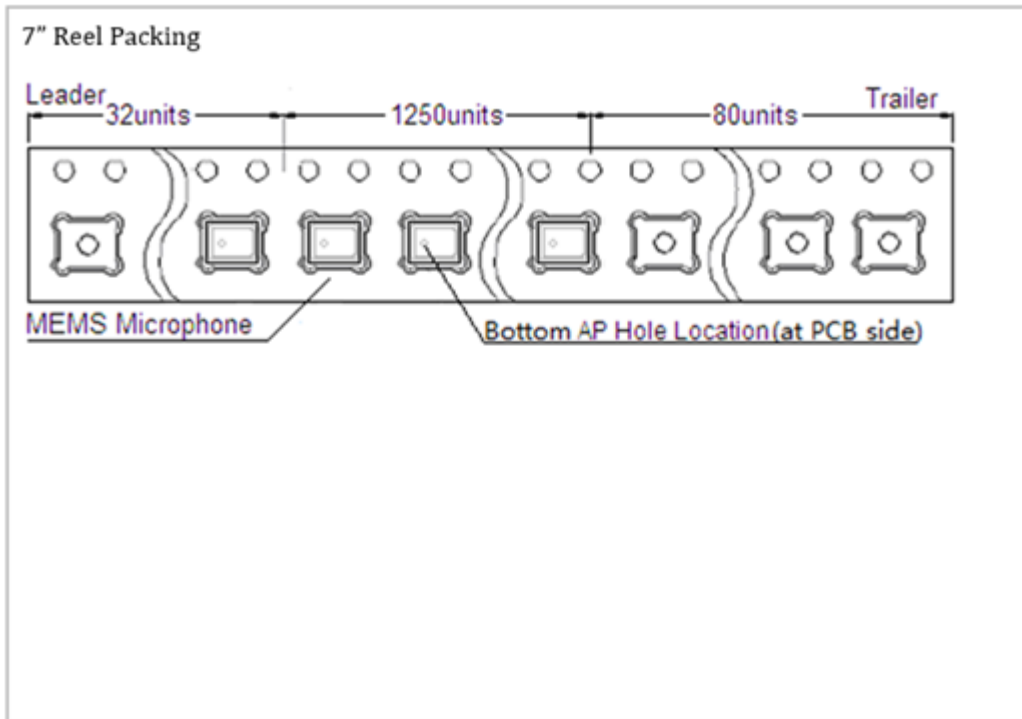
Packaging (continued)

Reel Specification

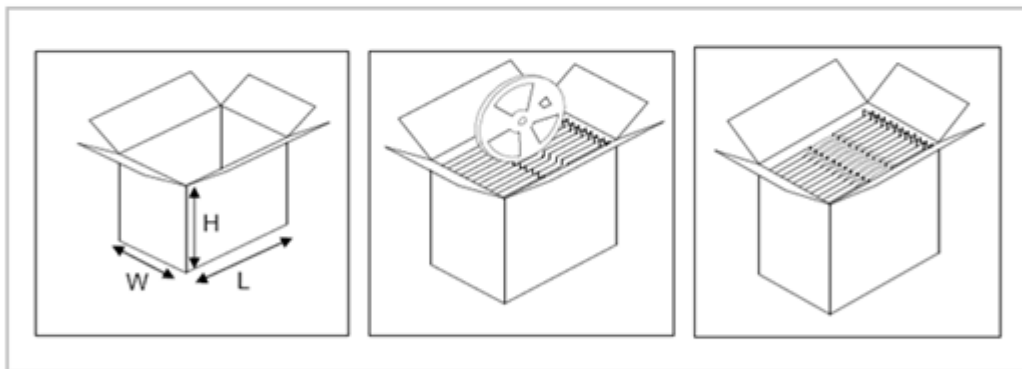


Packaging (continued)

Packing Quantity



Packing Information



Tape & Reel 7"

| Qty/reel | Weight/reel | Reel/Carton | Qty/carton | Weight full | Dimension carton Box | Storage |
|----------|-------------|-------------|------------|-------------|----------------------|-------------|
| Pcs | Kg | Nos | Nos | Load(kg) | (L x W x H) mm | Temp |
| 1250 | 0.25 | 4 | 5000 | ~3.00 | 272 x 159 x 236 | -10°C~50 °C |

Specifications Revisions

| Revision | Description | Date |
|-----------------|---------------------------|-------------|
| - | Released from Engineering | 10/31/2019 |

Note:

1. Unless otherwise specified:
 - A. All dimensions are in millimeters.
 - B. Default tolerances are $\pm 0.5\text{mm}$ and angles are $\pm 3^\circ$.
2. Specifications subject to change or withdrawal without notice.