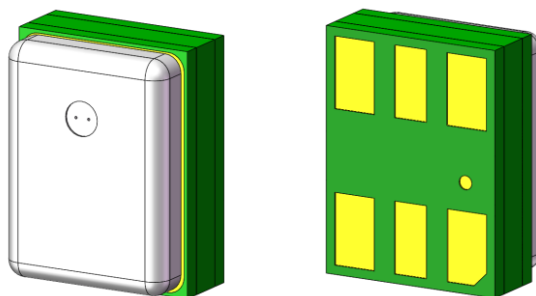


Specification of MEMS Microphone

RoHS Compliance & Halogen Free

LinkMems P/N: LVA3526T293-OFA03



Designed by	Checked by	Approved by
Kevin	Thomas	Hary

Customer Approval

Approved by:_____



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MEMS Microphone

1. Introduction

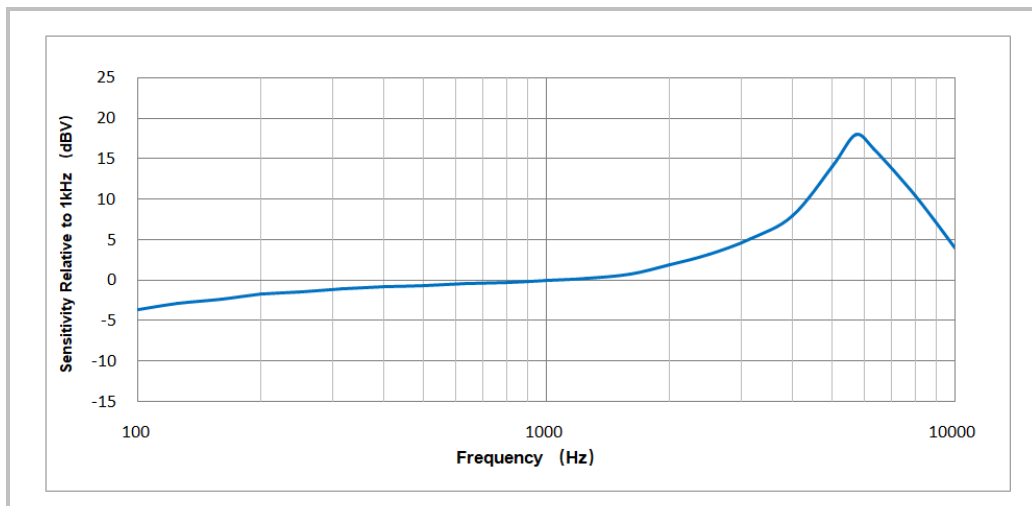
LVA3526T293-FA03 is a high-performance bone conduction sensor optimized for picking up the wearer's own voice. It enhances the ability of picking up your own voice via bone vibration in noisy environment. It's packaged for surface mounting and high temperature reflow assembly.

2. Electrical Characteristics

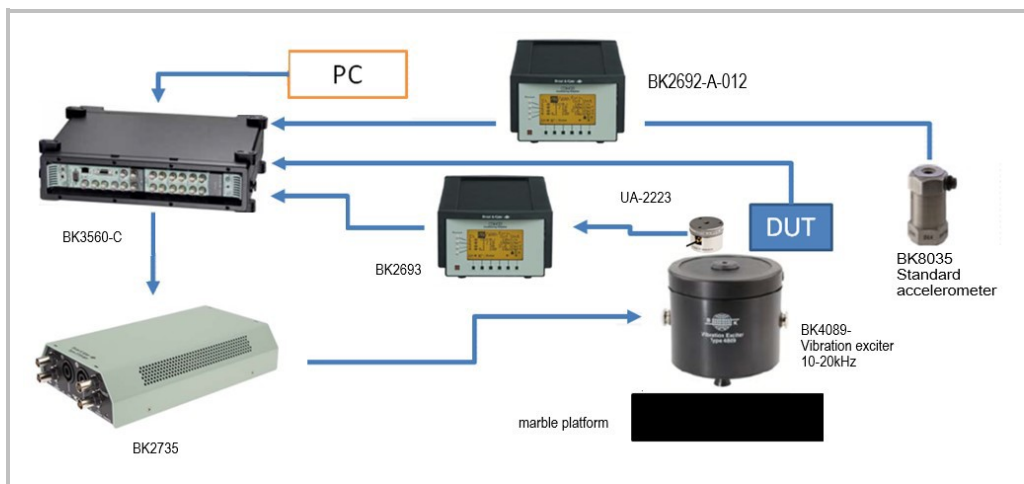
Test Condition: $V_{DD}=2.7V$, $23\pm 2^{\circ}C$, $55\pm 10\%R.H.$, unless otherwise specified.

Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Sensitivity Range	S	$f=1kHz, g_{in}=1g$ $0dB=1V/g$, Z-direction	-32	-29	-26	dBV/g
Output Impedance	Z_{out}	$F=1kHz$			300	Ω
Current Consumption	I				200	μA
S/N Ratio	SNR	A-Weighted 100-4kHz		73		dB(A)
DC output	V _{dc}			1.15		V
Operating Voltage	V_{DD}		1.6	2.7	3.6	V
Acoustic Sensitivity Loss	ASL	94dB SPL@100Hz	45	50		dB
		94dB SPL@1kHz	40	45		dB
Acceleration level	AL	THD <10% @1kHz		4		g
Peak Frequency	F_{peak}		4.5	5.5	6.5	kHz

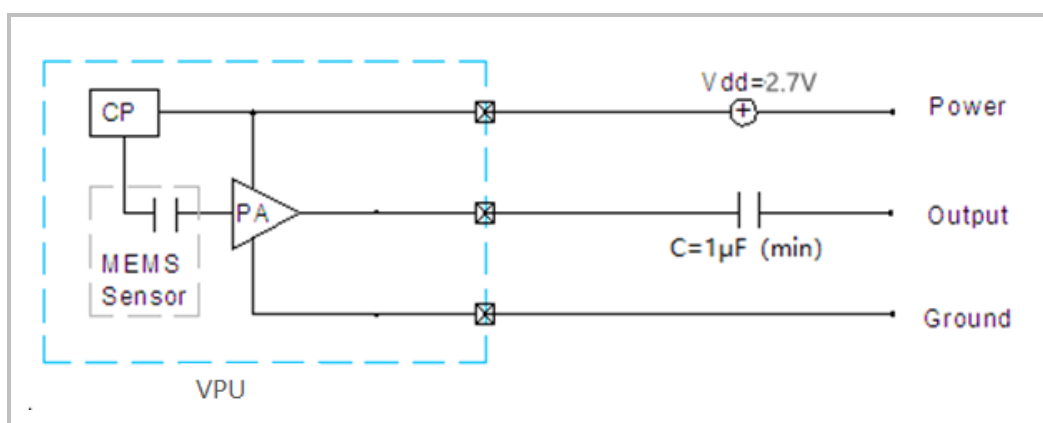
3. Frequency Response Curve



4. Test Setup (Sensitivity Test in Anechoic Room)



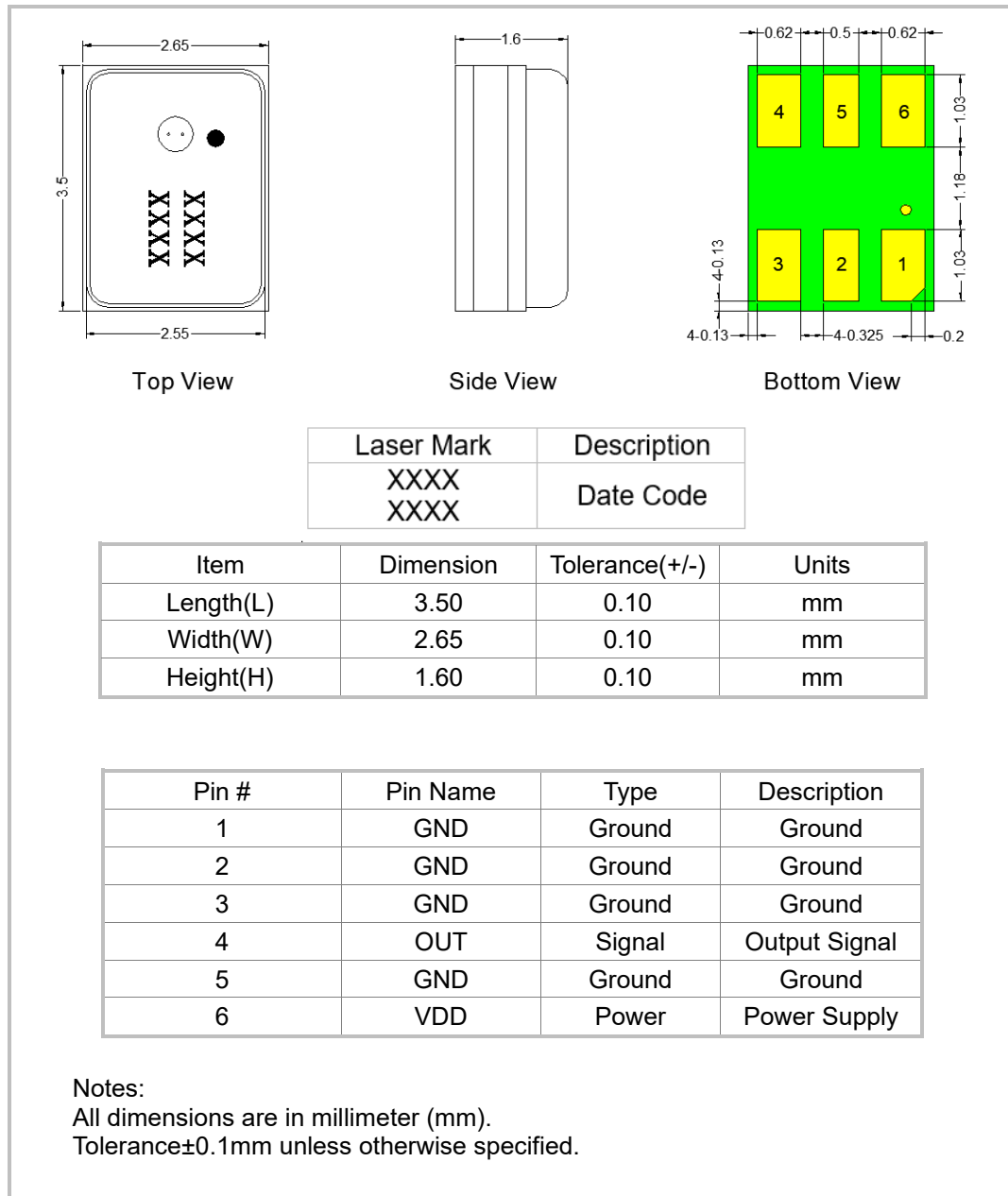
5. Measurement Circuit



6. Mechanical Characteristics

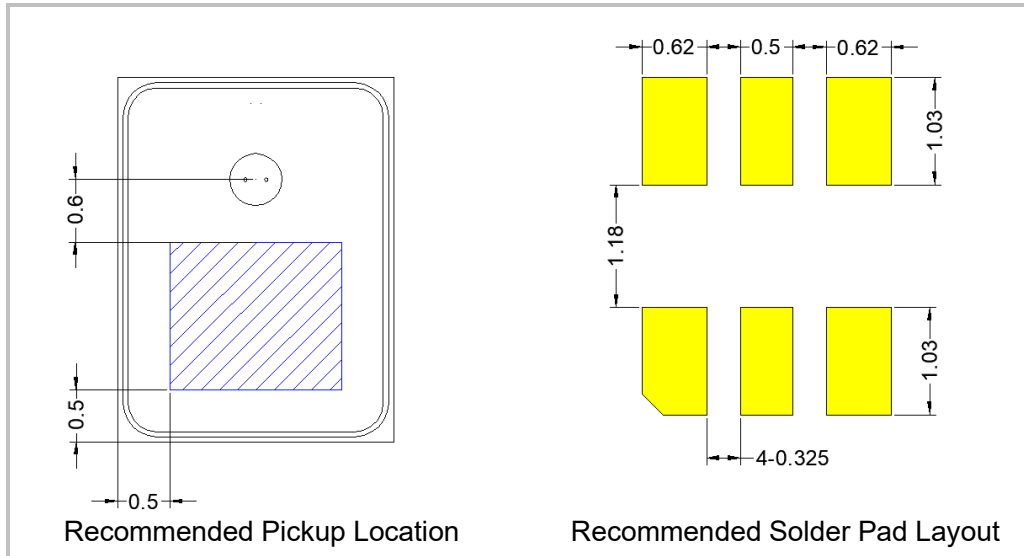
6.1 Weight: Less than 0.05g

6.2 Appearance Drawing(unit: mm)



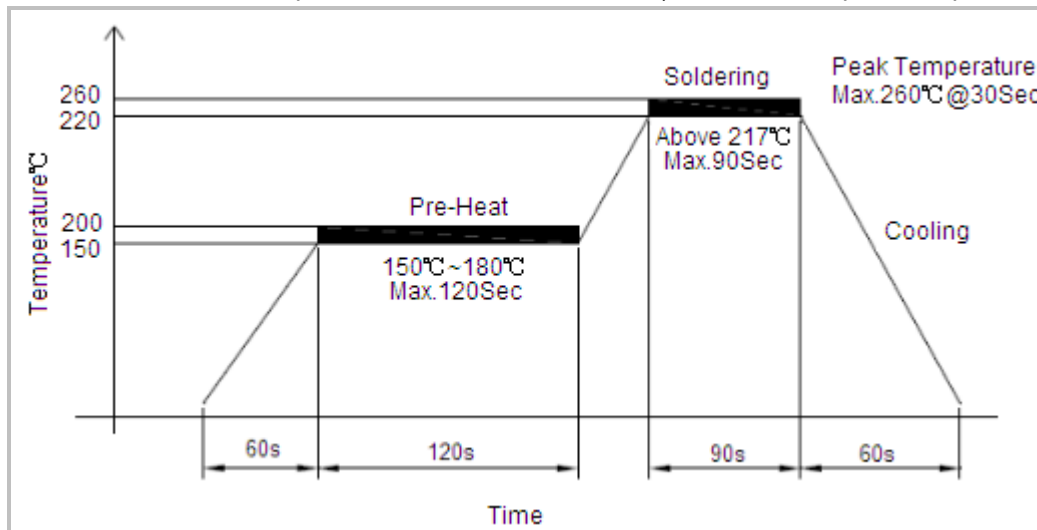
7. Application

7.1 Pickup Tool Pick Location& PCB Solder Pad Layout



7.2 Recommended Reflow Process Condition

Recommend reflow profile, solder reflow $\leq 260^{\circ}\text{C}$ (for 30s Max of peak temperature).



Important Notes

In order to minimize device damage:

1. During reflow process, it is forbidden to block the product's vent holes.
2. After reflow, use Mylar film or glue to seal the vent holes.
3. Do not apply high temperature treatment (such as $> 100^{\circ}\text{C}$) after vent holes sealed
4. Do not wash or clean the boards after the reflow process.
5. Do not apply the airflow which pressure over 0.3MPa blow into the port hole within a distance of less than 5 cm.
6. Do not exposed to ultrasonic processing or cleaning.
7. Do not pull a vacuum over port hole of the microphone.

7.3 Storage Condition

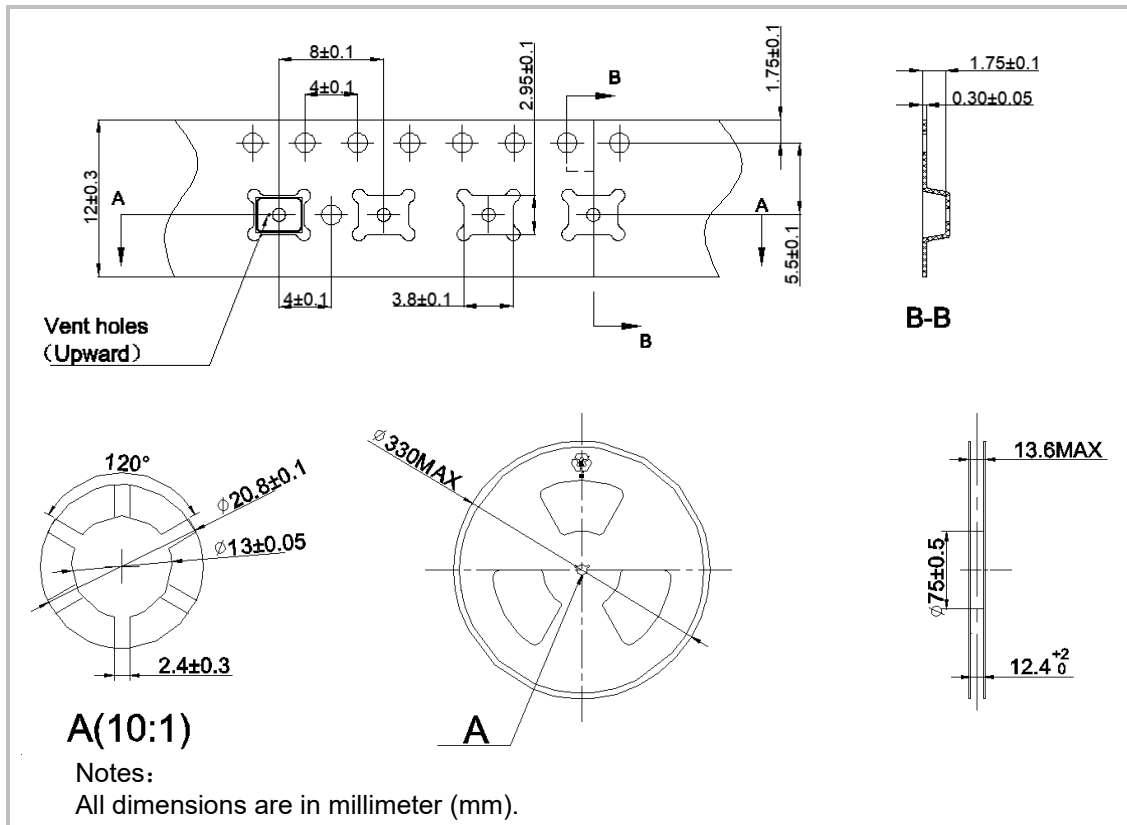
7.3.1 Storage temperature range: $-40 \sim +100^{\circ}\text{C}$, and humidity is less than 75%.

7.3.2 Operating temperature range: $-40 \sim +85^{\circ}\text{C}$.

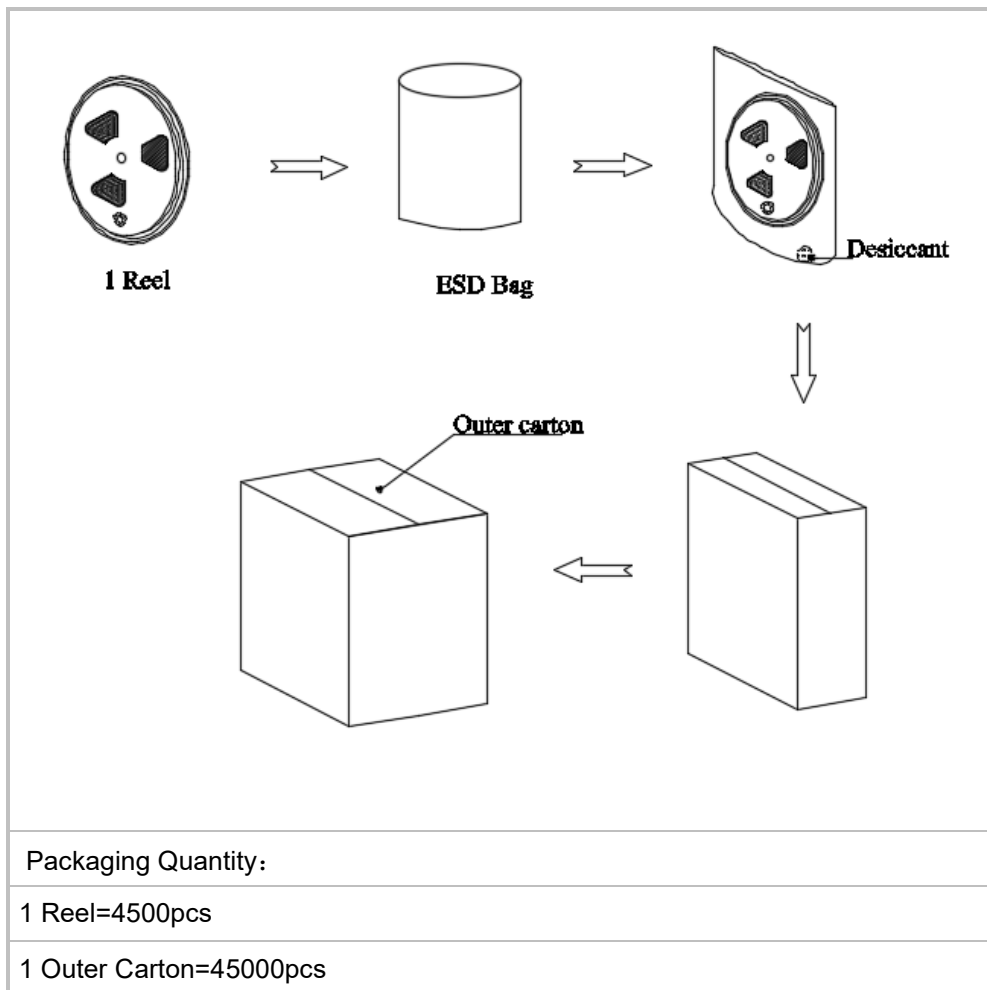
7.3.3 MSL (moisture sensitivity Level) is Class 1.

8. Packaging

8.1 Tape & Reel Specification



8.2 Packaging Information



9. Reliability Test

The samples should be placed in the room with $23\pm 2^{\circ}\text{C}$, $55\pm 10\%\text{R.H.}$ for 2 hours at least before final measurement, unless otherwise specified.

Item	Detail	Standard
Simulated Reflow (Without Solder)	Samples for qualification testing require 3 times $260\pm 5^{\circ}\text{C}$ reflow solder profiles. 2 hours of setting time is required between each reflow profile test.	$\pm 3\text{ dB}$
Static Humidity	Precondition at $+25^{\circ}\text{C}$ for 1 hour. Then expose to $+85^{\circ}\text{C}$ with 85% relative humidity for 240 hours.	$\pm 3\text{ dB}$
Temperature Shock	Each cycle shall consist of 30 minutes at -40°C , 30 minutes at $+125^{\circ}\text{C}$ with 5 minutes transition time. Test duration is for 30 cycles, starting from cold to hot temperature.	$\pm 3\text{ dB}$
ESD Sensitivity	According to MIL-STD-883G, Method 3015.7 for Human Body Model. Discharge Position: I/O pins Charge Voltage: $\pm 2000\text{V}$ Discharge Network: 100pF & 1500Ω	$\pm 3\text{ dB}$
Random Vibrations	Vibrate randomly along three perpendicular directions for 30 minutes in each direction, 4 cycles from 20Hz ~ 2000Hz with a peak acceleration 20g .	$\pm 3\text{ dB}$
Mechanical Shock	Subject samples to half sine shock pulses ($3000\text{g}\pm 15\%$ for 0.3ms) in each direction, totally 18 shocks.	$\pm 3\text{ dB}$
High temperature Storage	Microphone unit must maintain sensitivity after storage at $+105^{\circ}\text{C}$ for 240 hours.	$\pm 3\text{ dB}$
Low temperature Storage	Microphone unit must maintain sensitivity after storage at -40°C for 240 hours.	$\pm 3\text{ dB}$
Drop Test	The test was repeated in six directions for 3 times, Dropped from 1.5m height on to a steel surface, total 18 times and inspected for mechanical damage.	$\pm 3\text{ dB}$

Specification Revisions

Revision	Description	Approved	Date
1.1	New Version Released	Hary	20/11/2024
1.2	Update Electrical Characteristics	Hary	29/11/2024