

Specification of MEMS Microphone

RoHS Compliance & Halogen Free

LinkMems P/N: LMD4020T261-OAC23-DM2

Designed by	Checked by	Approved by
Kevin	Thomas	Hary

Customer Approval

Approved by:_____



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MEMS Microphone

1. Introduction

The LMD4020T MEMS Microphones are integrated with specialized Pre-amplification ASIC to provide high sensitivity, high SNR output from a capacitive audio sensor. It's packaged for surface mounting and high temperature reflow assembly. Data format is a single bit PDM.

2. Electrical Characteristics

Test Condition: $V_{DD}=1.8V$, $23\pm 2^{\circ}C$, $55\pm 10\%R.H.$, unless otherwise specified.

Electrical Characteristics

Parameter	Symbol	Note/Test Condition	Values			Unit
			Min.	Typ.	Max.	
Power supply voltage	V_{DD}		1.62	1.8	3.6	V

Standard Mode

Test Condition: Measurement Clock Frequency 2.4 MHz, $V_{DD} = 1.8 V$

Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Directivity			Omni-directional			
Sensitivity Range	S	94dB SPL @1kHz	-27	-26	-25	dB
Current Consumption	I			750		μA
S/N Ratio	SNR	94dB SPL @1kHz A-Weighted		61.5		dB(A)
Total Harmonic Distortion	THD	94dB SPL @1kHz			0.5	%
Acoustic Overload Point	AOP	10% THD @1kHz		120		dB SPL
Power Supply Rejection	PSR	100mVpp Square wave@217Hz, A-weighted		-80		dB

Low Power Mode

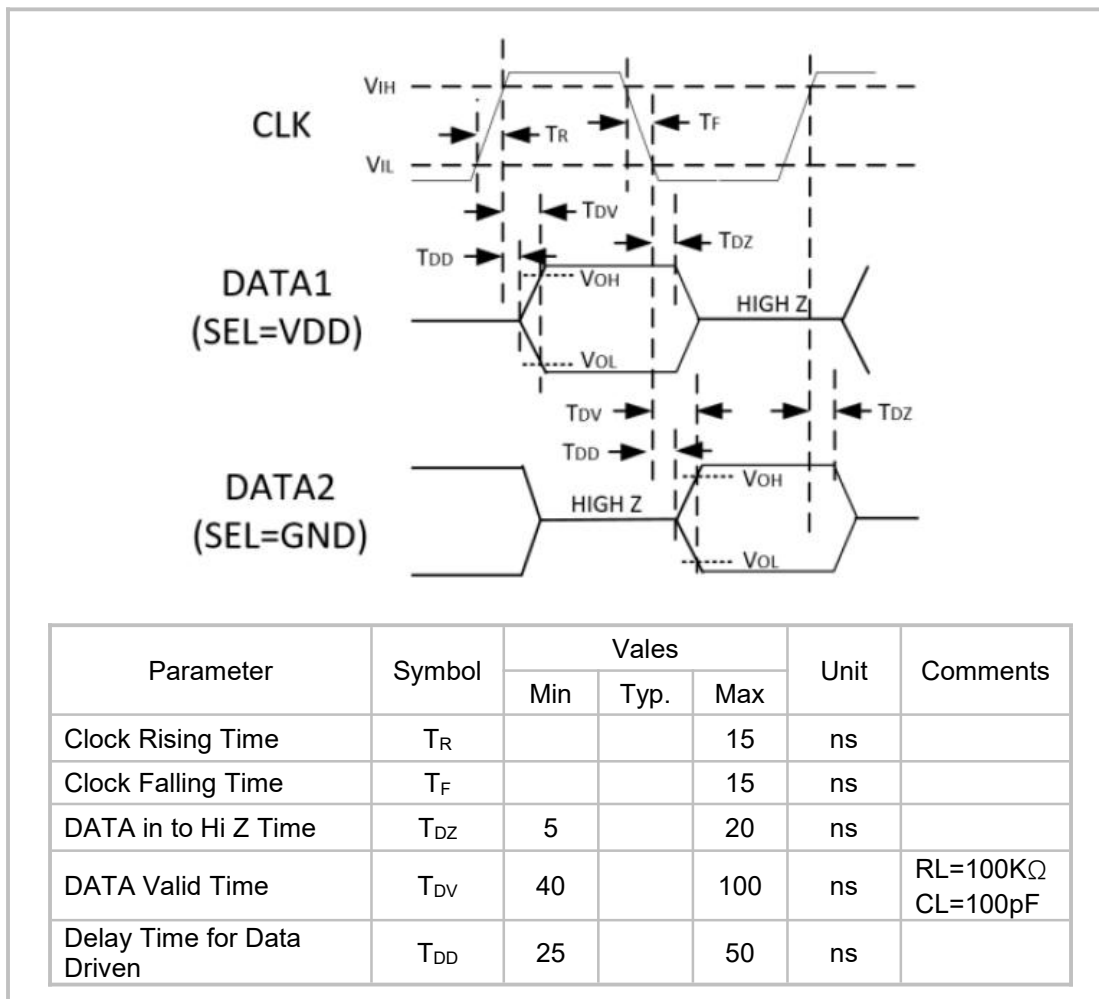
Test Condition: Measurement Clock Frequency 768 kHz, VDD = 1.8 V

Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Directivity			Omni-directional			
Sensitivity Range	S	94dB SPL @1kHz	-27	-26	-25	dB
Current Consumption	I			320		μA
S/N Ratio	SNR	94dB SPL @1kHz A-Weighted		61.5		dB(A)
Total Harmonic Distortion	THD	94dB SPL @1kHz			0.5	%
Acoustic Overload Point	AOP	10% THD @1kHz		120		dB SPL
Power Supply Rejection	PSR	100mVpp Square wave@217Hz, A-weighted		-80		dB

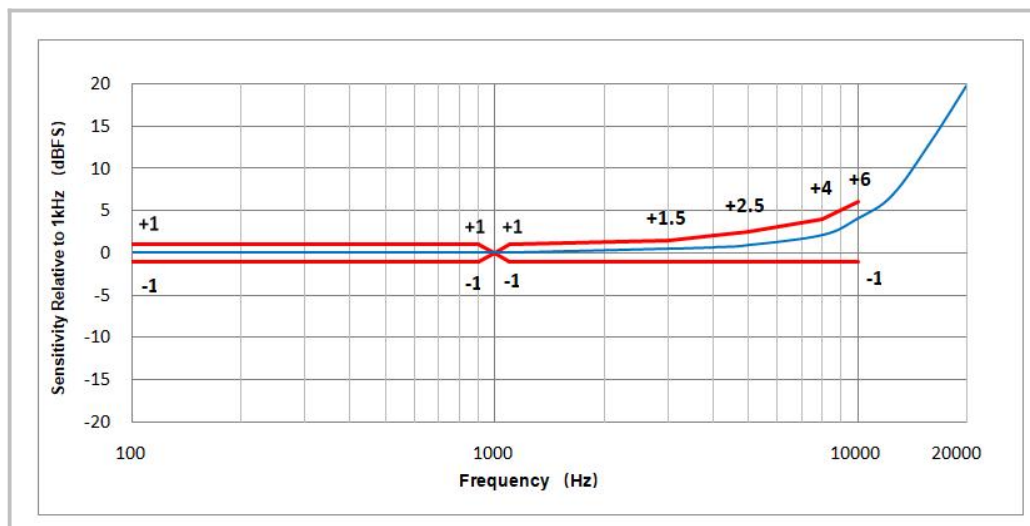
Operation Ratings

Parameter		Symbol	Note/Test Condition	Vales			Unit
				Min	Typ.	Max	
Power supply voltage		V _{DD}		1.62		3.6	V
Frequency Range	Sleep Mode			0		10	kHz
	Low Power Mode			150	768	900	kHz
	Standard Mode			1300		4800	kHz
Clock Duty Cycle				40	50	60	%
Logic Input High				0.65*V _{DD}		V _{DD} +0.3	V
Logic Input Low				-0.3		0.35*V _{DD}	V
Logic Output High				V _{DD} -0.45			V
Logic Output Low						0.45	V
Load Capacitance						100	pF

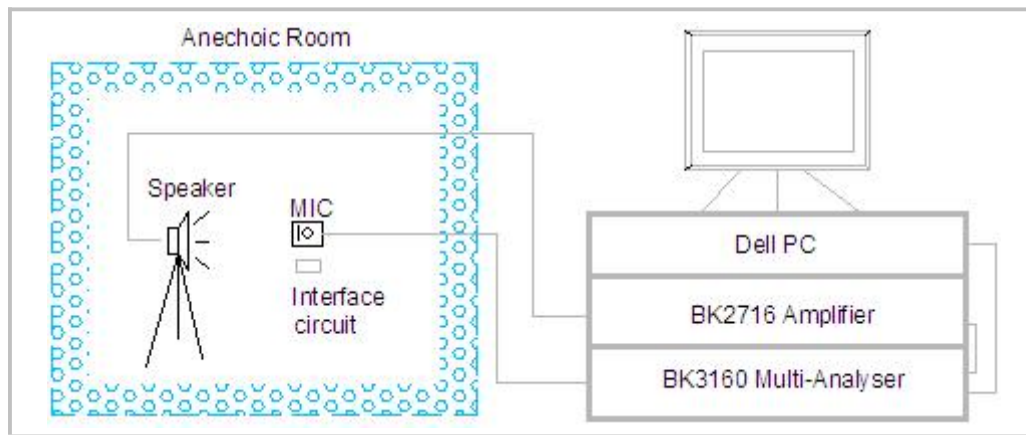
3. Timing Characteristics



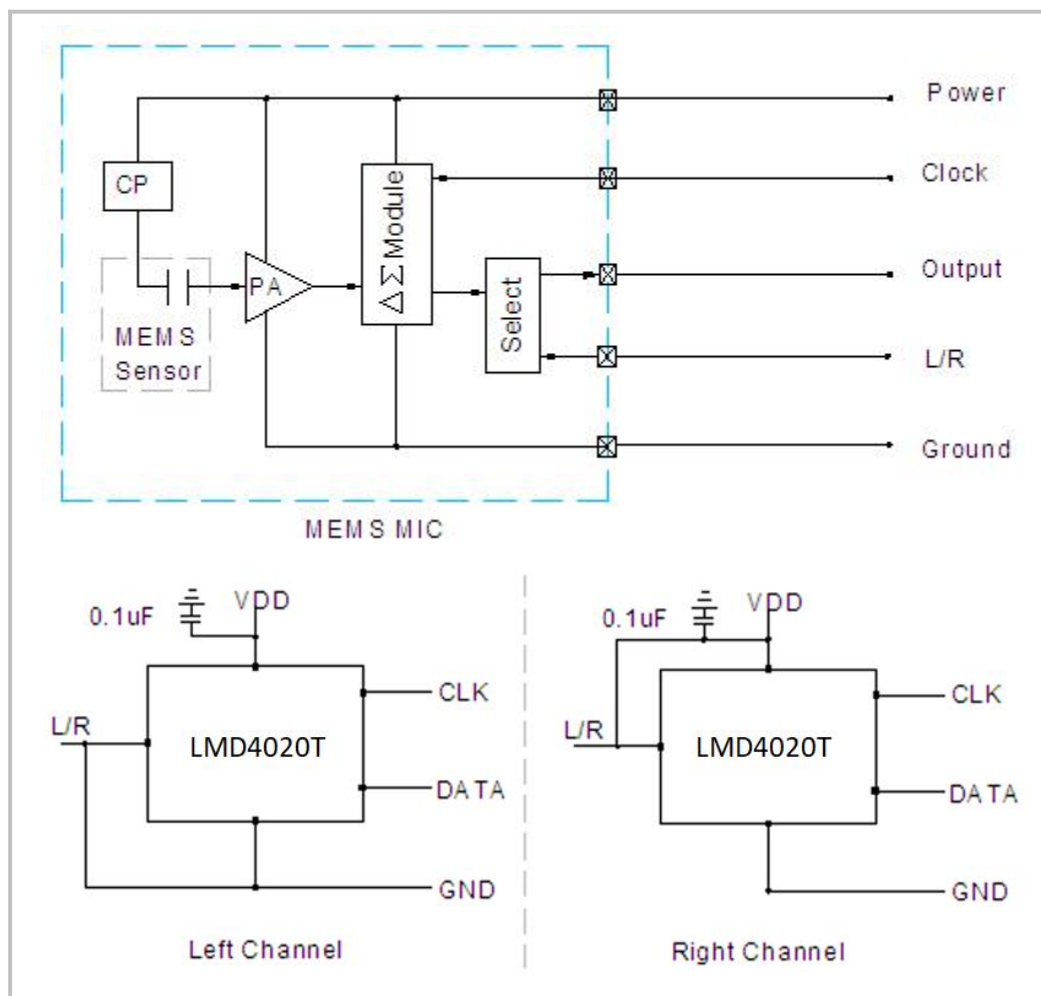
4. Frequency Response Curve



5. Test Setup (Sensitivity Test in Anechoic Room)

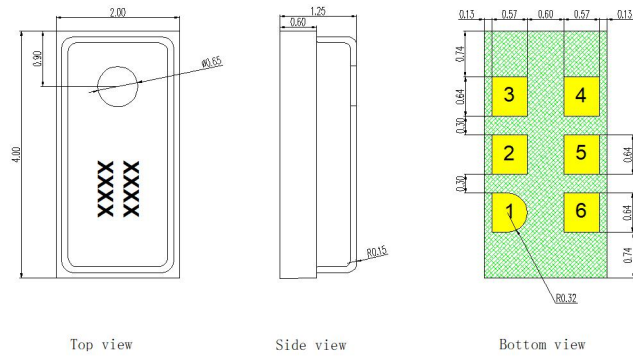


6. Measurement Circuit



7. Mechanical Characteristics

7.1 Mic Unit



Laser Mark	Description
XXXX XXXX	Date Code

Item	Dimension	Tolerance(+/-)	Units
Length(L)	4.0	0.10	mm
Width(W)	2.0	0.10	mm
Height(H)	1.25	0.10	mm
Acoustic Port(AP)	Ø0.65	0.05	mm

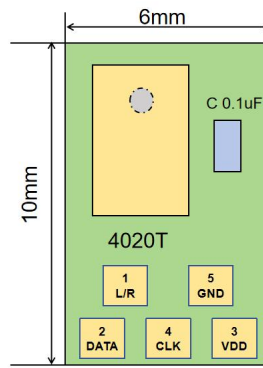
Pin #	Pin Name	Type	Description
1	VDD	Power	Power Supply
2	GND	Ground	Ground
3	DATA	Signal	Output Signal
4	CLK	Clock	Clock Input
5	GND	Ground	Ground
6	L/R	L/R Channel	Channel Select

Notes:

All dimensions are in millimeter (mm).

Tolerance±0.1mm unless otherwise specified.

7.2 FPC



Top View

Item	Dimension	Tolerance(+/-)	Units
Length(L)	10.00	0.10	mm
Width(W)	6.00	0.10	mm
Height(H)	1.45	0.10	mm

Notes:

All dimensions are in millimeter (mm).

Tolerance $\pm$ 0.1mm unless otherwise specified.

Specification Revisions

Revision	Description	Approved	Date
1.0	New Version Released	Hary	31/12/2025