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| Data Sheet | AMM-2742-T-R |
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Specifications

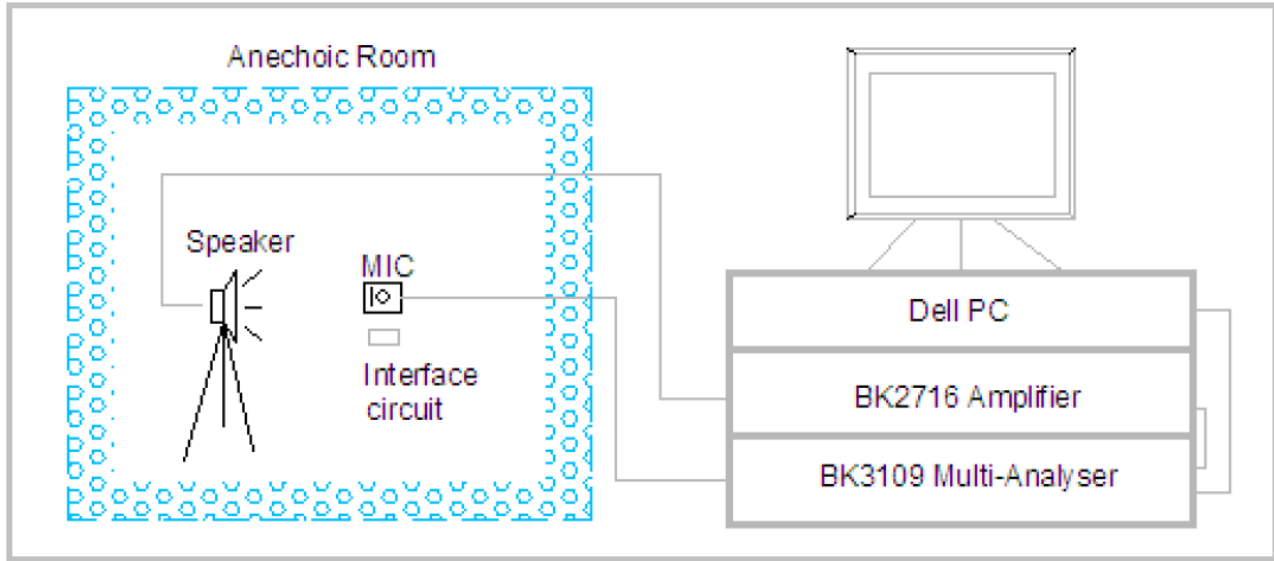
| Parameters | Values | Units |
|---|-------------------|--------------------------------------|
| Sensitivity (1 kHz @ 50cm) 0 dB=1V/Pa | -42 ±1 | dB |
| Rated Voltage | 2 | VDC |
| Operating Voltage Range | 1.5 to 3.6 | VDC |
| Output Impedance (@ 1 kHz) | 300 | Ω |
| Current consumption (at 2 VDC/at 3.6 VDC) | 80/150 | μA |
| Signal-to-Noise Ratio (1kHz, 94 dB input, A-weighted) | 59 | dB |
| Decreasing Voltage (0 dB=1V/Pa, 3.6 to 1.5 VDC) | 0.5 | dB |
| Frequency Range | 20 – 20,000 | Hz |
| Total Harmonic Distortion (94 dB @ 50cm, 1 kHz) | 0.5% | - |
| Acoustic Overload Point (AOP) (50cm, 1kHz, 10% THD) | 123 | dB |
| Directivity | Omnidirectional | |
| Acceptable Soldering Methods | Reflow Solder | See page 5 for soldering information |
| Environmental Compliances | RoHS/Halogen Free | |
| Power Supply Rejection (PSR, 100 mVpp Square Wave @ 217 Hz, A-weighted) | -90 | dB |
| Weight | <0.3 | Grams |
| Operating Temperature (VDD < 3 VDC) | -40 ~ +100 | °C |
| Operating Temperature (VDD > 3 VDC) | -40 ~ +70 | °C |
| Storage Temperature | -55 ~ +150 | °C |
| MSL (Moisture Sensitivity Level)* | 1 | - |

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

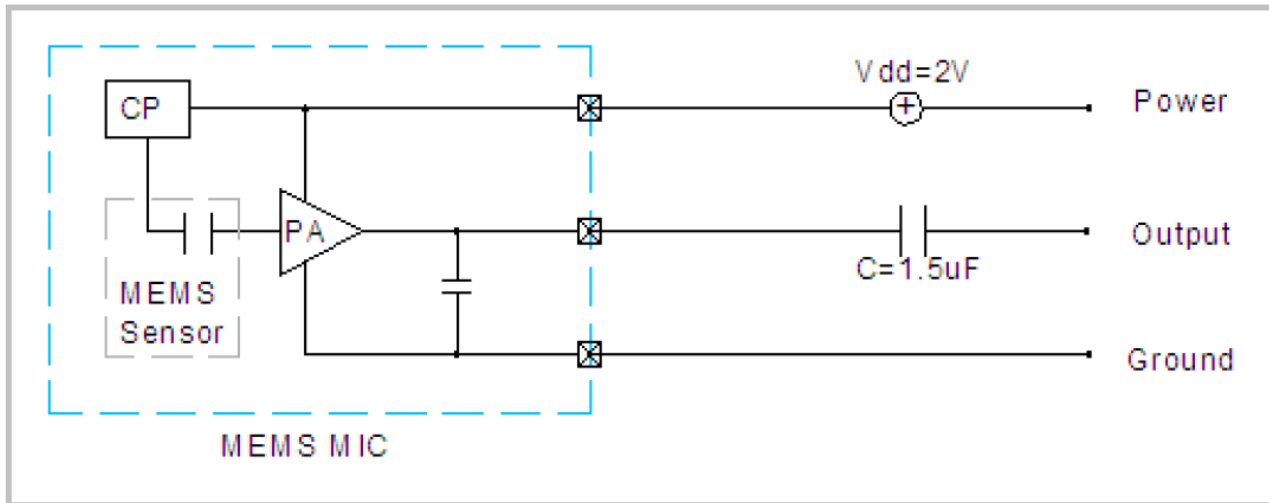
Absolute Maximum Ratings

| Parameters | Values | Units |
|--------------------------|---|-------|
| Max Voltage on Any Pin | 4 | VDC |
| Max Sound Pressure Level | 160 | dB |
| Max Mechanical Shock | 10,000 | Gs |
| Max Vibration | Pre-MIL-STD-883 Method 2007, Test Condition B | |

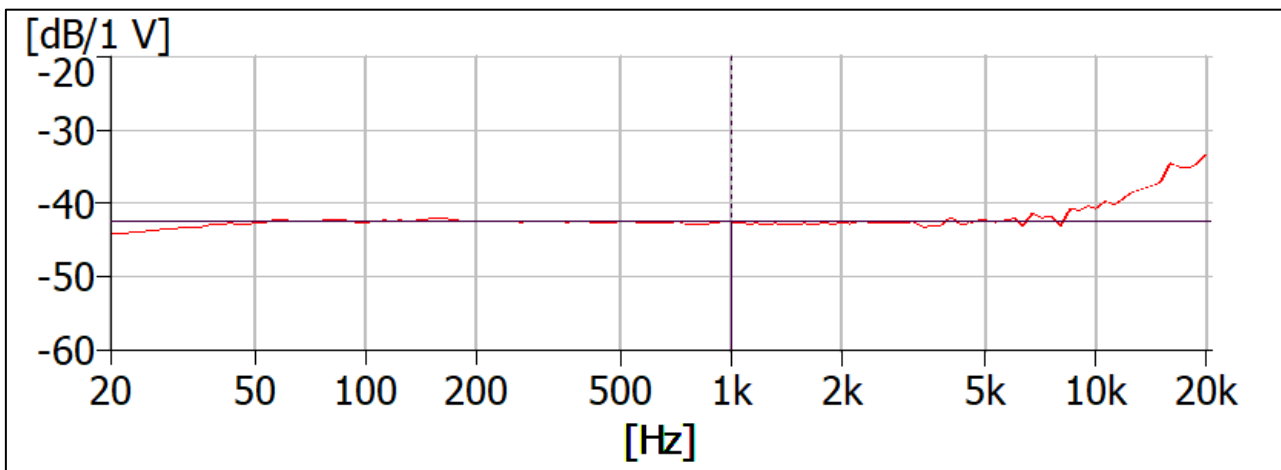
Measurement Method (with speaker spaced 50cm from microphone)



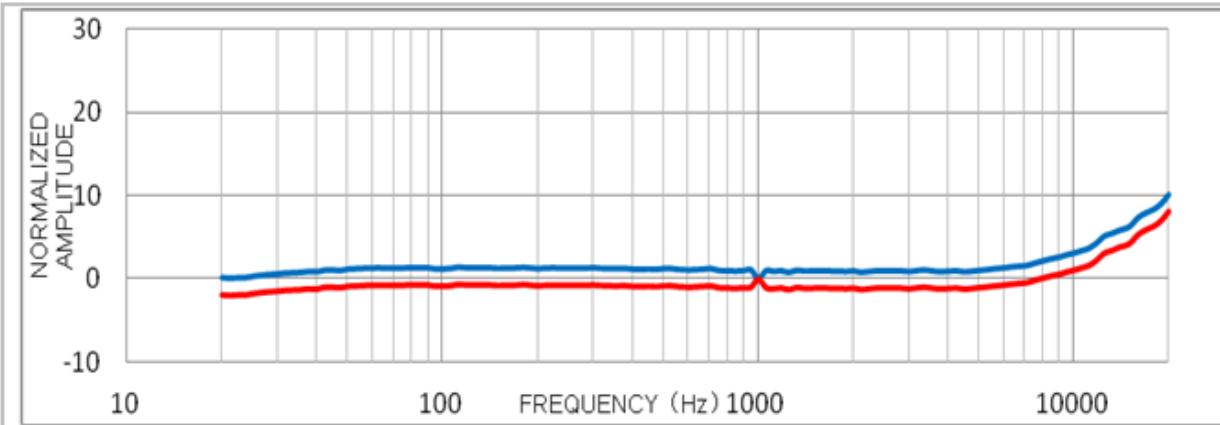
Recommended Drive Circuit



Typical Frequency Response



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

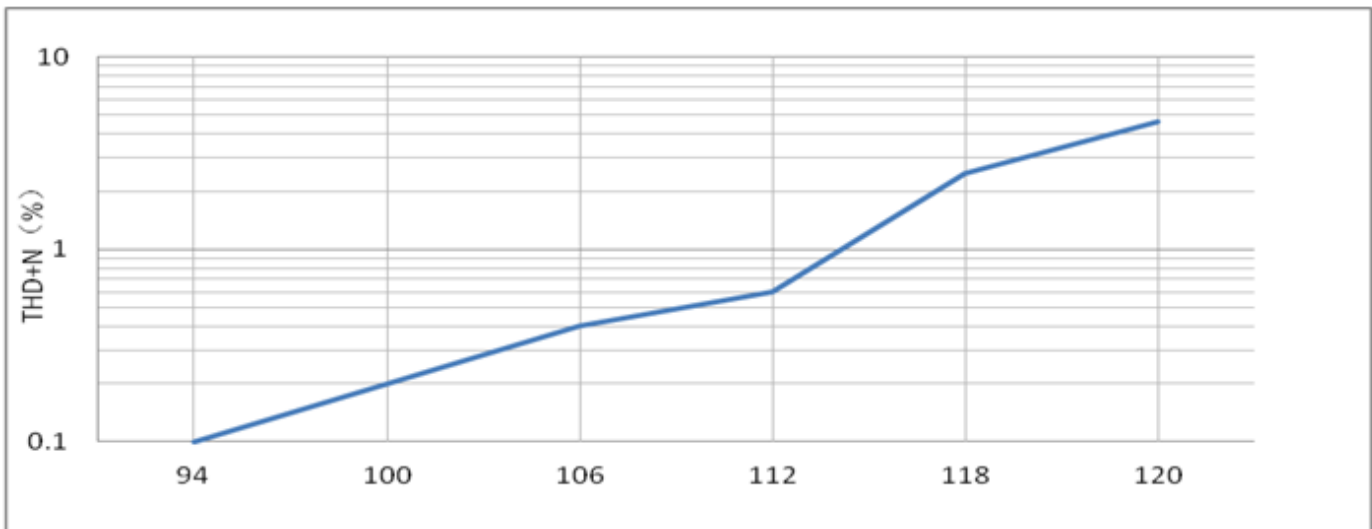


Frequency Response Mask

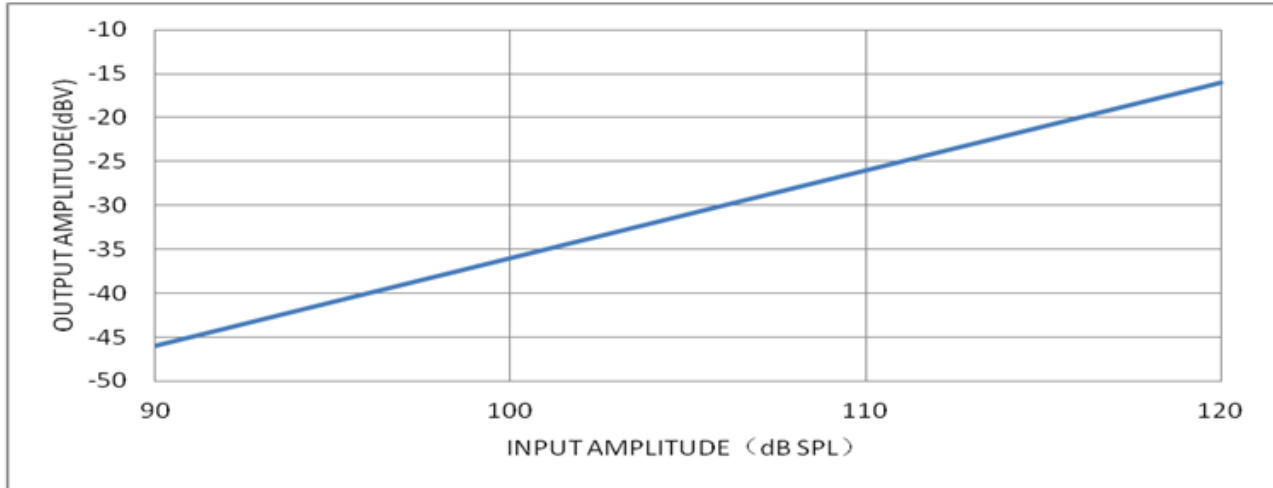
| Frequency (Hz) | Upper | Limit |
|----------------|-------|-------|
| 20 | 0 | -2 |
| 50 | 1 | -1 |
| 100 | 1 | -1 |
| 900 | 1 | -1 |
| 1000 | 0 | 0 |
| 1100 | 1 | -1 |
| 2000 | 1 | -1 |
| 5000 | 1 | -1 |
| 10000 | 3 | 1 |
| 15000 | 6 | 4 |
| 20000 | 10 | 8 |

Free-field frequency response normalized to 1kHz sensitivity value.

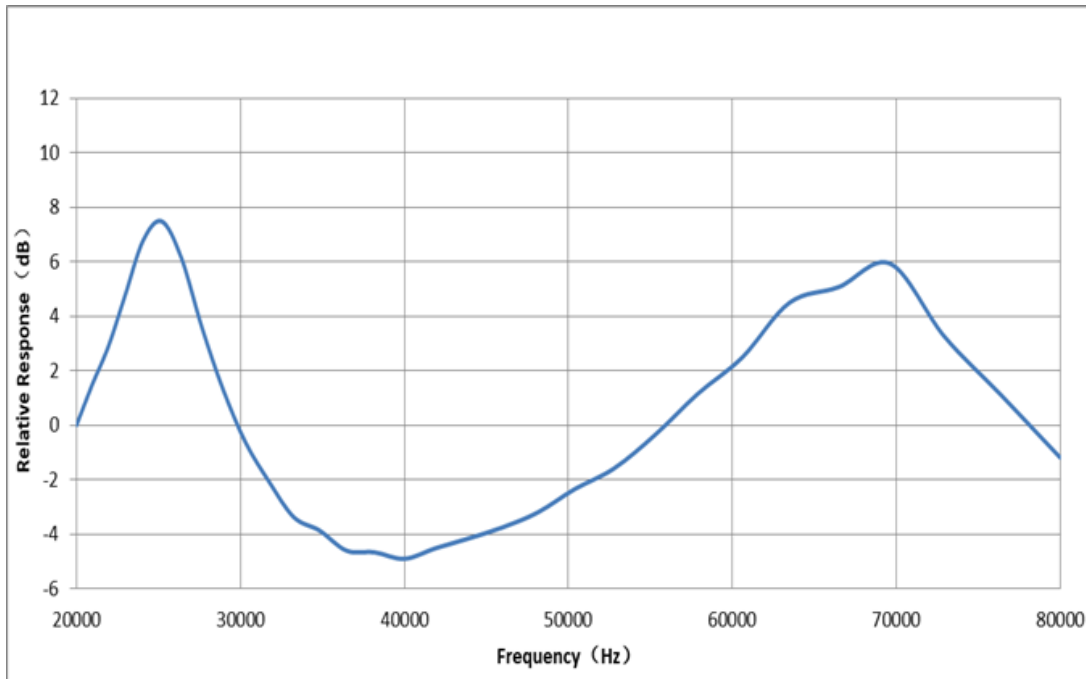
Total Harmonic Distortion + Noise versus SPL Input (with acoustic source at 50cm)



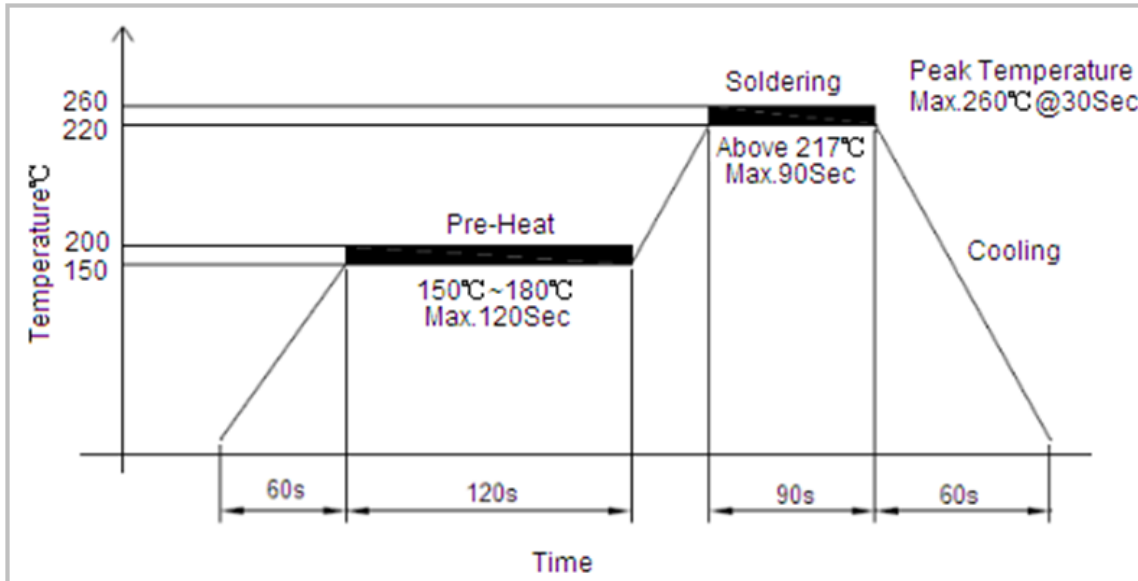
Microphone Output versus SPL Input (with acoustic source at 50cm)



Ultrasonic Frequency Response (Sensitivity normalized to 0 dB)



Recommended Reflow Soldering Procedure



Important Notes to minimize device damage:

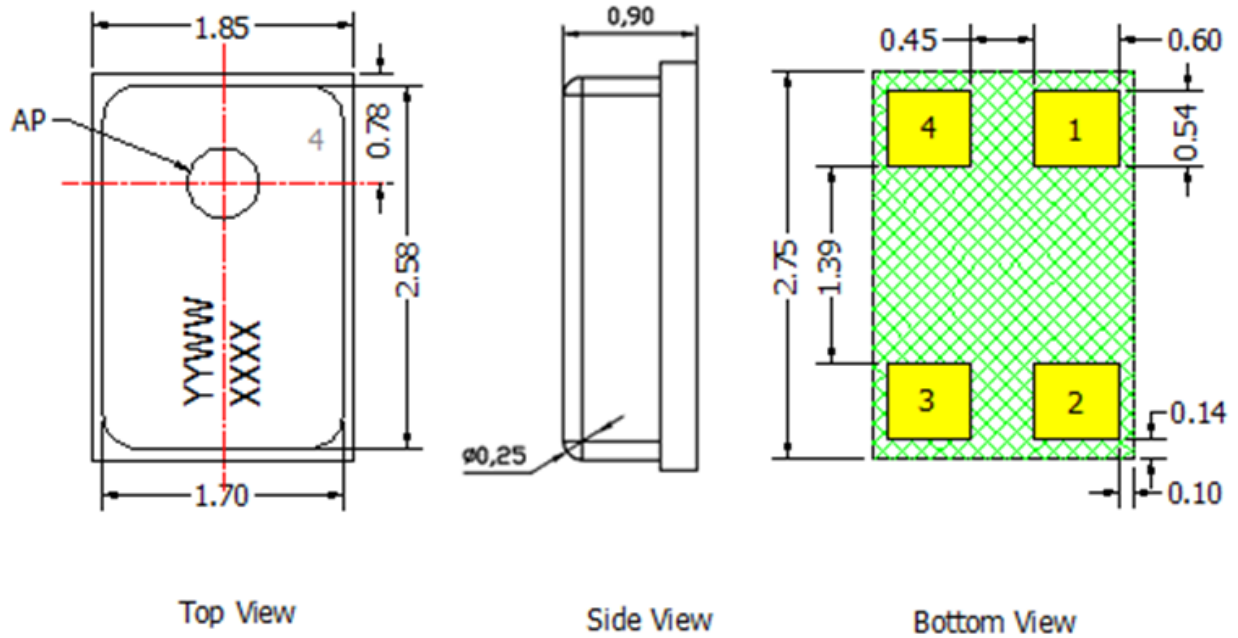
1. Do not boards wash or clean after the reflow process.
2. Do not apply over 0.3Mpa of air pressure into the port hole.
3. Do not expose to ultrasonic processing or cleaning.
4. Do not pull a vacuum over port hole of the microphone.

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. Finally, 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



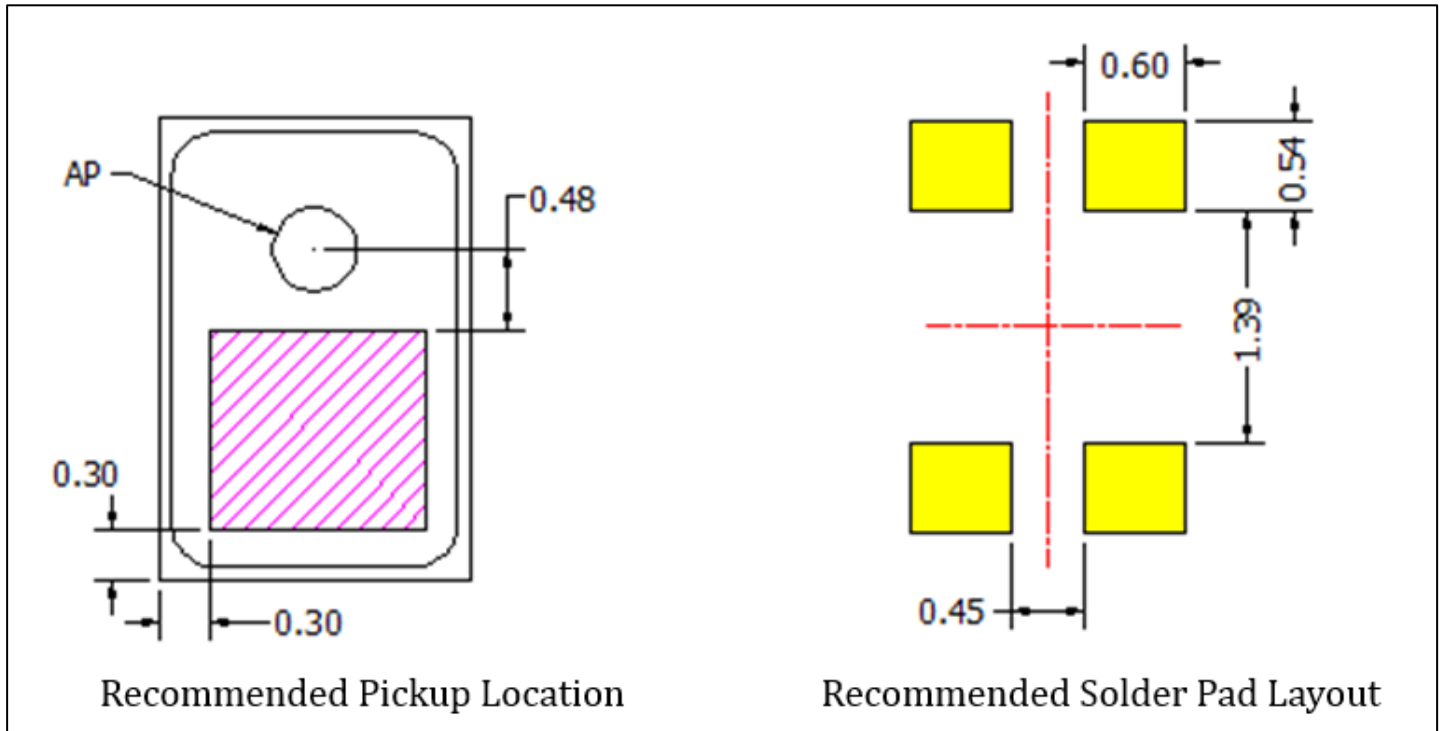
| Data Code | |
|-----------|-----------------------|
| YYWW | YY:Year WW: Work Week |
| XXXX | XXXX: Lot No. |

| Item | Dimension | Tolerance (+/-) | Units |
|--------------------|-----------|-----------------|-------|
| Length(L) | 2.75 | 0.10 | mm |
| Width(W) | 1.85 | 0.10 | mm |
| Height(H) | 0.9 | 0.10 | mm |
| Acoustic Port (AP) | Ø0.5 | 0.05 | mm |

| Pin # | Pin Name | Type | Description |
|-------|-----------------|--------|---------------|
| 1 | DATA | Signal | Output Signal |
| 2 | GND | Ground | Ground |
| 3 | GND | Ground | Ground |
| 4 | V _{DD} | Power | Power Supply |

Notes:
 All dimensions are in millimeter (mm).
 Tolerance ±0.15mm unless otherwise specified.

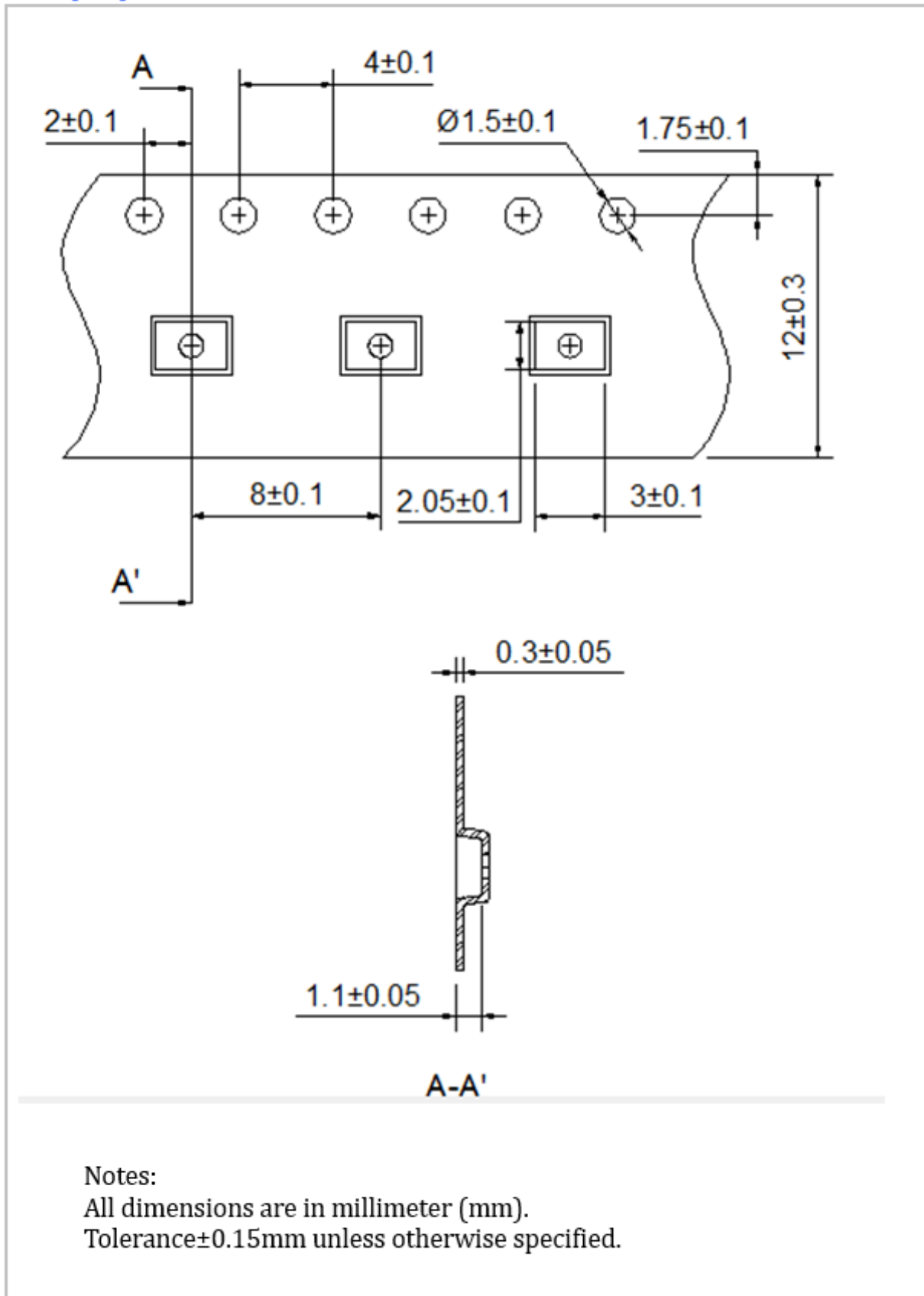
Suggested Pickup Tool Location and Land Pattern*



*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.

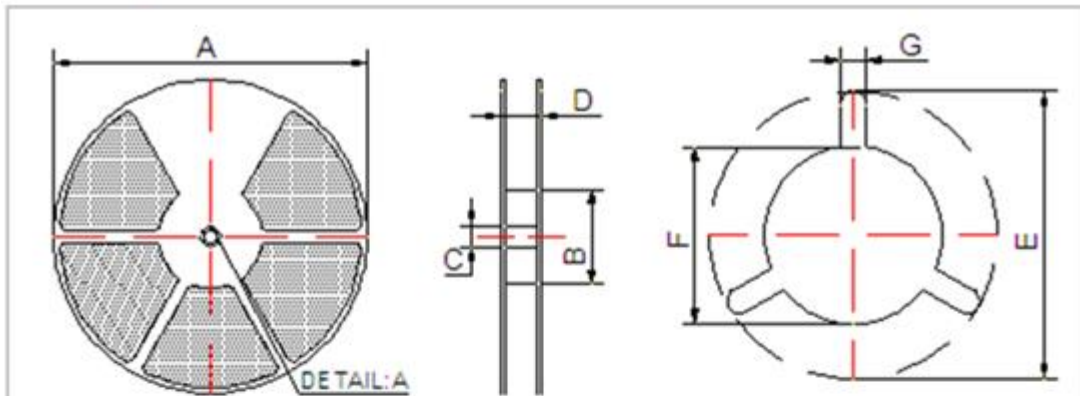
Packaging

Tape Specification



Packaging (continued)

Reel Specification



Top View

Side View

DETAIL A

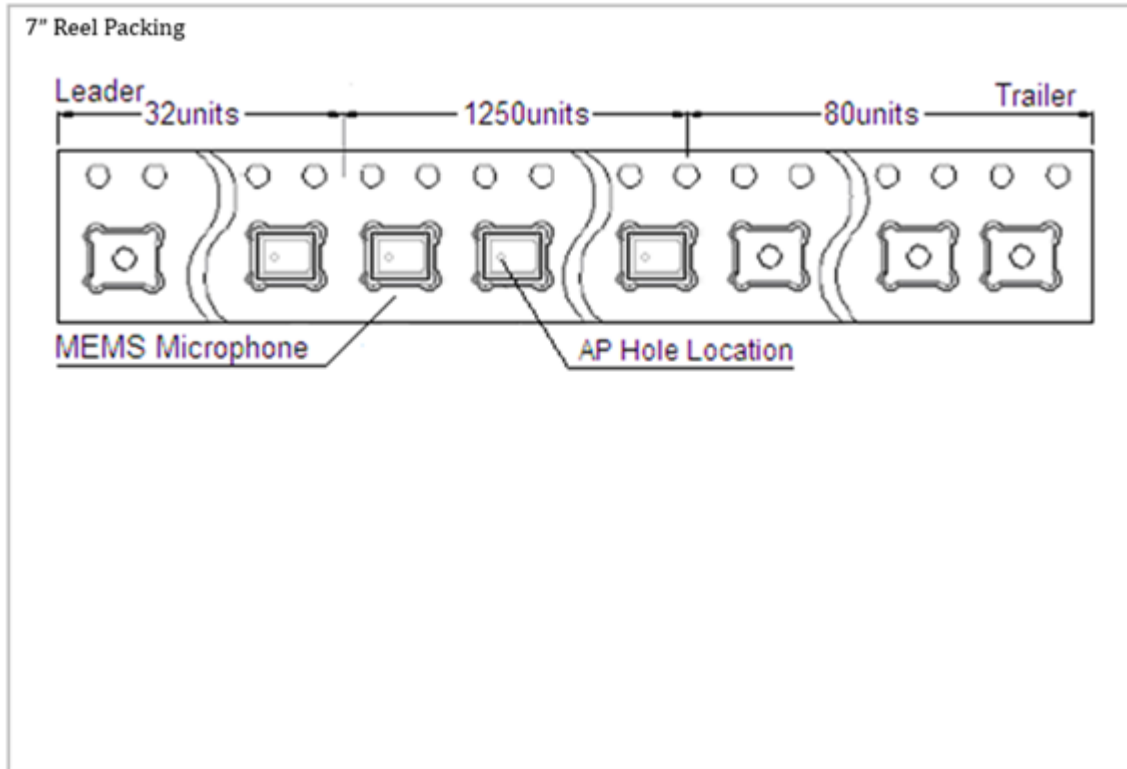
7" Reel

| Description | Symbol | Dimension (mm) | | |
|------------------------------|--------|----------------|---------|---------|
| | | Minimum | Nominal | Maximum |
| Reel Diameter | A | - | 180 | - |
| Hub Diameter | B | 58 | 60 | 62 |
| Hub Hole Diameter | C | 12.8 | 13 | 13.5 |
| Reel Width (Measured at hub) | D | - | 16 | 16.4 |
| Arbor Hole | E | 20.2 | - | - |
| Arbor Hw in mm Diameter | F | 12.8 | 13.0 | 13.5 |
| Arbor Slot Width | G | 1.5 | - | - |

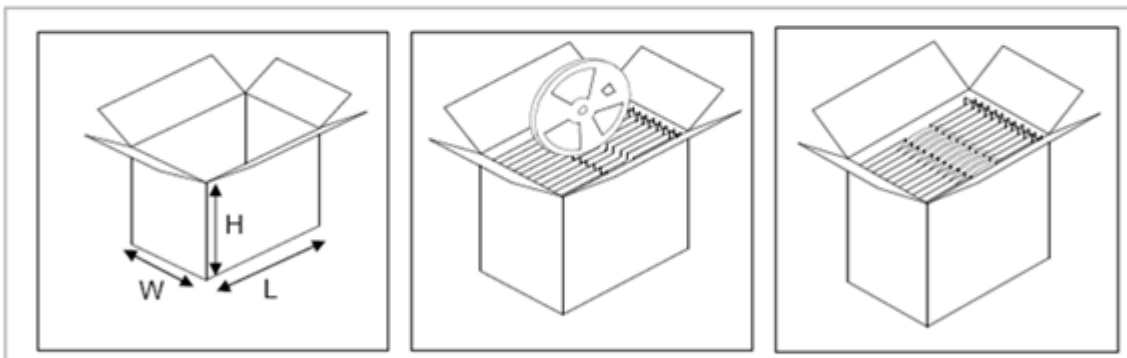
Notes:
 All dimensions are in millimeter (mm).

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 |
| A | Added Ultrasonic Response | 5/19/2020 |

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.