

## CM03M-03S26-MD-3

Rev. 0-2022  
RoHS3 & REACH  
Omni Directional Microphones



### Operating Characteristics

#### ELECTRICAL

Type	Digital
Rated Voltage	1.8 VDC
Operating Voltage	1.6 to 3.6 VDC
Max Short Circuit Current	10 mA
Capacitance	N/A

#### ACOUSTIC - Sleep Mode @ 94dB; 1000 Hz; Rated Voltage

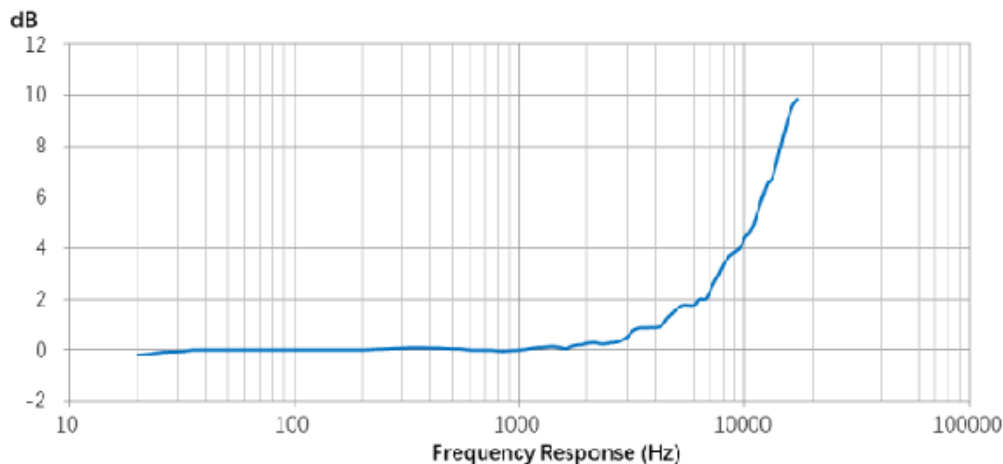
Clock Frequency Range	- kHz
Sleep Current	5 uA
*Tested At 100mVpp square wave @217Hz, A-weighted	
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#### ACOUSTIC - General

Technology	MEMS
Directionality	Omni Directional

#### ACOUSTIC-Standard Mode @ 94dB;1000 Hz;Rated Voltage;CLK Freq.-2.048 MHz

Clock Frequency Range	1.024 - 3.072 MHz
Supply Current	640 uA
Sensitivity	-26 ± 1 dBFS
Signal-to-Noise	64 dB(A)
Power Supply Rejection*	-85 dBFS
PSR Ratio**	59 dBV/FS
Acoustic Overload Point	120 dBSPL
Total Harmonic Distortion	1% Max



Revision	Description	By	Date
0-2022	Original Specification	AL	2022-07-07

Warranty: For a period of one (1) year from date of shipping under normal operations conditions. This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair.

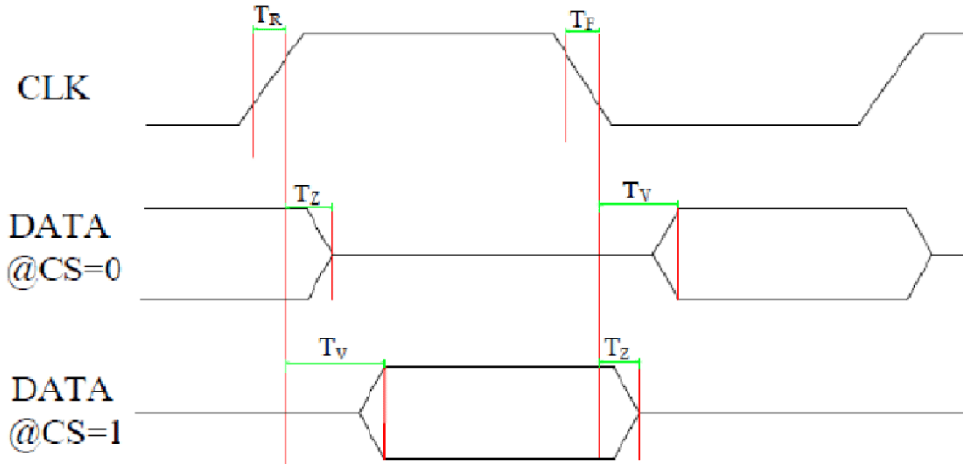
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## Operating Characteristics



### Timing Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Comments
Clock Rising Time	TR			10	ns	RL=1MΩ, CL=12pF
Clock Falling Time	TF			10	ns	RL=1MΩ, CL=12pF
DATA into Hi Z Time	TZ	0		15	ns	RL=1MΩ, CL=12pF
DATA Valid Time	TV	18		40	ns	RL=1MΩ, CL=12pF
Clock Jitter				0.5	ns	Period jitter in RMS
Clock Duty Cycle		40	50	60	%	
Clock Frequency		1.024	2.048	3.072	MHZ	

Parameter	Symbol	Condition	Min	Typ.	Max	Unit
Logic Input High	Vih		0.75x VDD	-	-	V
Logic Input Low	Vil		-	-	0.25x VDD	V
Logic Output High	Voh		VDDx 0.9	-	-	V
Logic Output Low	Vol		-	-	0.1x VDD	V

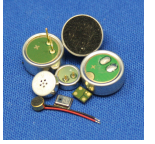
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### Physical Characteristics

#### MATERIAL

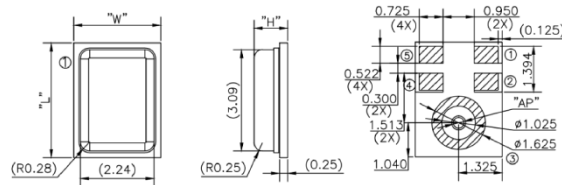
Solder Pads Gold Plated Copper

#### TEMPERATURE RANGES

Operating -40 to +85 °C

Storage -40 to +105 °C

Weight 0.02 g

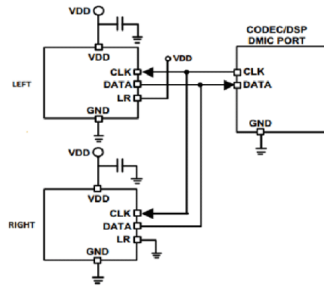


Item	Dimension	Tolerance
Length(L)	3.50	±0.10
Width(W)	2.65	±0.10
Height(H)	0.98	±0.10
Acoustic Port (AP)	Ø0.325	±0.05

Pin#	Pin Name	Description
1	DATA	PDM Output
2	SELECT	Lo/Hi (L/R) Select This pin is internally pulled low but should not be left floating
3	GND	GND
4	CLOCK	Clock input
5	VDD	Power Supply

General tolerance = ±0.1 mm and all measurements in mm unless otherwise noted.

### Interface Circuit



Microphone	SELECT	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

Note:  
All GND pins must be connected to ground.  
Capacitors near the microphone should not contain Class 2 dielectrics.

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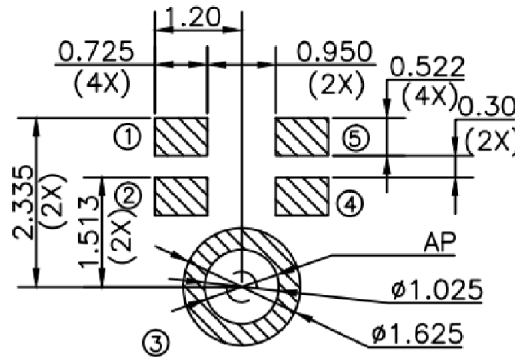
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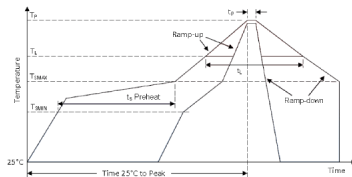
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### Recommended Footprint



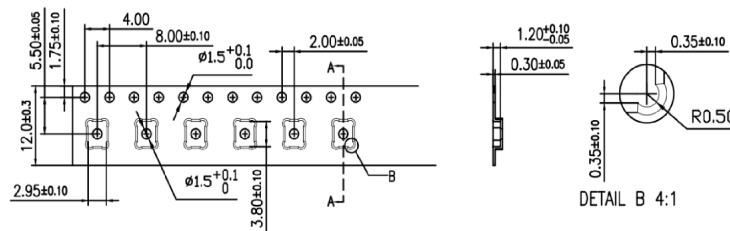
### Recommended Reflow Profile



Profile Feature	Lead(Pb) Free Solder	
Preheat	Temperature min. (T <sub>25min</sub> )	150°C
	Temperature max. (T <sub>25max</sub> )	200°C
	Time (ts)	60-180 Seconds
Liquidous	Temperature (TL)	217°C
	Time (tL)	60-150 Seconds
Peak	Temperature (Tp)	260°C
	Time within 5°C of actual peak temperature (ts)	20-40 Seconds
Ramp up	Average ramp up rate T <sub>25max</sub> to T <sub>p</sub>	3°C / Second Max.
Ramp down	Average ramp down rate T <sub>p</sub> to T <sub>25max</sub>	6°C / Second Max.
Time 25°C to Peak temperature		8 Minutes Max.

Note:  
All temperatures refer to top side of the package, measured on the package body surface.

### Tape & Reel Packaging



Reel Diameter	Quantity Per Reel
13"	5,000

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