



Description: The RMIC-94-3.6-4030-NX-NS1 is a miniature, high-performance, low power, top port silicon digital microphone with a single bit PDM output.



Top View



Bottom View

ELECTRICAL SPECIFICATIONS

Normal Mode

Test Condition: Vdd=1.8 V, Fclock = 2.4MHz, no load, unless otherwise noted.

Items	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Directivity		Omni-directional				
Sensitivity	S	94dBSPL @1kHz	-27	-26	-25	dBFS
Current Consumption	IDD			800	950	μA
S/N Ratio	SNR	94dBSPL @1kHz A-weighted		59		dB
Total Harmonic Distortion	THD	94dBSPL @1kHz,			0.5	%
Acoustic Overload Point	AOP	10% THD @1kHz		120		dB SPL
Power Supply Rejection	PSR	100mVpp Square wave @217Hz, A-weighted		-84		dBFS

Low Power Mode

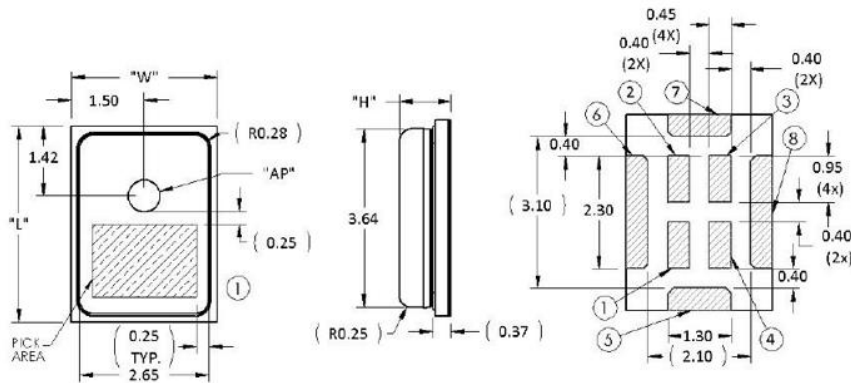
TEST CONDITIONS: fCLOCK = 2.4MHz, VDD =1.8V, unless otherwise indicated

Items	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Directivity		Omni-directional				
Sensitivity	S	94dB SPL @1kHz	-27	-26	-25	dBFS
Current Consumption	I _{DD}	Low power mode		300	350	μA
		Fclk OFF		1		μA
		Standby Mode			50	μA
S/N Ratio	SNR	94dB SPL @1kHz A-weighted		57		dB
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		-86		dBFS

Electrical Specifications

Parameter	Symbol	Min	Typ.	Max	Unit
Power supply voltage	V _{DD}	1.62		3.6	V
Frequency Range	Standby Mode		0	350	kHz
	Low Power Mode	150	768	900	kHz
	Normal Mode	1.00	2.4	4.8	MHz
Duty Cycle		40		60	%
Logic Input High		0.65xV _{DD}		V _{DD} +0.3	V
Logic Input Low		-0.3		0.35xV _{DD}	V
Logic Output High		V _{DD} -0.45			V
Logic Output Low				0.45	V
Load Capacitance				140	pF

DIMENSIONS

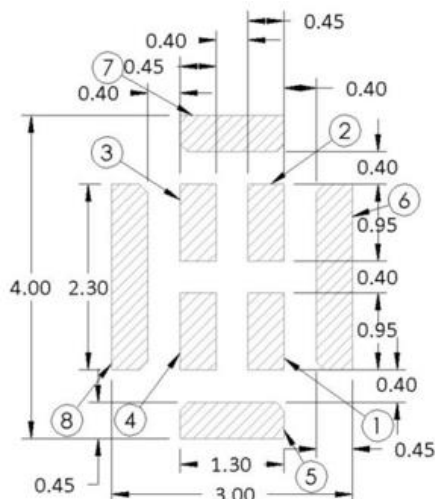


Item	Dimension	Tolerance	Units
Length (L)	4.00	±0.10	mm
Width (W)	3.00	±0.10	mm
Height (H)	1.06	±0.10	mm
Acoustic Port (AP)	Ø0.65	±0.05	mm

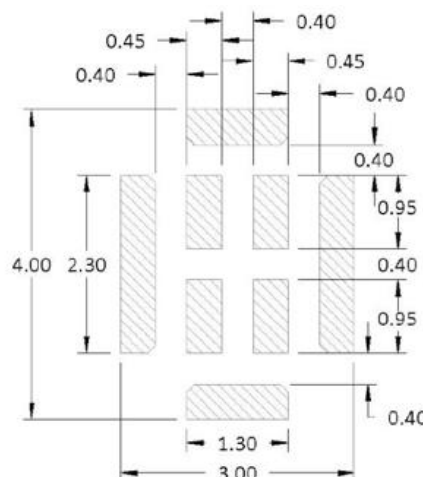
Pin #	Pin Name	Type	Description
1	V _{DD}	Power	Power Supply
2	SELECT	Non-Digital Input	Lo/Hi (L/R) Select This pin is internally pulled low.
3	CLOCK	Digital I	Clock Input
4	DATA	Digital O	PDM Output
5	GROUND	Power	Ground
6	GROUND	Power	Ground
7	GROUND	Power	Ground
8	GROUND	Power	Ground

Notes: Pick Area only extends to 0.25 mm of any edge or hole unless otherwise specified.
 Dimensions are in mm unless otherwise specified.
 Tolerance is ±0.10mm unless otherwise specified
 All Ground Pin must be connected to the ground in end application.

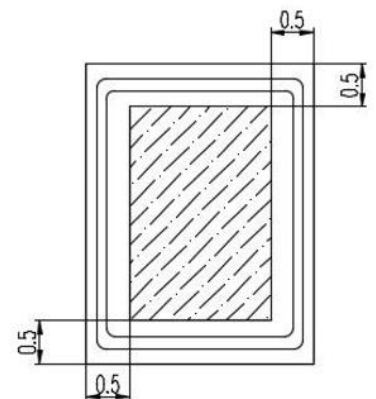
EXAMPLE LAND PATTERN



EXAMPLE SOLDER STENCIL PATTERN

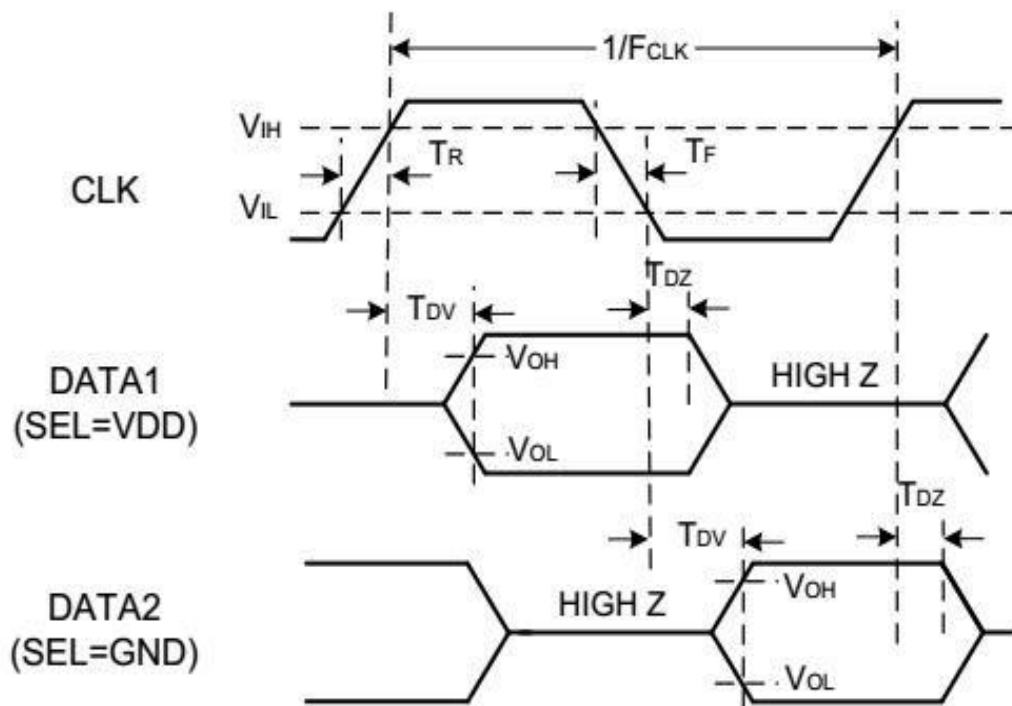


EXAMPLE PICK UP LOCATION

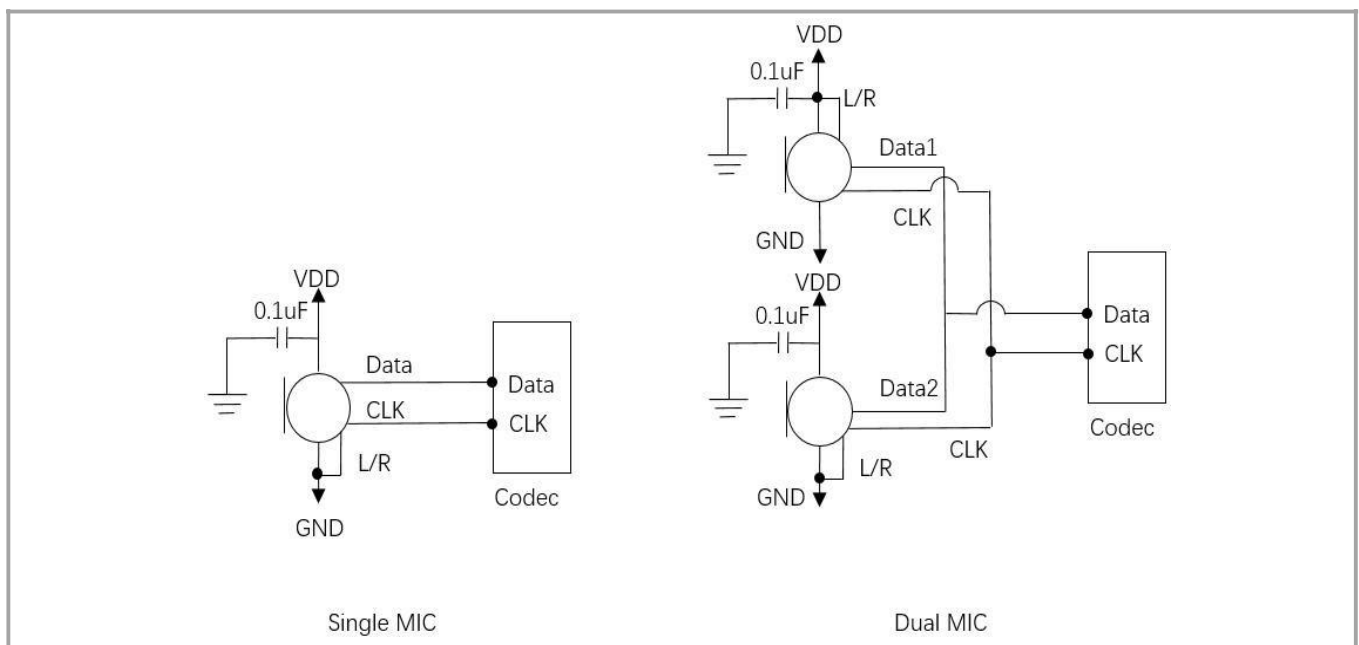


TIMING DIAGRAM

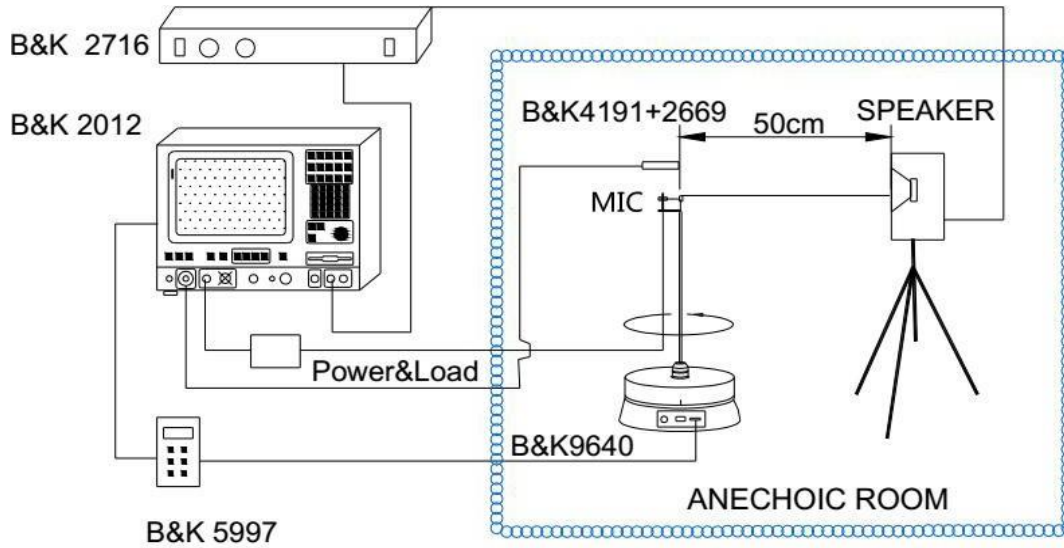
Channel	L/R Connection	Data drive	Data high Z
Data 1	VDD	CLK rising edge	CLK falling edge
Data 2	GND	CLK falling edge	CLK rising edge



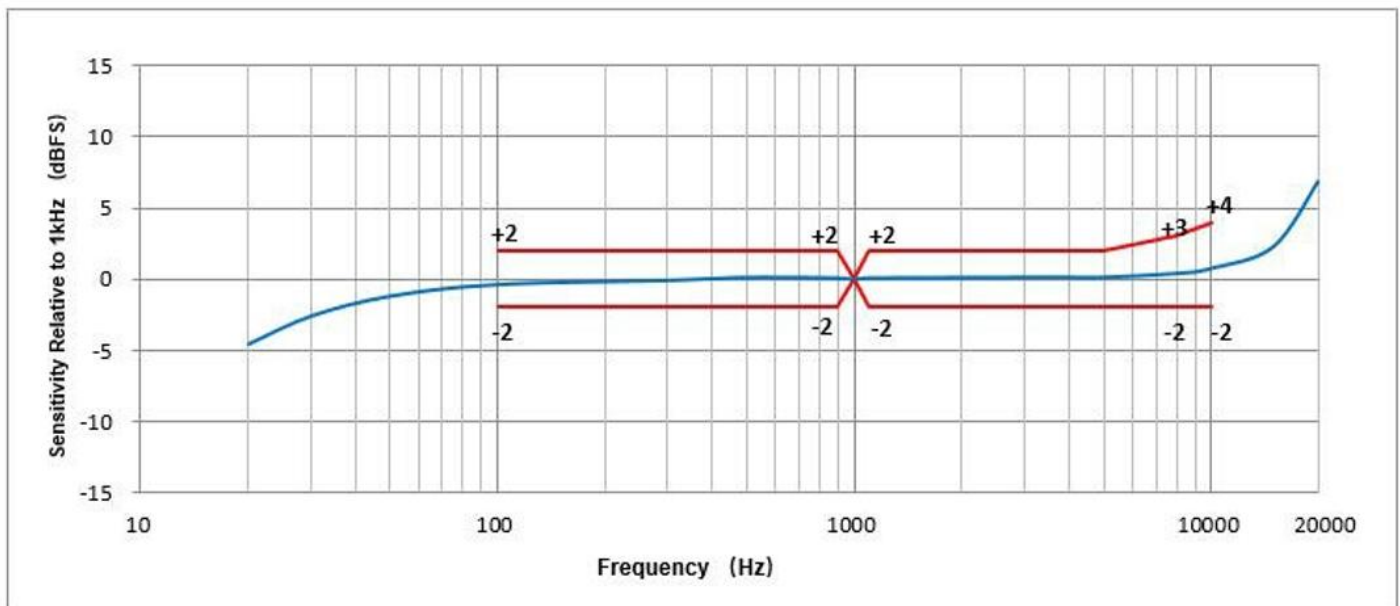
SCHEMATIC MEASURING DIAGRAM



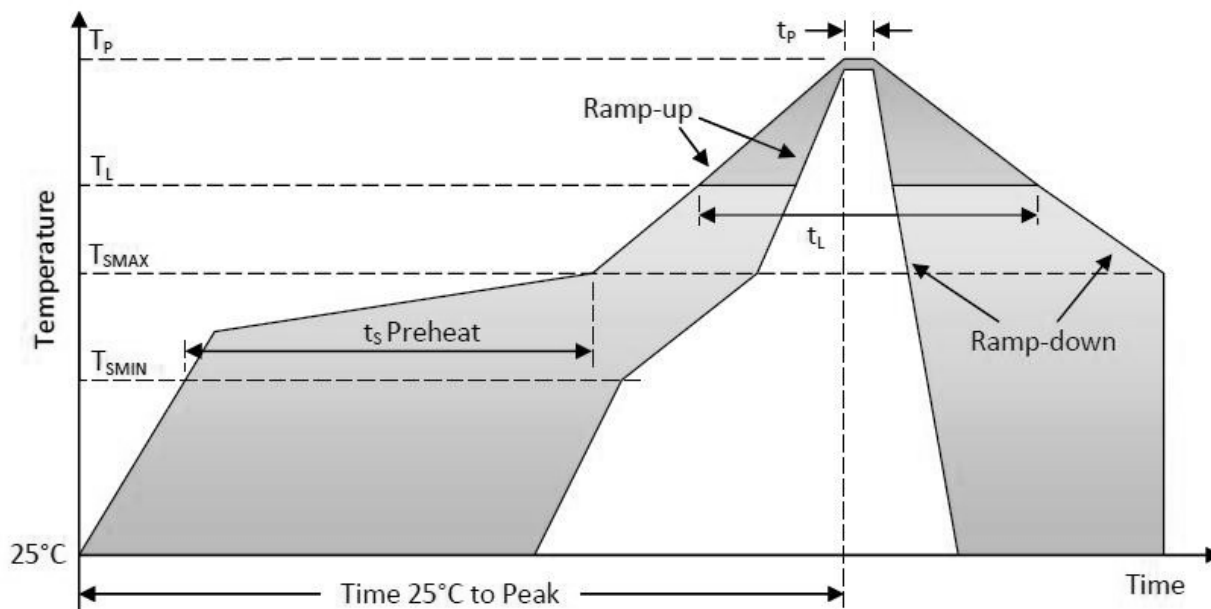
MEASUREMENT SYSTEM SETUP



FREQUENCY CHARACTERISTICS

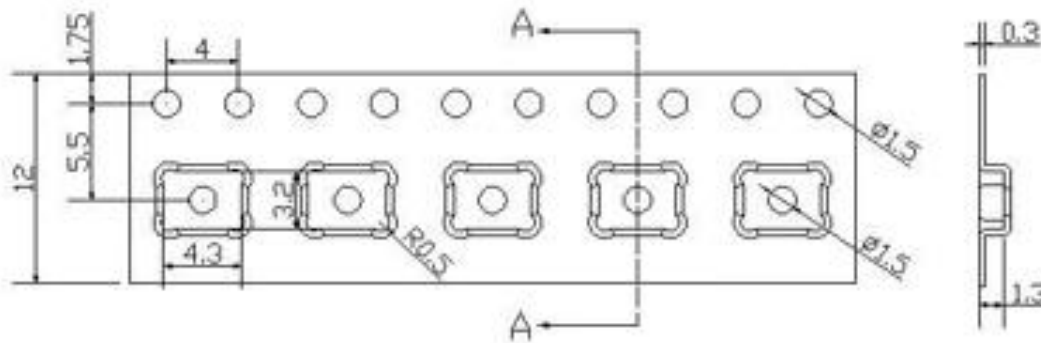


REFLOW PROFILE



Parameter		Reference	Specification
Average Ramp-up Rate		T _L to T _P	3°C/sec max
Preheat	Minimum Temperature	T _S MIN	150°C
	Maximum Temperature	T _S MAX	200°C
	Time T _S MIN to T _S MAX	t _s	60 -180 sec
Ramp-up Rate		T _S MAX to T _L	1.25°C/sec
Time Maintained Above Liquidous		t _L	60-150 sec
Liquidous Temperature		T _L	217°C
Peak Temperature		T _P	260°C
Time Within +5°C of Actual Peak Temperature		t _p	20 -40 sec
Ramp-down Rate		T _P to T _S MAX	6°C/sec max
Time 25°C to Peak Temperature			8 min max

PACKAGING



Unit: mm

Suffix	Reel Diameter	Quantity Per Reel
-8	13"	5,000

APPROVAL

DRAWN BY	AR, January 13, 2024
APPROVED BY	CP, January 13, 2024
REVISION	A, Initial Release

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