

**MODEL:** CMM-4020DT-261L-TR | **DESCRIPTION:** MEMS MICROPHONE**FEATURES**

- top port
- digital PDM
- low-power mode

**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 _{DD}]		1.70		3.60	V
current consumption [I _{DD}]	low-power mode	230	330	450	μA
	normal mode	550	650	870	μA
signal to noise ratio [S/N]	BW = 20 Hz~20 kHz [A-weighted]				
	low-power mode	62	64	66	dBA
	normal mode	62	64	66	dBA
total harmonic distortion [THD]	at 94 dB SPL, 1 kHz	0.05	0.10	0.50	%
acoustic overload point [AOP]	at 10% THD, 1 kHz	118	120	122	dB SPL
phase	low-power mode: 500~8 kHz @ 94 dB	-5	0	5	deg
	normal mode: 500~10 kHz @ 94 dB	-5	0	5	deg
power supply rejection [PSR]	100 mVp-p square wave @ 217 Hz [A-weighted]	-90	-80	-70	dB FS

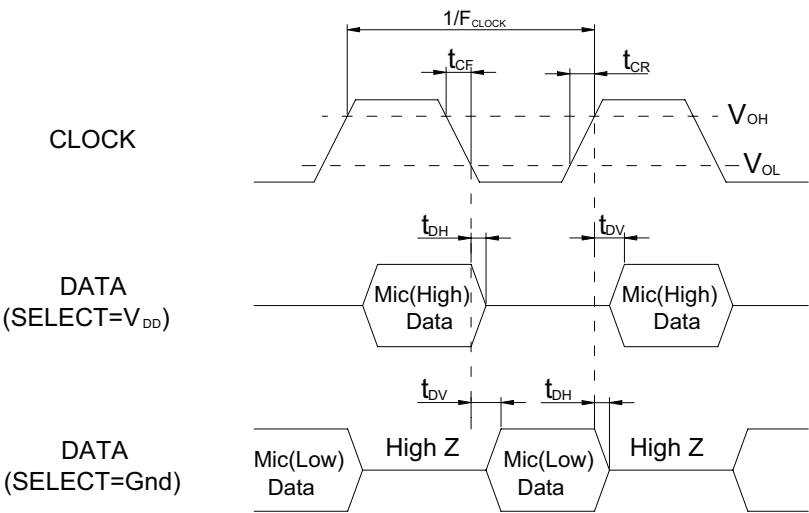
DIGITAL INTERFACE

parameter	conditions/description	min	typ	max	units
clock frequency	sleep mode	0		1	kHz
	low-power mode	40		900	kHz
	normal mode	1.2		4.0	MHz
sleep current (I _{SLEEP})	F _{CLOCK} = 250 kHz		10		µA
DC output	full scale= ±100		4		%FS
polarity	input higher voltage		increasing density of 1's		
data format	1/2 cycle PDM				
short circuit output current (I _{sc})	grounded data pin	1		20	mA
output load (C _{LOAD})				100	pF
fall-asleep time	F _{CLOCK} < 1 kHz			10	ms
wake-up time	F _{CLOCK} ≥ 40 kHz			52	ms
startup time (T _{start})	time to start up in any mode after V _{DD} and C _{CLOCK} are applied		50		ms
mode switch time	time to switch between modes, V _{DD} remains on			20	ms
clock duty cycle		40		60	%
logic input high (V _{IH})	I _{OUT} = 1 mA	0.7XV _{DD}		3.6	V
logic input low (V _{IL})	I _{OUT} = 1 mA	-0.3		0.3XV _{DD}	V
logic output high (V _{OH})	I _{OUT} = 1 mA	V _{DD} -0.45		V _{DD}	V
logic output low (V _{OL})	I _{OUT} = 1 mA	0		0.45	V

Notes: 1. All specifications measured at 23±2°C, humidity at 55±20%, V_{DD} = 1.8 V, F_{CLOCK} = 2.4 MHz (normal mode), F_{CLOCK} = 768 kHz (low-power mode), L/R pin grounded, no load, unless otherwise noted.

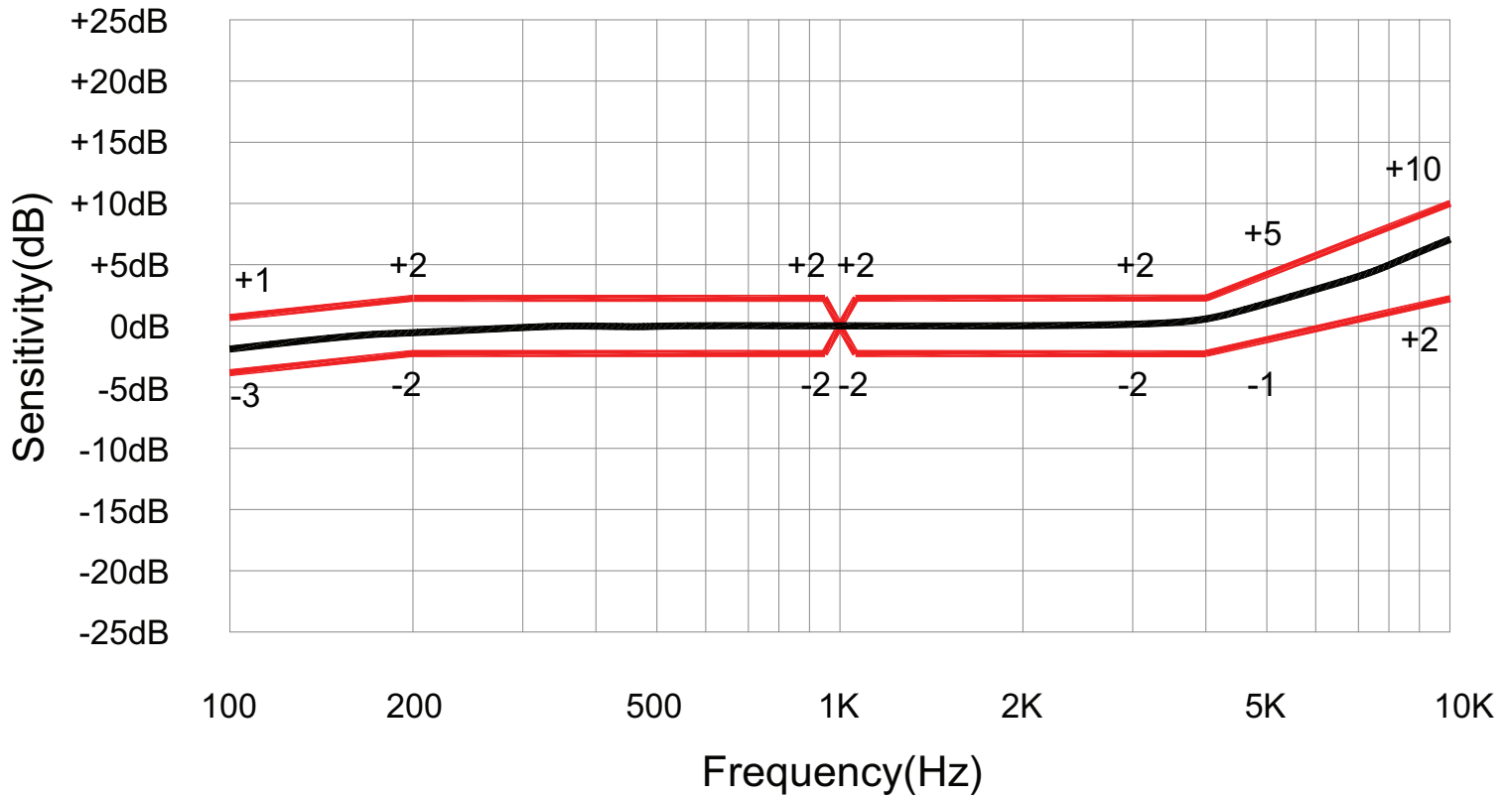
TIMING CHARACTERISTICS

parameter	conditions/description	min	typ	max	units
clock rise/fall time	T _{CR} /T _{CF}			13	ns
DATA into hi Z time	t _{DH}			15	ns
data valid time	t _{DV}	18		40	ns

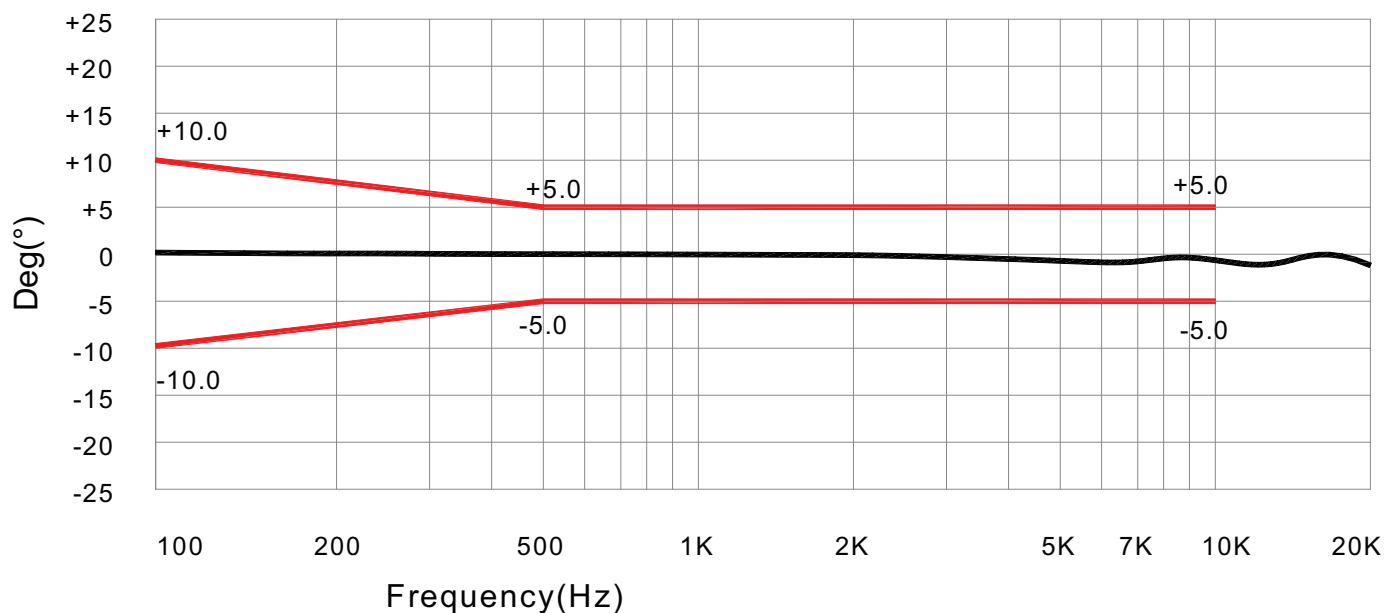


Microphone	Select [L/R]	Asserts DATA On	Latch DATA On
Mic[High]	V _{DD}	rising clock edge	falling clock edge
Mic[Low]	GND	falling clock edge	rising clock edge

FREQUENCY RESPONSE CURVE



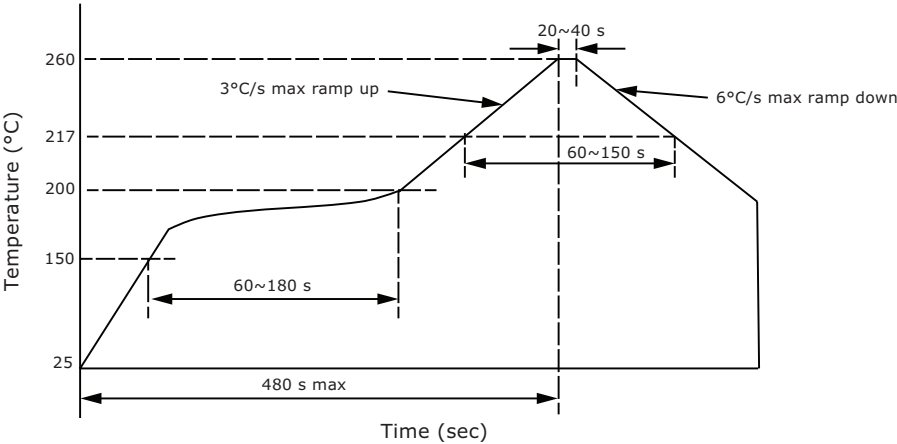
PHASE CURVE



SOLDERABILITY

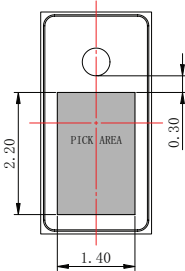
parameter	conditions/description	min	typ	max	units
reflow soldering ²	see reflow profile			260	°C

Note: 2. Not recommended to exceed 3 reflow cycles.



HANDLING RECOMMENDATIONS

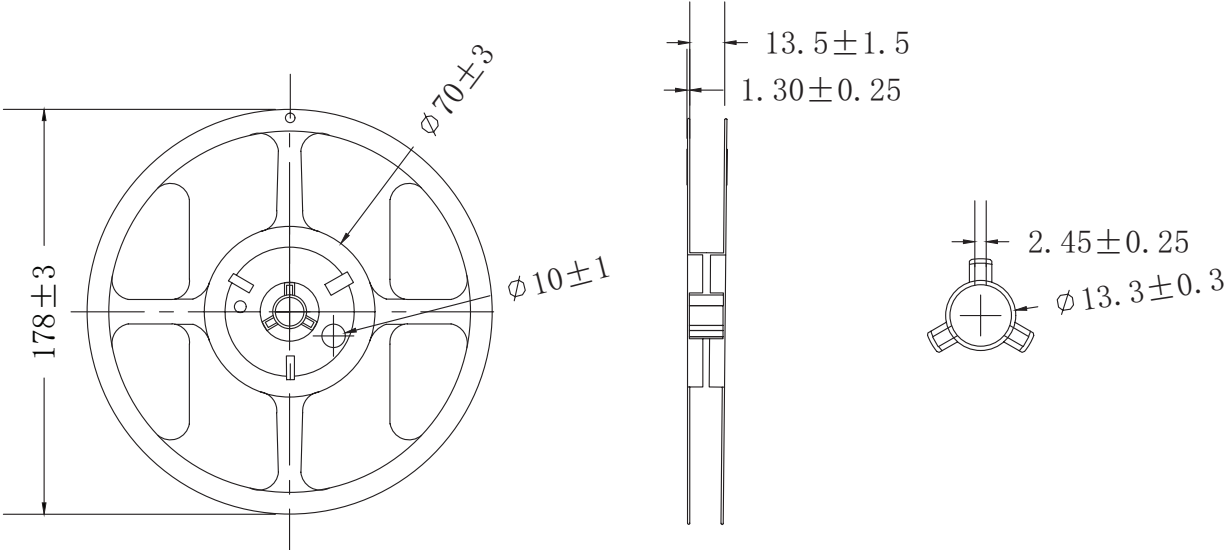
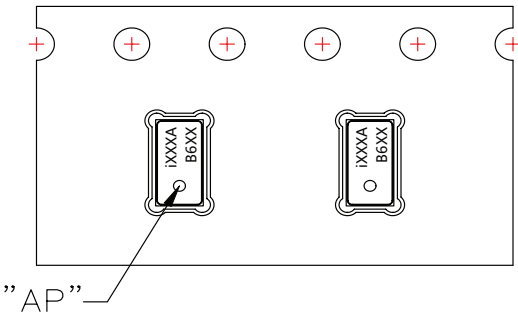
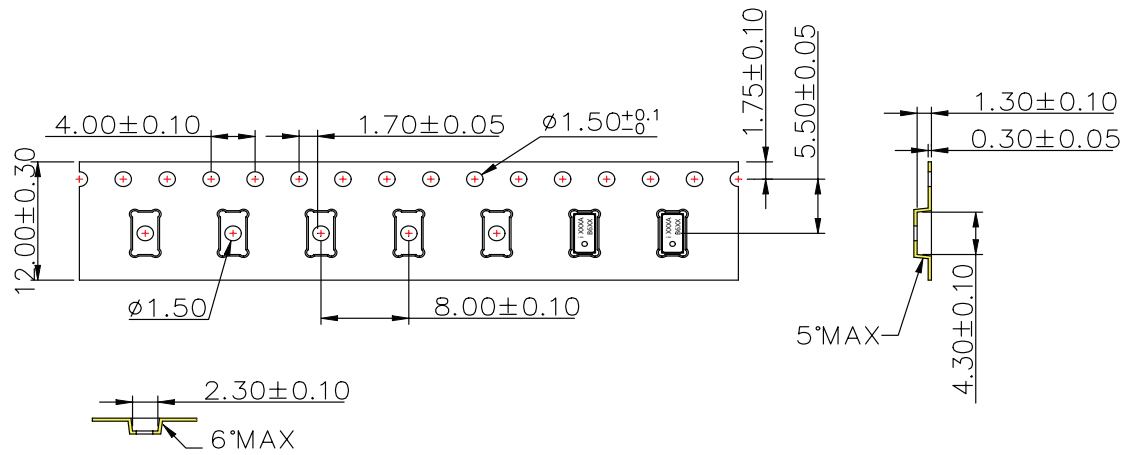
1. Not recommended to blow air heavily over acoustic port as debris could impact mic function.
2. Not suitable for wash process after reflow.
3. Not recommended to brush board with or without solvents after reflow process.
4. Not recommended to directly expose to ultrasonic processing or cleaning.
5. Not recommended to insert any object in port of device at any time.
6. Not recommended to apply over 30 psi of air pressure into the port hole.
7. Not recommended to pull a vacuum over port hole.
8. Not recommended to apply a vacuum when repackaging into sealed bag a rate faster than 0.5 atm/sec.
9. Not recommended to clean table or carried plate with air guarding system that could induce particle floating inside mic.



Recommended Vacuum Nozzle Pickup
Top View

PACKAGING

parameter	conditions/description	min	typ	max	units
reel size	Ø178 mm				
reel QTY	1,000 pcs per reel				
carton size	415 x 235 x 215 mm				
carton QTY	20,000 pcs				



REVISION HISTORY

rev.	description	date
1.0	initial release	09/15/2026

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



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

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