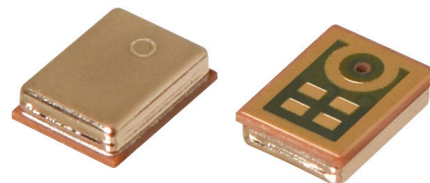



**MODEL:** CMM-4030DB-26154-TR | **DESCRIPTION:** MEMS MICROPHONE

**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> )			0.54		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)		64		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 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> )		1.0	2.4	3.2	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/output low (V <sub>IOL</sub> )	I <sub>OUT</sub> = 1 mA	-0.30		0.35xV <sub>DD</sub>	V
logic input/output high (V <sub>IOH</sub> )	I <sub>OUT</sub> = 1 mA	0.65xV <sub>DD</sub>		V <sub>DD</sub> +0.3	V
delay time for valid data (t <sub>DV</sub> )		18		60	ns
delay time for high z (t <sub>DH</sub> )		0		16	ns

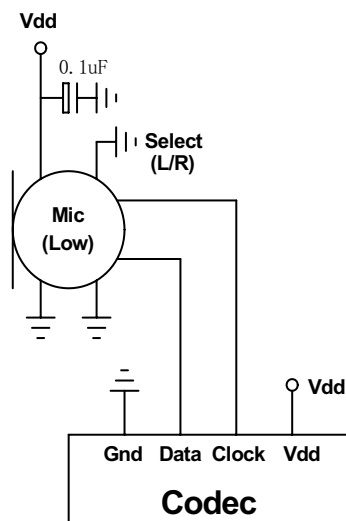
Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V<sub>DD</sub> = 2.0 V, F<sub>CLOCK</sub> = 2.4 MHz, unless otherwise noted.

## 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



Single MIC



Double MIC

## ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		105	°C
storage temperature	in packaging	-40		85	°C
RoHS	yes				

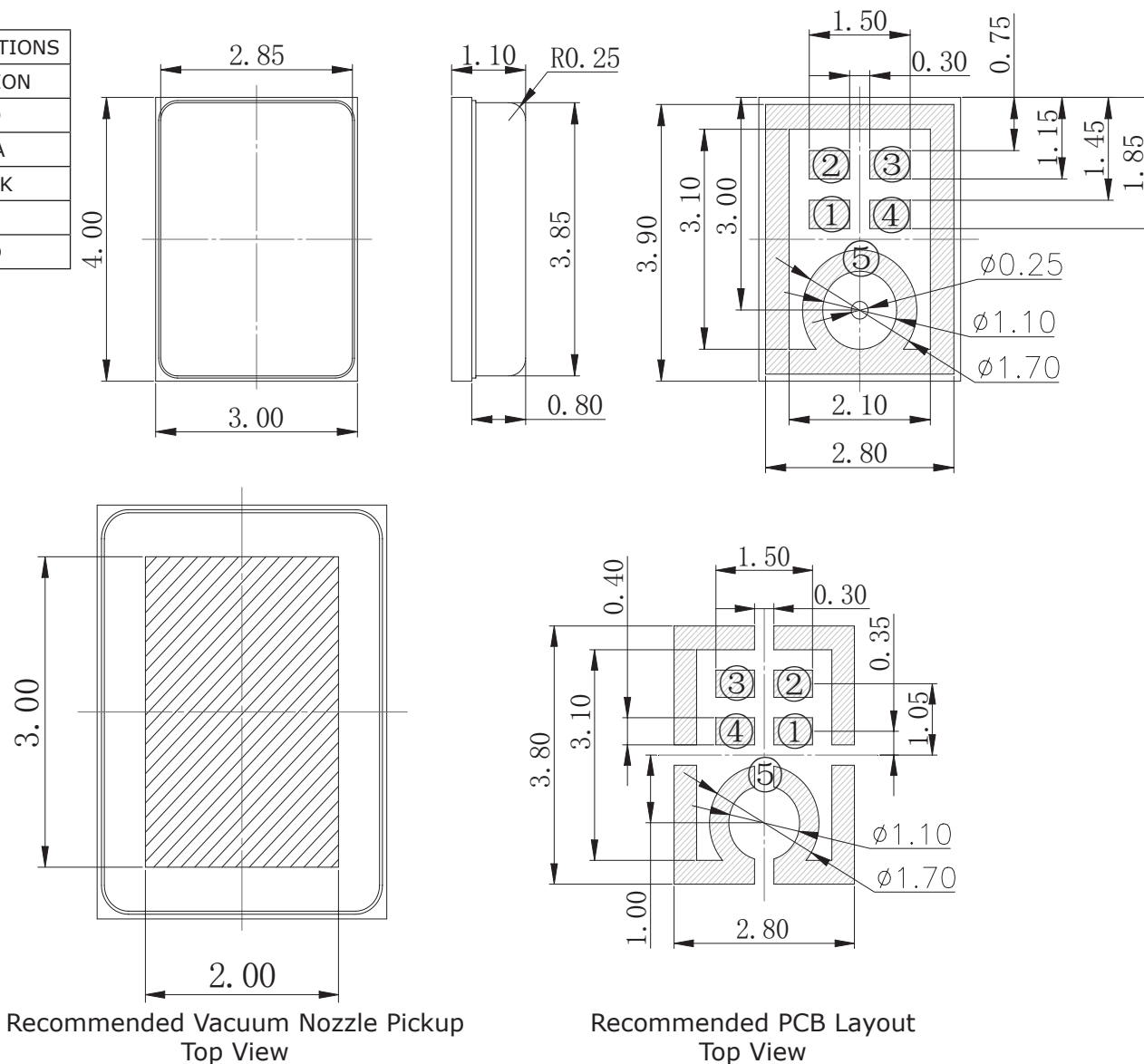
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	4.00 x 3.00 x 1.10				mm
acoustic port	bottom				
terminals	surface mount				
weight			0.024		g

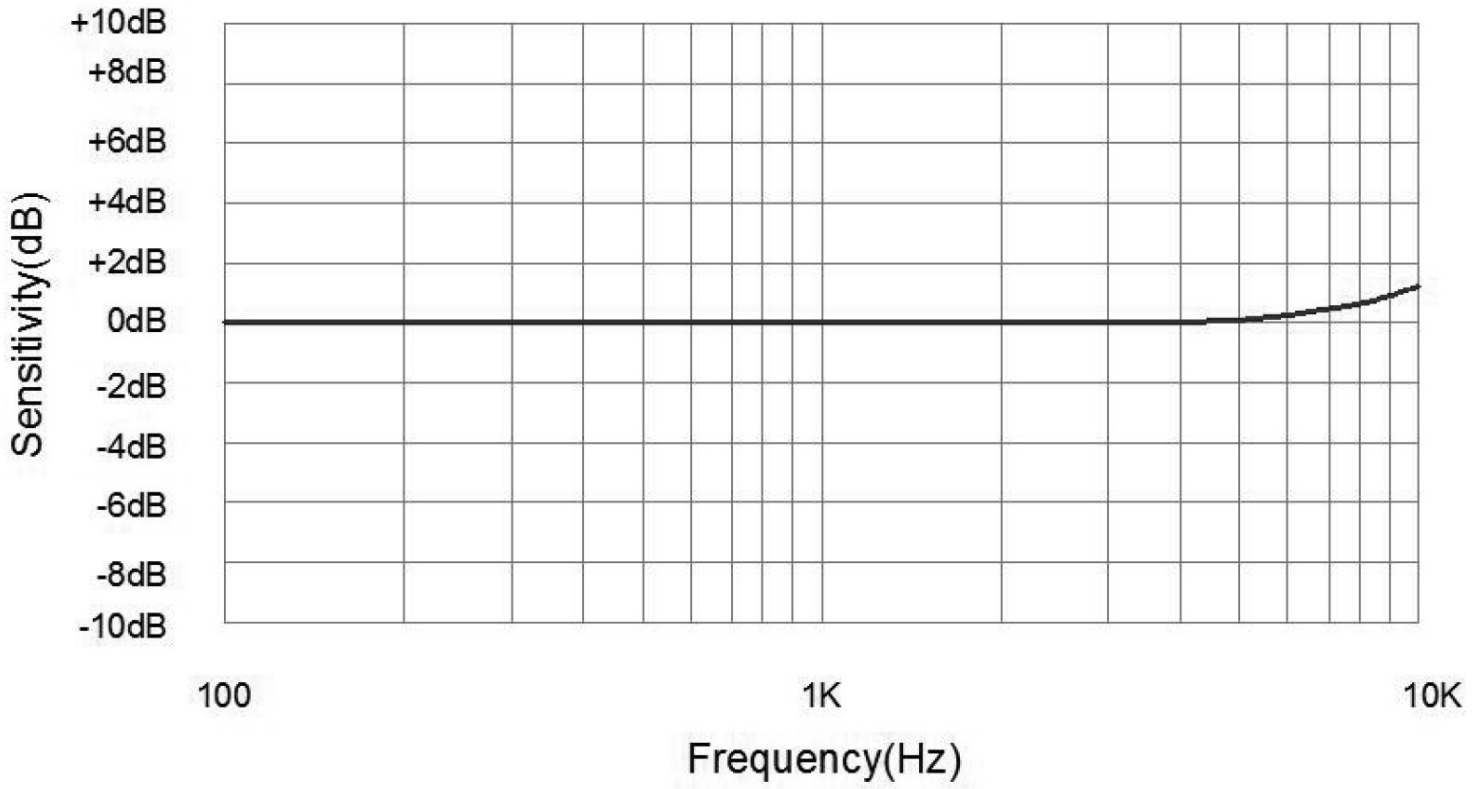
## MECHANICAL DRAWING

units: mm  
tolerance: ±0.1 mm

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



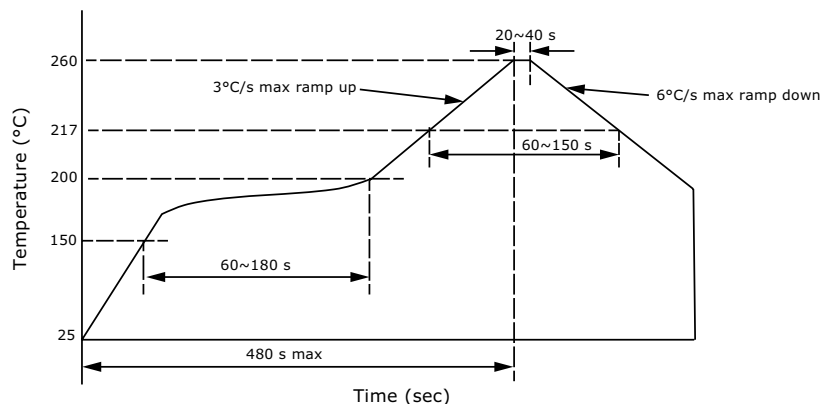
## FREQUENCY RESPONSE CURVE



## SOLDERABILITY

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

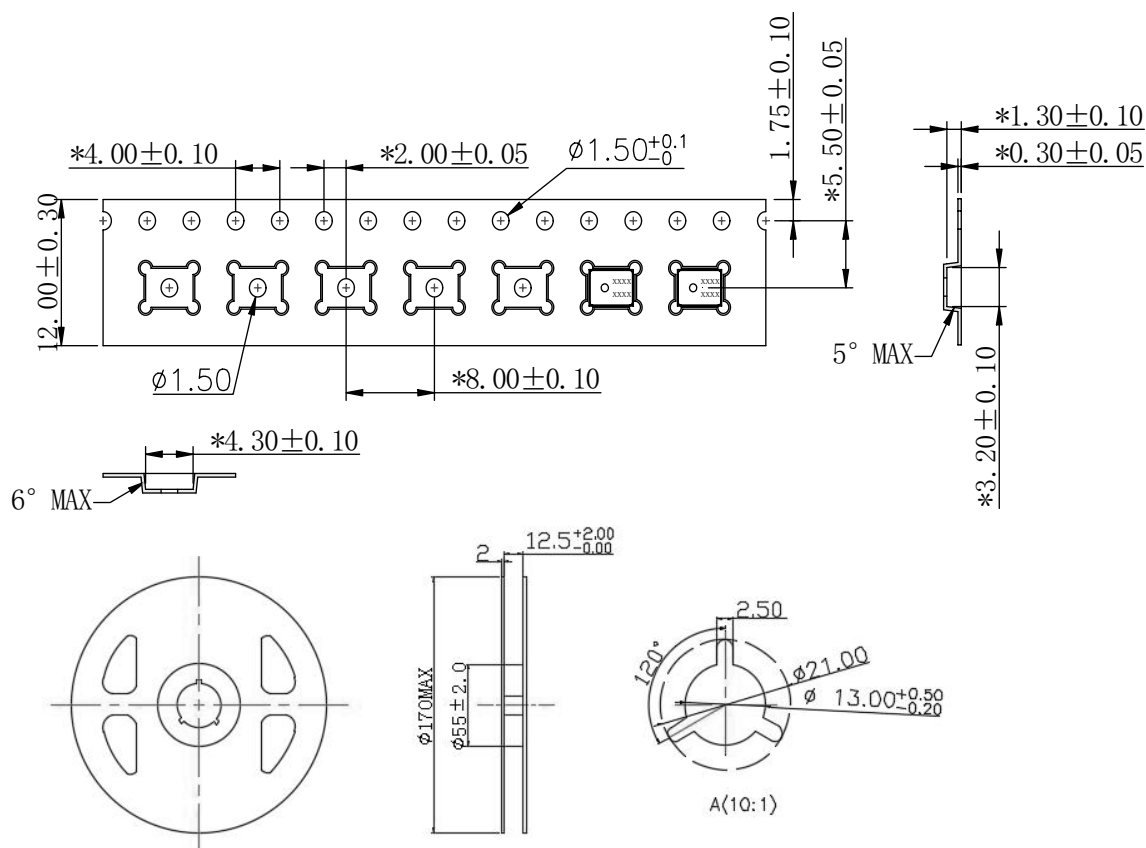
- Note:
1. Vacuuming over acoustical hole is not allowed.
  2. Not suitable for wash process.
  3. Not recommended to exceed 5 reflow cycles.



## 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

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rev.	description	date
1.0	initial release	11/12/2018

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



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