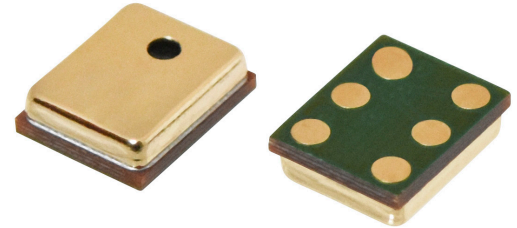




## MODEL: CMM-4737DT-26186-TR | DESCRIPTION: MEMS MICROPHONE

### FEATURES

- digital (PDM)
- small package
- reflow solder compatible
- omnidirectional



### ELECTRICAL

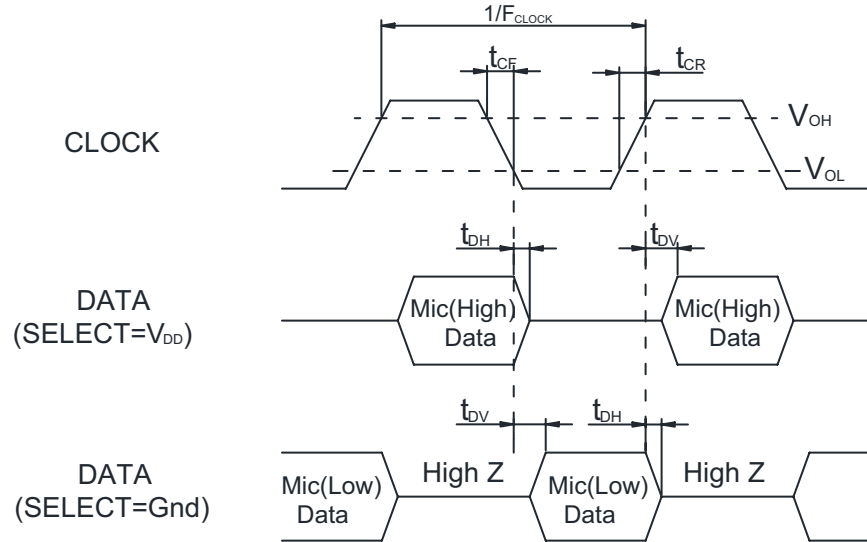
parameter	conditions/description	min	typ	max	units
directivity	omnidirectional				
sensitivity (S)	at 94 dB SPL, 1 kHz	-27	-26	-25	dB FS
supply voltage (V <sub>DD</sub> )		1.6	2.0	3.6	V
current consumption (I <sub>DD</sub> )				0.75	mA
sensitivity reduction	V <sub>DD</sub> = 3.6 ~ 1.6 V		-0.5		dB FS
frequency (f)		100		10,000	Hz
signal to noise ratio [S/N]	at 94 dB SPL, 1 kHz [A-weighted]		57		dBA
total harmonic distortion [THD]	at 94 dB SPL, 1 kHz		0.2		%
acoustic overload point [AOP]	at 10% THD, 1 kHz		120		dB SPL
output impedance [Z <sub>out</sub> ]	at 1 kHz			300	Ω
power supply rejection [PSR]	100 mVp-p square wave at 217 Hz [A-weighted]		-90		dB FS

### DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
sleep current (I <sub>SLEEP</sub> )	F <sub>CLOCK</sub> < 1 kHz		3	4	μA
fall-asleep time	F <sub>CLOCK</sub> < 1 kHz			50	μs
wake-up time	F <sub>CLOCK</sub> ≥ 1.024 MHz			52	ms
short circuit current (I <sub>SC</sub> )	grounded data pin		1	10	mA
output load (C <sub>LOAD</sub> )				100	pF
data format	1-Bit PDM				
clock frequency (F <sub>CLOCK</sub> )		1.024	2.4	3.25	MHz
clock duty cycle (F <sub>DC</sub> )		40		60	%
clock rise time (t <sub>CR</sub> )				10	ns
clock fall time (t <sub>CF</sub> )				10	ns
logic input high (V <sub>IH</sub> )	I <sub>OUT</sub> = 1 mA	0.75xV <sub>DD</sub>			V
logic input low (V <sub>IL</sub> )	I <sub>OUT</sub> = 1 mA			0.25xV <sub>DD</sub>	V
logic output high (V <sub>OH</sub> )	I <sub>OUT</sub> = 1 mA	0.9xV <sub>DD</sub>			V
logic output low (V <sub>OL</sub> )	I <sub>OUT</sub> = 1 mA			0.1xV <sub>DD</sub>	V
delay time for valid data (t <sub>OV</sub> )		18		40	ns
delay time for high z (t <sub>OH</sub> )		0		15	ns

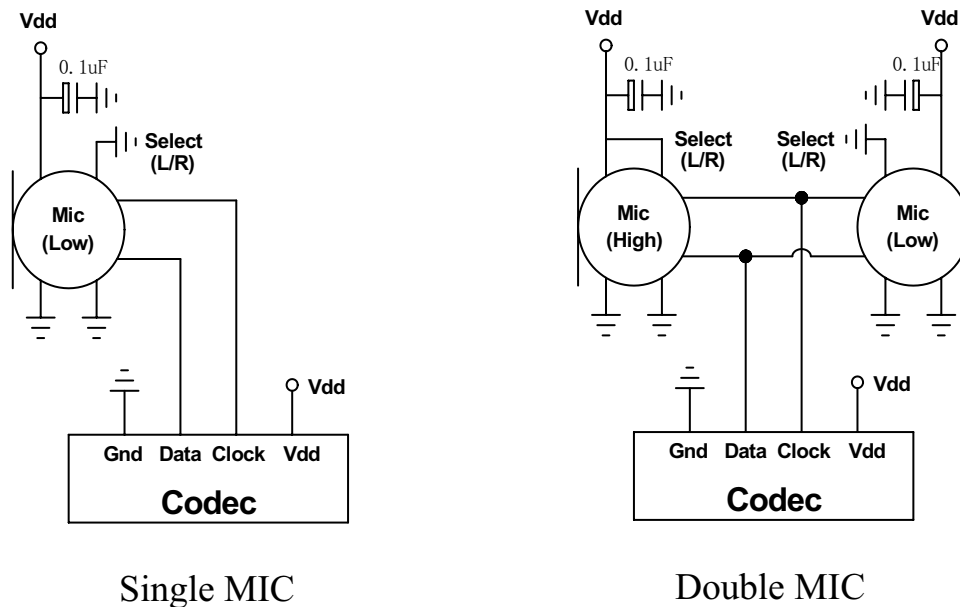
Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V<sub>DD</sub> = 2.0 V, F<sub>CLOCK</sub> = 2.4 MHz, unless otherwise noted.

## TIMING CHARACTERISTICS



Microphone	Select (L/R)	Asserts Data On	Latch Data On
Mic (High)	V <sub>DD</sub>	rising clock edge	falling clock edge
Mic (Low)	GND	falling clock edge	rising clock edge

## RECOMMENDED INTERFACE CIRCUIT



## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		100	°C
storage temperature	in packaging	-40		85	°C
RoHS	yes				

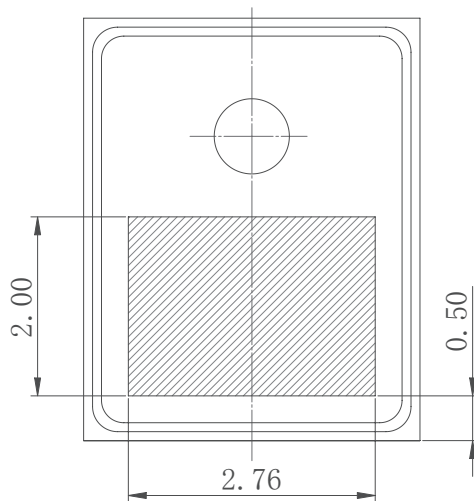
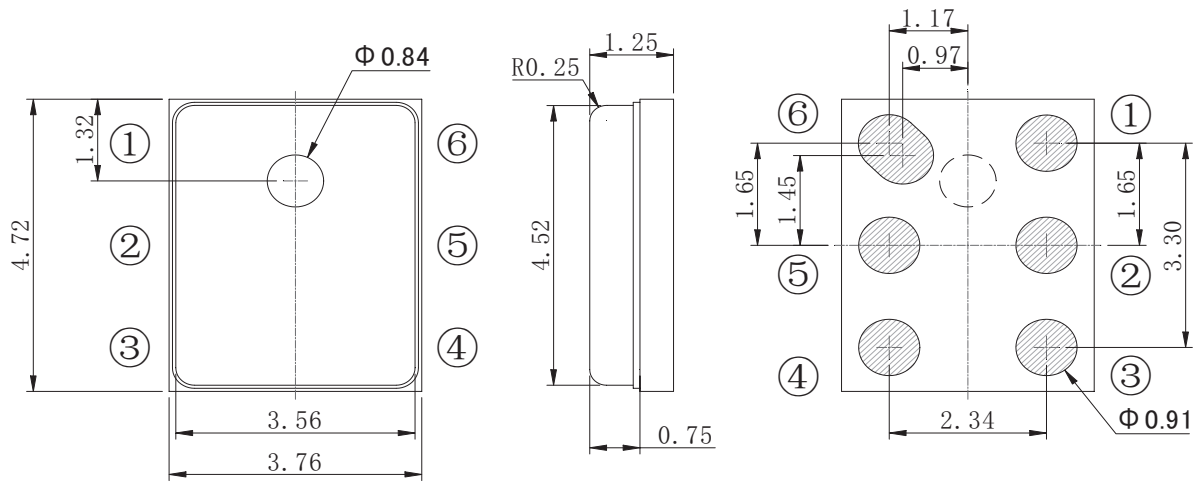
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	4.72 x 3.76 x 1.25				mm
acoustic port	top				
terminals	surface mount				
weight			0.025		g

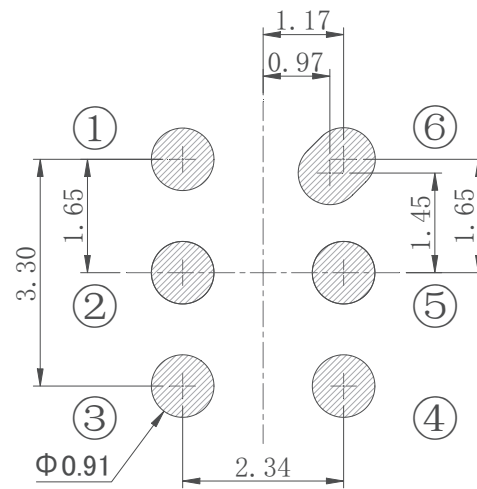
## MECHANICAL DRAWING

units: mm  
tolerance: ±0.1 mm

TERMINAL CONNECTIONS	
TERM.	FUNCTION
1	GND
2	L/R
3	GND
4	CLOCK
5	DATA
6	VDD

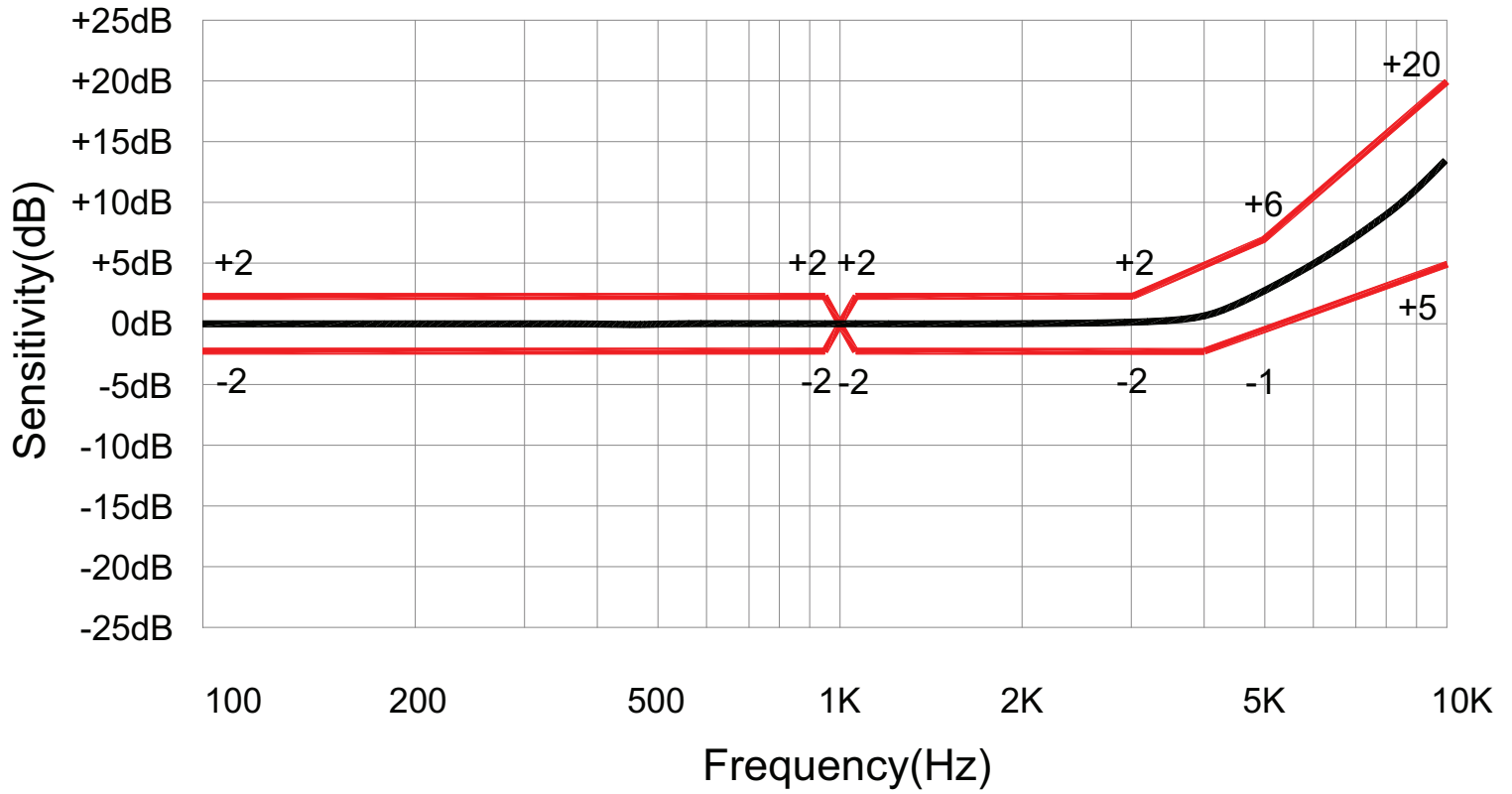


Recommended Vacuum Nozzle Pickup  
Top View



Recommended PCB Layout  
Top View

## FREQUENCY RESPONSE CURVE

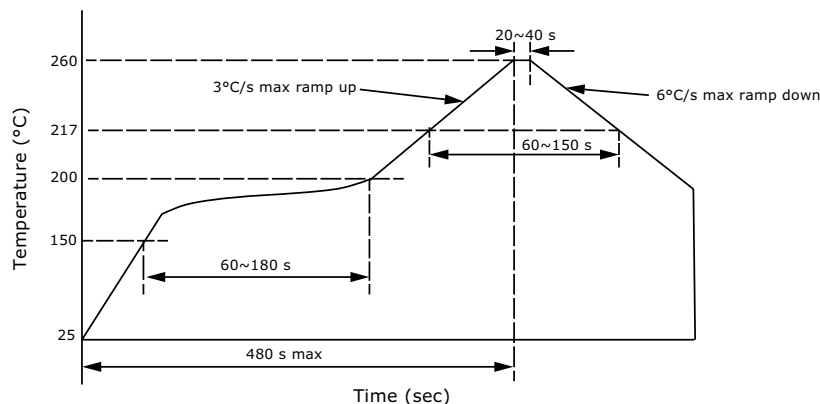


## SOLDERABILITY

parameter	conditions/description	min	typ	max	units
reflow soldering	see reflow profile			260	°C

Note:

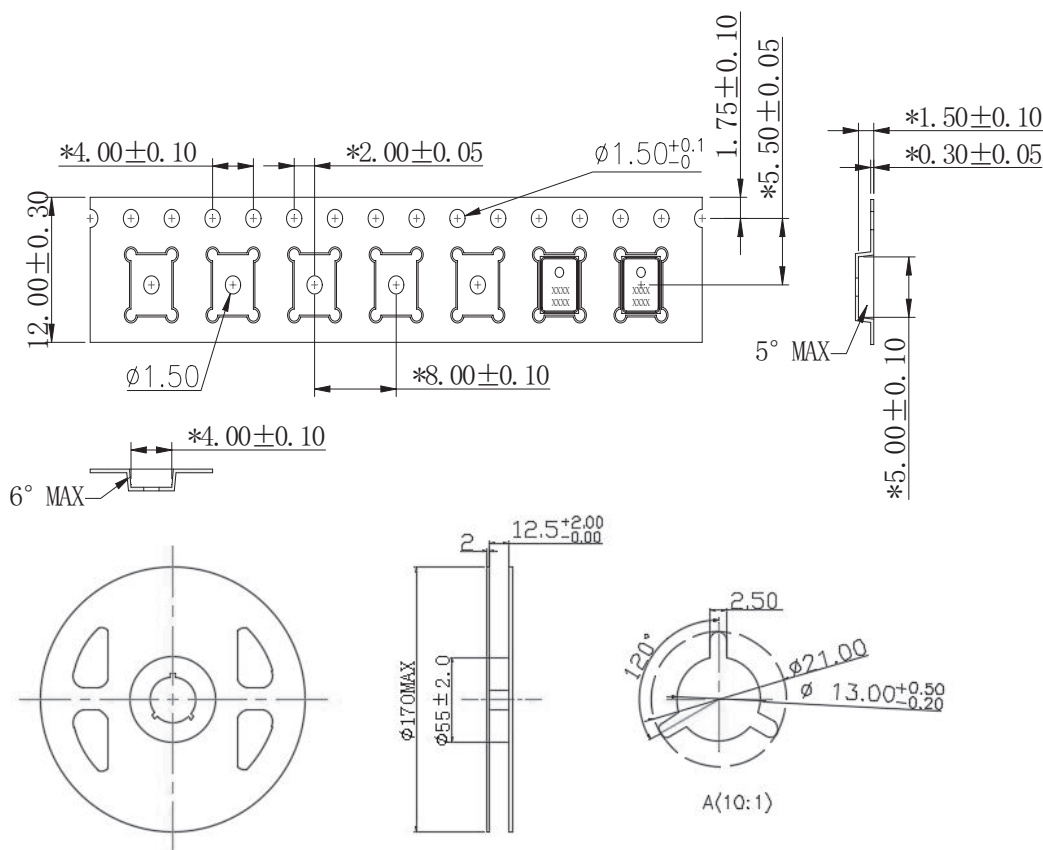
1. Vacuuming over acoustical hole is not allowed.
2. Not suitable for wash process.
3. Not recommended to exceed 3 reflow cycles.



## PACKAGING

parameter	conditions/description	min	typ	max	units
reel storage <sup>4</sup>	at relative humidity <75%	-40		85	°C
MSL	Class 1				
reel size	Ø170 mm max				
reel QTY	1,000 pcs per reel				

Note: 4. Recommended storage period no more than 1 year. Floor life (out of bag) no more than 4 weeks.



## REVISION HISTORY

rev.	description	date
1.0	initial release	11/12/2018
1.01	brand update	01/16/2020
1.02	logo, datasheet style update	08/05/2022
1.03	internal chip update	06/24/2024

The revision history provided is for informational purposes only and is believed to be accurate.



CUI Devices offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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