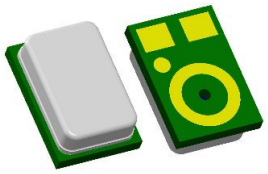
PUIaudio



Data Sheet	AMM-2738-4-B

The PUI Audio AMM-2738-4-B analog-output MEMS omni-directional microphone features a nominal -38dBV sensitivity, 64dB(A) signal-to-noise ratio, and bottom port.

Features:

- 1.85mm x 2.75mm package
- 0.9mm height
- -38dBV sensitivity
- 64dB (minimum) signal-to-noise ratio
- Omni-directional polar response

Specifications

V_{SUPP} = 1.8V_{DC}, f_{IN} = 1kHz, Acoustic Input = 94dBSPL (1Pa), 0 dBV = 1V @ 1Pa, unless otherwise stated.

Parameters	Values	Units
Typical Sensitivity	-38 ±1	dBV
Typical Signal-to-Noise Ratio 20Hz ≤ f ≤ 20kHz bandwidth A-weighted	64	dB
Typical Frequency Range	10 ≤ f ≤ 20,000	Hz
Maximum Total Harmonic Distortion	0.5	%
Typical Acoustic Overload Point (AOP) THD = 10%	128	dB SPL
Operating Voltage Range	1.65 ≤ V_S ≤ 3.6	V_{DC}
Maximum Power Supply Current	160	µA
Maximum Output Impedance	400	Ω
Directivity	Omnidirectional	-
Environmental Compliances	RoHS/Halogen Free	-
Typical Power Supply Rejection (PSR) 100mVpp Square Wave f_{NOISE} = 217Hz A-weighted	-95	dBV(A)
Typical Power Supply Rejection (PSRR) 200mVpp Square Wave 1kHz A-weighted	65	dB
Weight	<0.3	gm
Operating Temperature	-40 ≤ T_O ≤ 85	°C

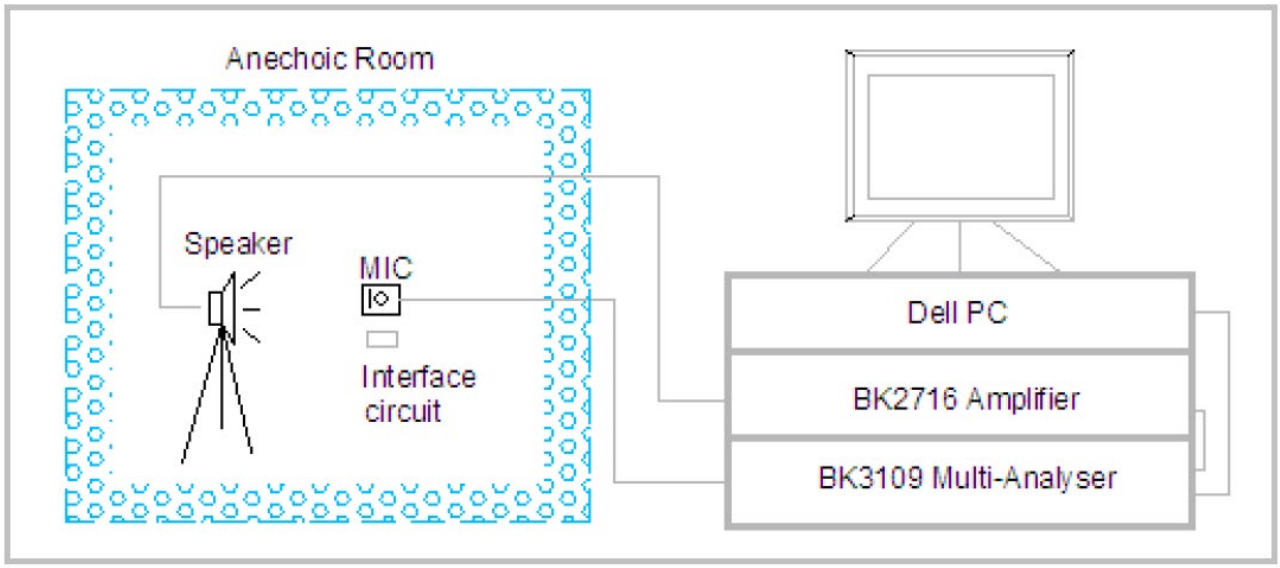
Storage Temperature	$-40 \leq T_S \leq 125$	°C
MSL (Moisture Sensitivity Level)*	1	-

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

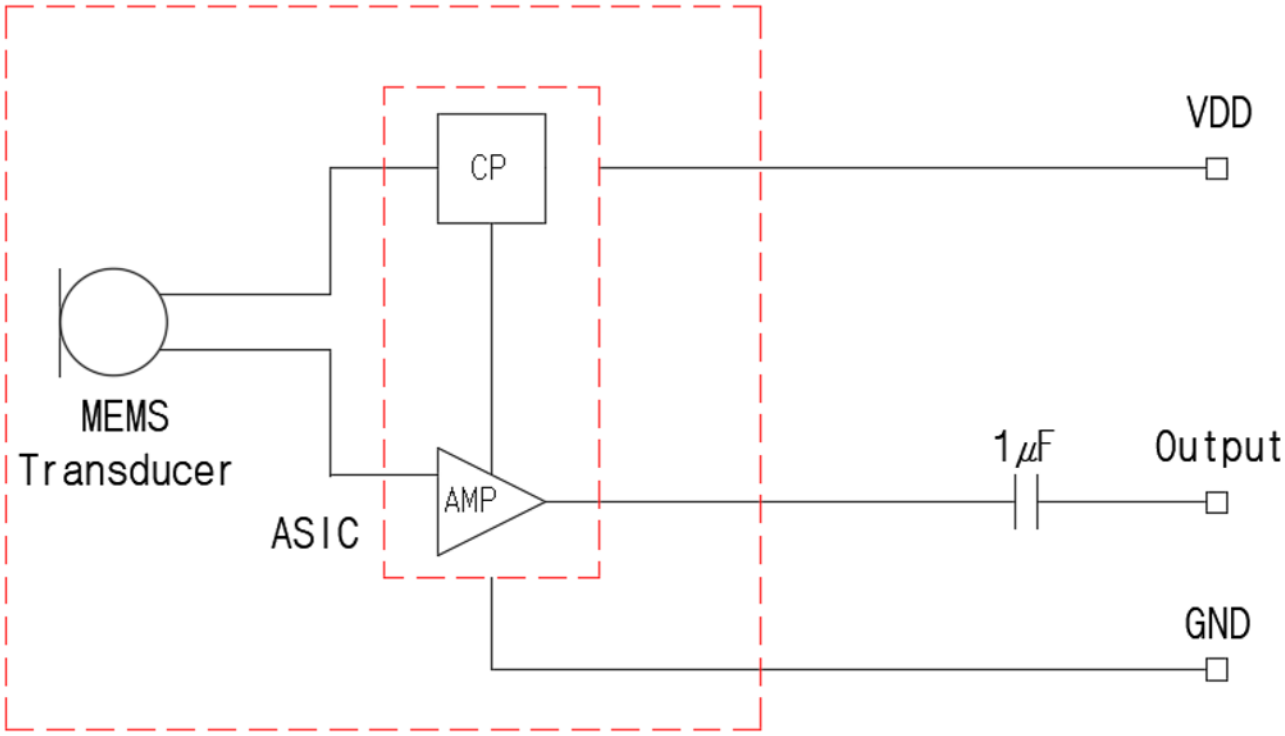
Absolute Maximum Ratings

Parameters	Values	Units
Maximum Voltage on VDD with respect to Ground	4	V_{DC}

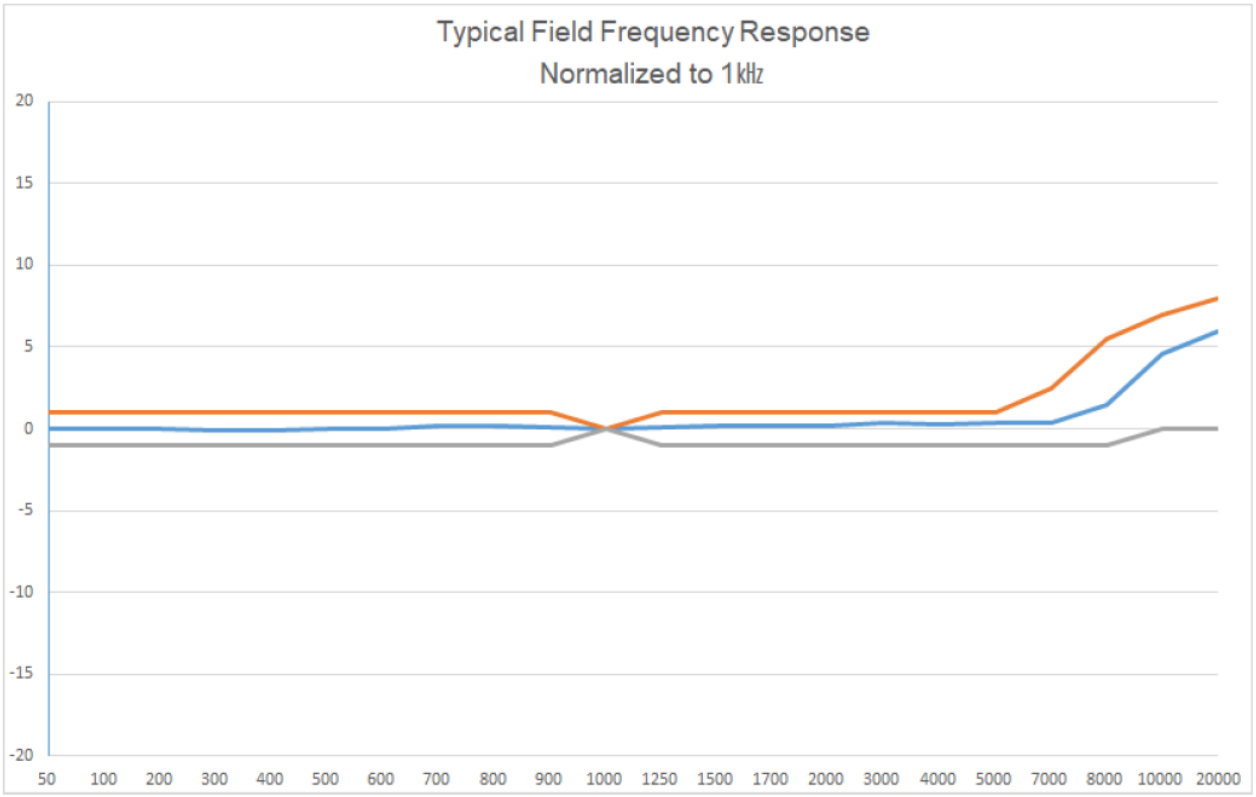
Measurement Method Acoustic input applied to the microphone has a 94dBSPL amplitude.



Recommended Drive Circuit



Typical Frequency Response



TEST CONDITIONS : 23±2℃, 65±20% R.H., Typical specifications are measured at VDD = 1.8V

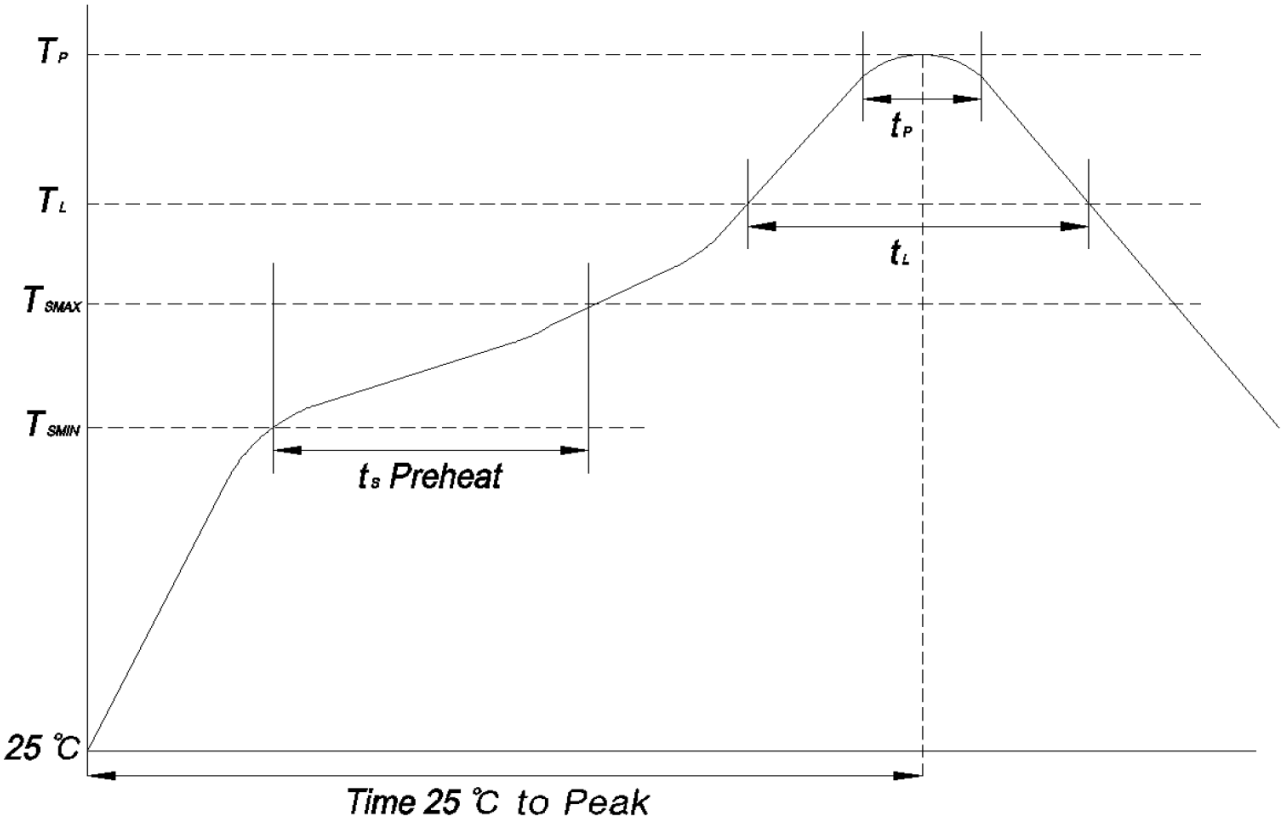
Speaker : 1Pa (94dBSPL@1㎑) at 50㎝ distance from a loud-speaker

Reliability Testing

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

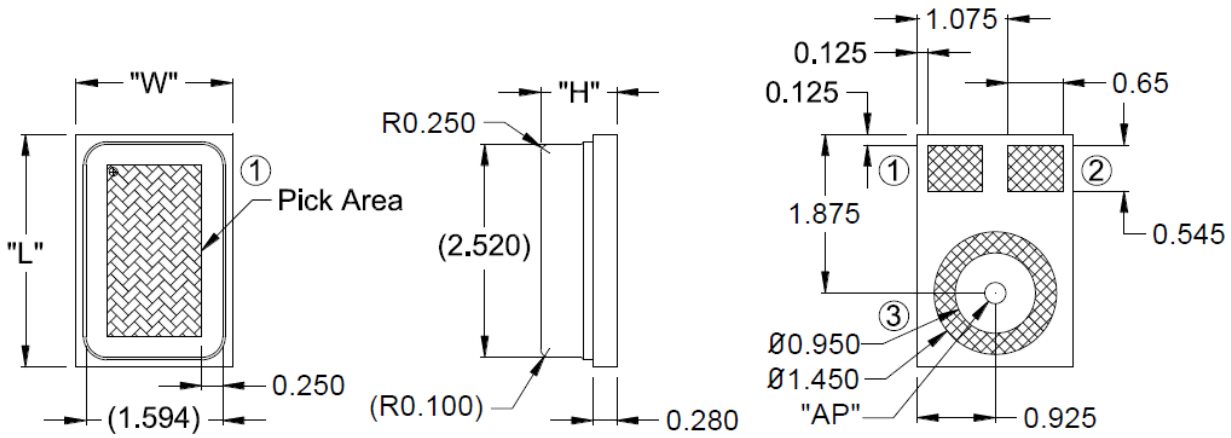
Type of Test	Test Specifications
Simulated Reflow (Without Solder)	Samples for qualification testing require 3 passes 260±5 ℃ reflow solder profiles. 2 hours of setting time is required between each reflow profile test.
Static Humidity	Precondition at +25℃ for 1 hour. Expose to +85℃ with 85% relative humidity for 120 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℃, 30 minutes at +85℃ 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 10Hz to 55 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.

Recommended Reflow Soldering Procedure



Profile Feature		Lead(Pb) Free Solder
Preheat	Temperature min.(T_{SMIN})	150 ℃
	Temperature max.(T_{SMAX})	200 ℃
	Time (t_S)	60-120 Seconds
Liquidus	Temperature (T_L)	217 ℃
	Time (t_L)	60-150 Seconds
Peak	Temperature (T_P)	260 ℃
	Time within 5 ℃ of actual peak temperature (t_P)	30 Seconds Max.
Ramp up	Average ramp up rate T_{SMAX} to T_P	3 ℃ / Second Max.
Ramp down	Average ramp down rate T_P to T_{SMAX}	6 ℃ / Second Max.
Time 25 ℃ to Peak temperature		8 Minutes Max.

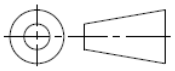
Dimensions (±0.15mm tolerance)



Top view Side view Bottom view

Item	Dimension	Tolerance
Length(L)	2.75	±0.10㎜
Width(W)	1.85	±0.10㎜
Height(H)	0.90	±0.10㎜
Acoustic Port	Ø0.25	±0.05㎜

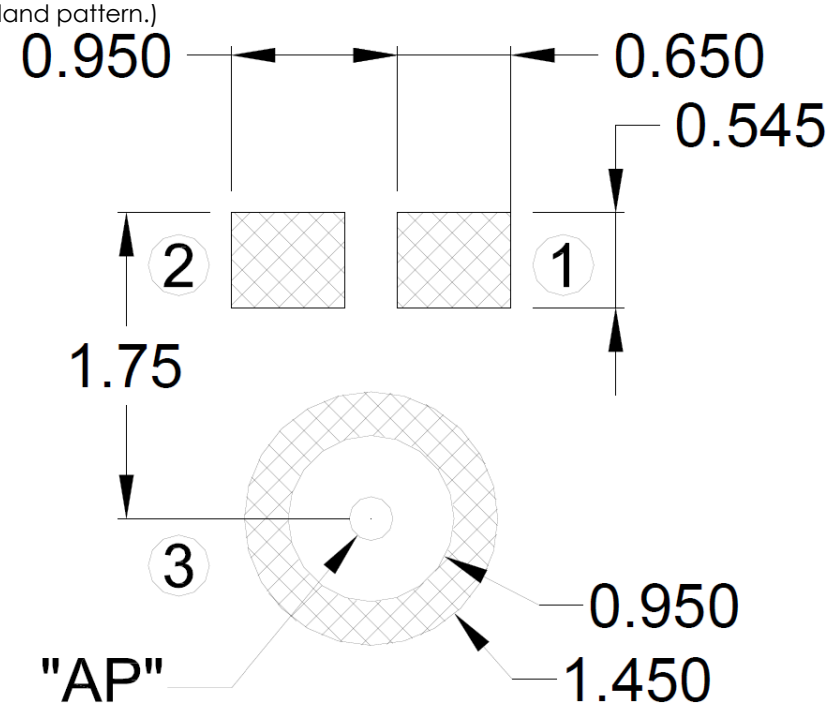
Note : Pick Area only extends to 0.25㎜ of any edge or hole unless otherwise specified.



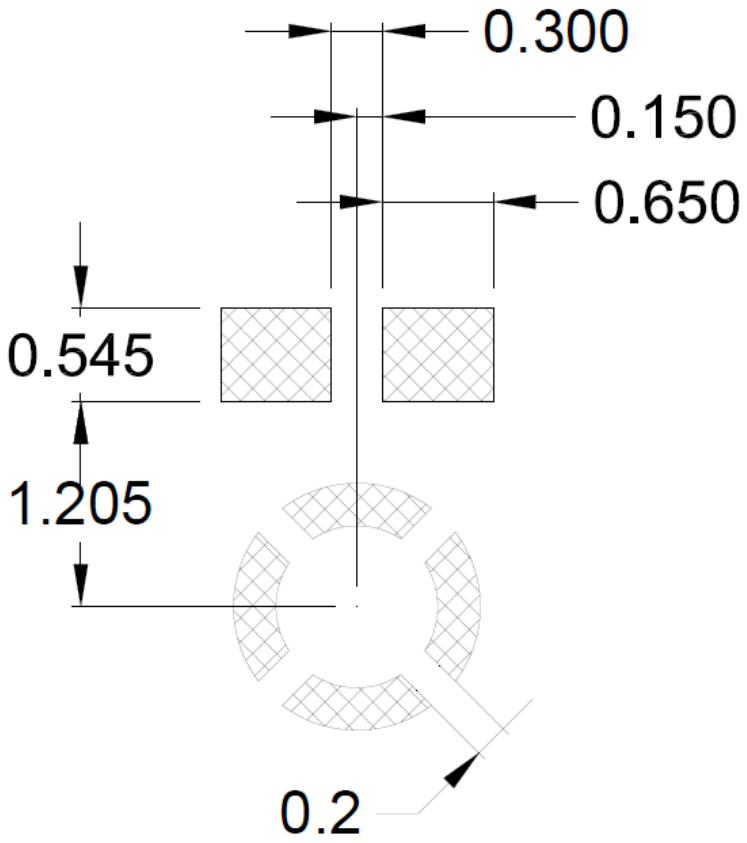
Dimension are in millimeters unless otherwise specified. Tolerance : ±0.15㎜

Pin 1	Pin 2	Pin 3
VDD	Output	Ground

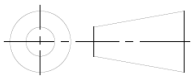
PCB Land and Stencil Pattern (This land pattern is advisory only and its use or adaptation is entirely voluntary. PUI Audio disclaims all liability of any kind associated with the use, application, or adaptation of this land pattern.)



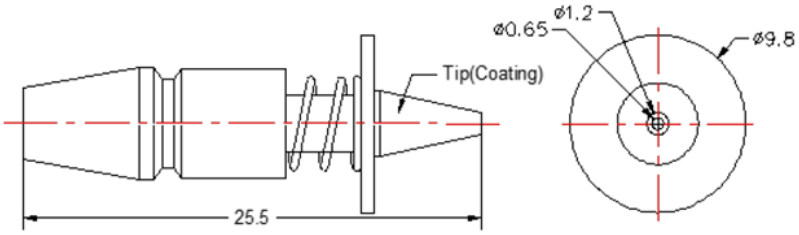
Recommended Stencil Pattern



Pick and Place Tool Recommendations

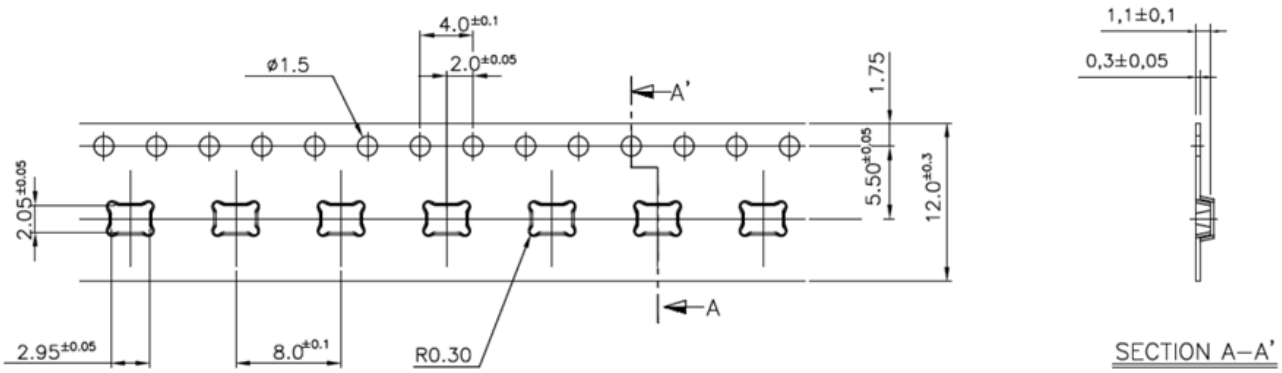


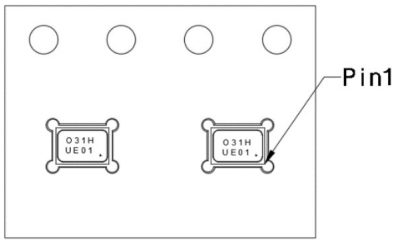
Note : Pick Area only extends to 0.25㎜ of any edge or hole unless otherwise specified.



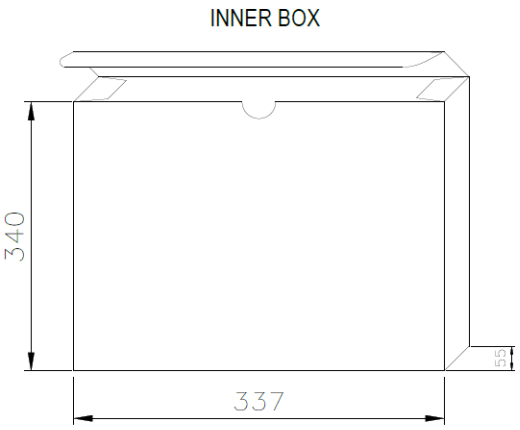
Recommended Nozzle Model : CN065
Interner Diameter : Φ 0.65mm
Externer Diameter : Φ1.2mm

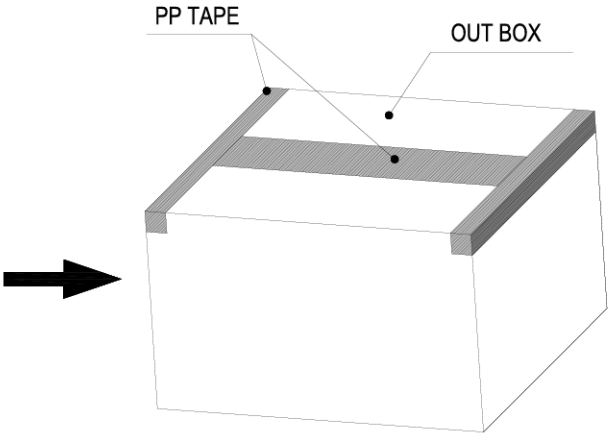
Packaging





Reel Diameter	Quantity Per Reel
13”	5,900





5,900PCS X 2BAG = 11,800PCS

CARTON SIZE : 330(W) X 350(L) X 355(H)

QUANTITY : 70,800 PCS

Specifications Revisions

Revision	Description	Date	Approval
A	Datasheet released from Engineering	04/21/2025	KH

Note:

1. Unless otherwise specified:
   A. All dimensions are in millimeters.
   B. Default tolerances are ±0.5mm and angles are ±3°.
2. Specifications subject to change or withdrawal without notice.