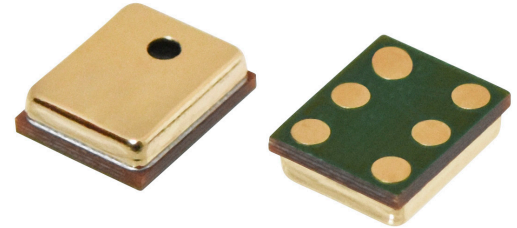



MODEL: CMM-4737DT-26386-TR | **DESCRIPTION:** MEMS MICROPHONE

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	-29	-26	-23	dB FS
supply voltage [V _{DD}]		1.6	2.0	3.6	V
current consumption [I _{DD}]				0.75	mA
sensitivity reduction	V _{DD} = 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 _{out}]	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 _{SLEEP}]	F _{CLOCK} < 1 kHz		3	4	μA
fall-asleep time	F _{CLOCK} < 1 kHz			50	μs
wake-up time	F _{CLOCK} ≥ 1.024 MHz			52	ms
short circuit current [I _{SC}]	grounded data pin		1	10	mA
output load [C _{LOAD}]				100	pF
data format	1-Bit PDM				
clock frequency [F _{CLOCK}]		1.024	2.4	3.25	MHz
clock duty cycle [F _{DC}]		40		60	%
clock rise time [t _{CR}]				10	ns
clock fall time [t _{CF}]				10	ns
logic input high [V _{IH}]	I _{OUT} = 1 mA	0.75xV _{DD}			V
logic input low [V _{IL}]	I _{OUT} = 1 mA			0.25xV _{DD}	V
logic output high [V _{OH}]	I _{OUT} = 1 mA	0.9xV _{DD}			V
logic output low [V _{OL}]	I _{OUT} = 1 mA			0.1xV _{DD}	V
delay time for valid data [t _{OV}]		18		40	ns
delay time for high z [t _{OH}]		0		15	ns

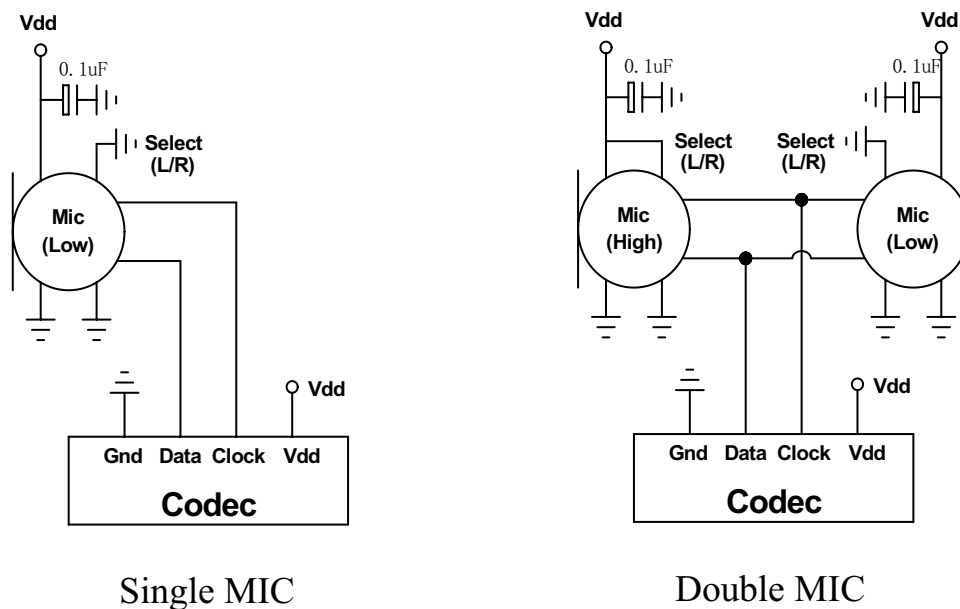
Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 2.0 V, F_{CLOCK} = 2.4 MHz, unless otherwise noted.

TIMING CHARACTERISTICS



Microphone	Select (L/R)	Asserts Data On	Latch Data On
Mic (High)	V _{DD}	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				

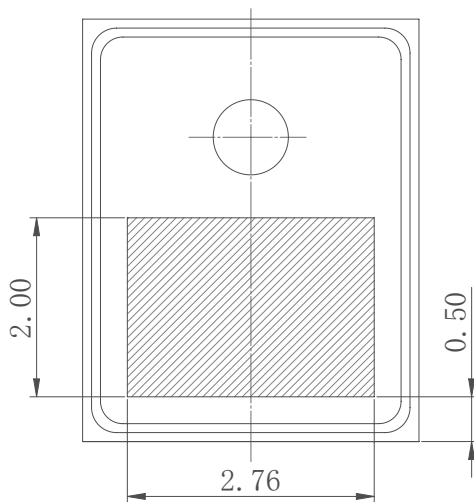
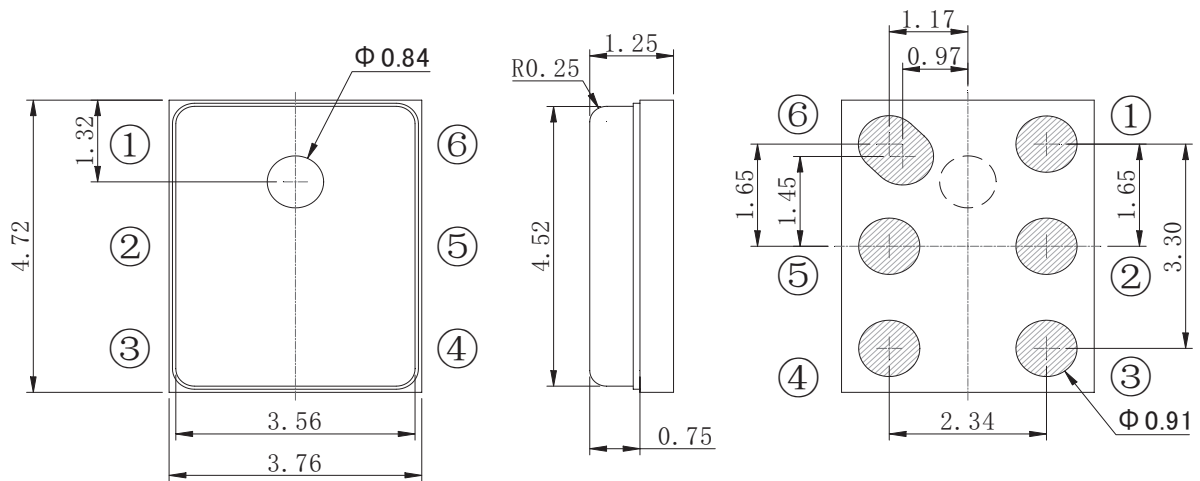
MECHANICAL

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

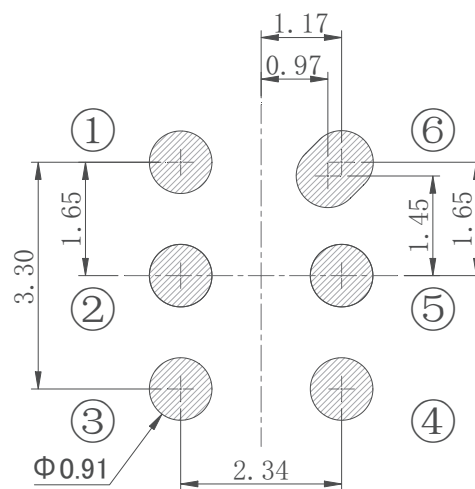
MECHANICAL DRAWING

units: mm
tolerance: ±0.1 mm

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

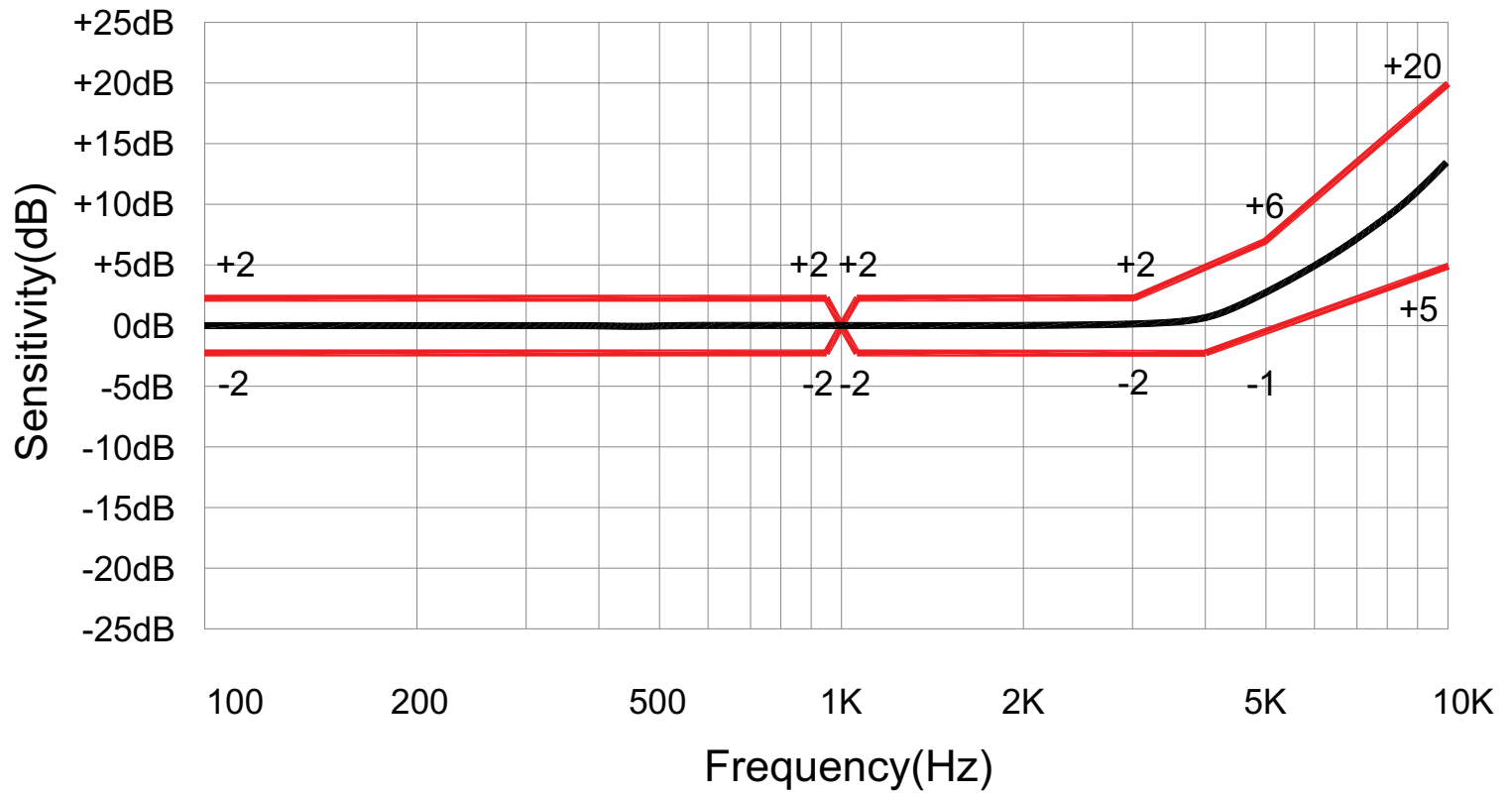


Recommended Vacuum Nozzle Pickup
Top View



Recommended PCB Layout
Top View

FREQUENCY RESPONSE CURVE

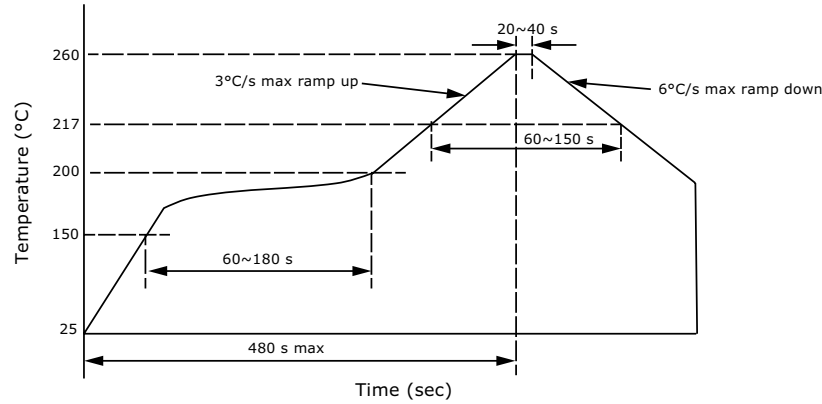


SOLDERABILITY

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

Note:

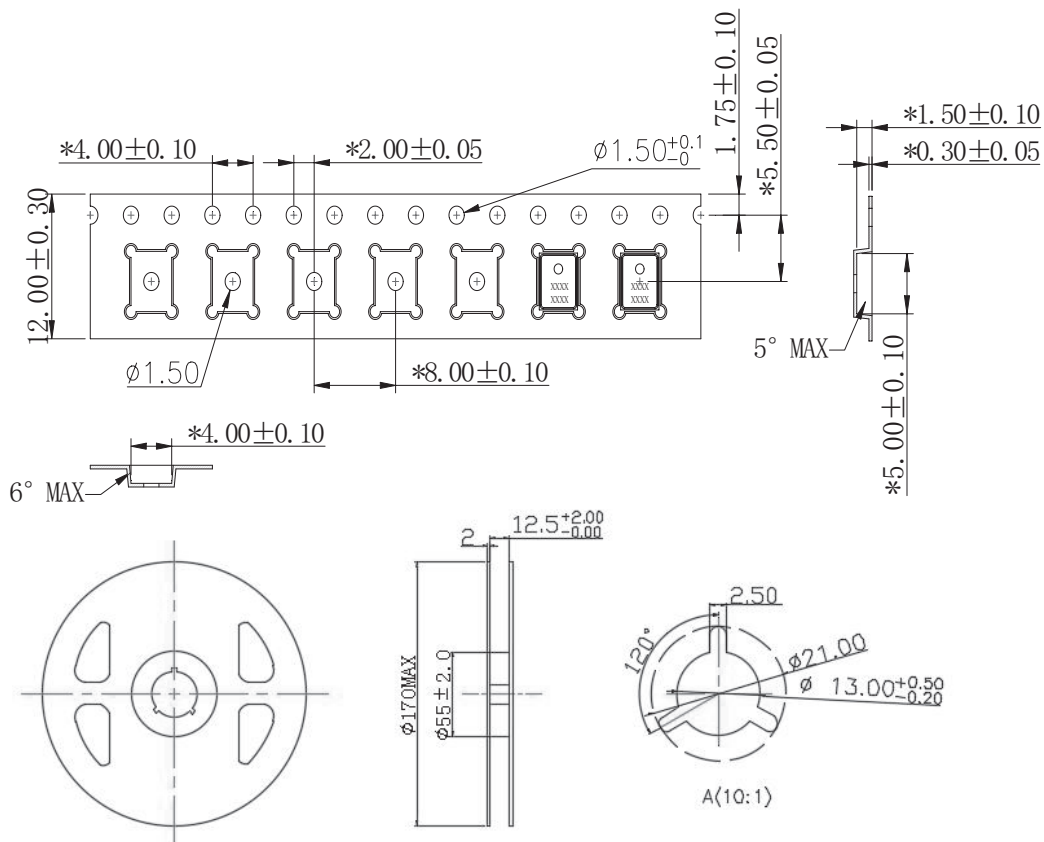
1. Vacuuming over acoustical hole is not allowed.
2. Not suitable for wash process.
3. Not recommended to exceed 3 reflow cycles.



PACKAGING

parameter	conditions/description	min	typ	max	units
reel storage ⁴	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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