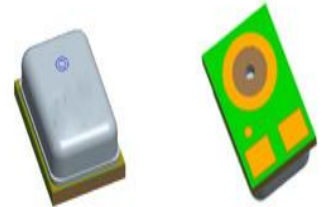


### Features

- 2.75x1.85x0.90mm Bottom Port
- Single Ended Analog Output
- SNR of 63.5dBA
- RF Shielded
- Compatible with Standard SMD Reflow Technology
- RoHS Compliance & Halogen Free

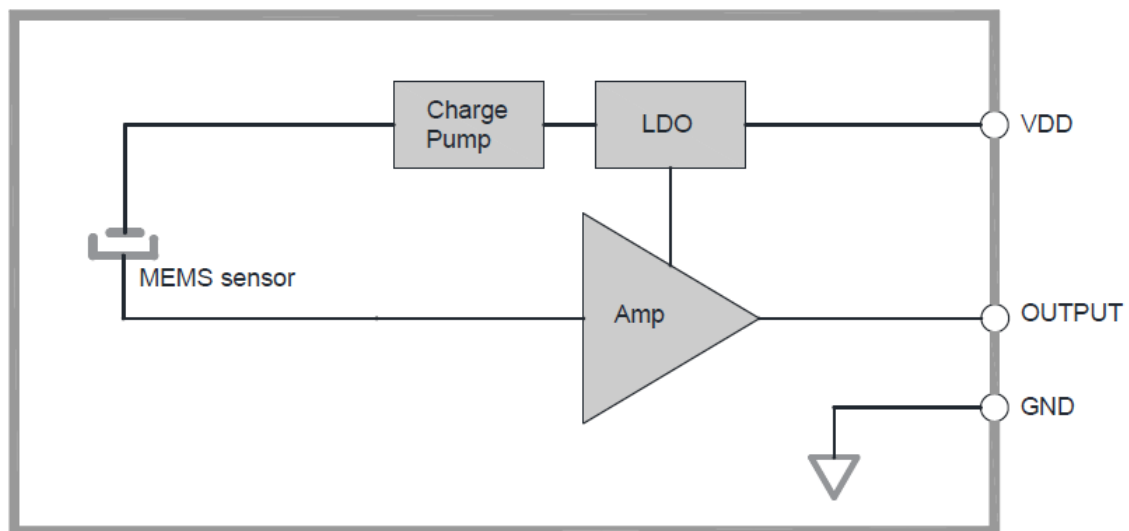
### Applications

- Smart Phones
- TWS Headsets
- Smart Speakers
- Wearable Electronics
- Portable Electronics
- Smart Home Electronics
- Laptop Computers



**Description** RMIC-94-3.6-2718-RG-NS7 is a small package, single-ended output bottom port analog MEMS microphone. The 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 re-flow assembly.

### BLOCK DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

Parameters	Value			Unit
	min	typ	max	
Supply Voltage			3.6	V
Supply Current			1	mA
Output Current			1	mA
Operation Temperature Range	-40		+85	°C
Storage Temperature Range	-40		+85	°C

Note : Stresses at the maximum ratings shown in Table may cause permanent damage to the device. These are stress ratings only at which the device may not function when an operation at these or any other condition beyond those specified under "Electro-Acoustic Specifications".

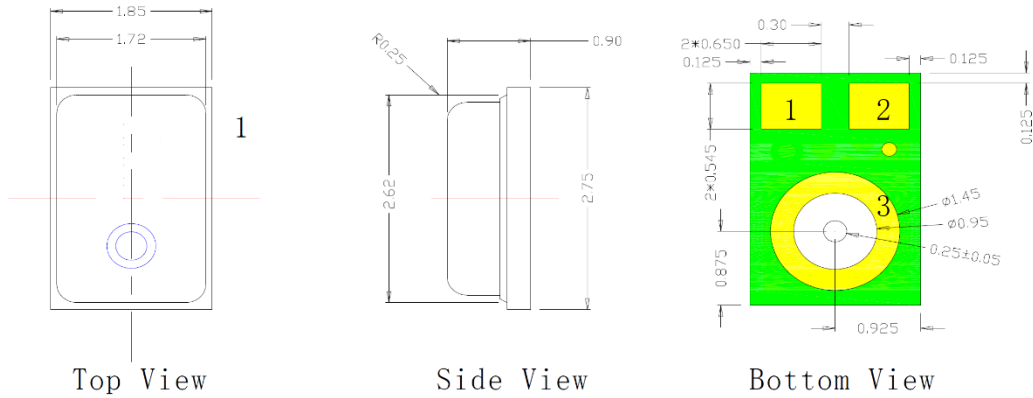
### ELECTRICAL SPECIFICATIONS

Test condition: Vdd=2.0V, no load, unless otherwise specified.

Parameters		Value			Unit
		min	typ	max	
Directivity		Omni-Directional			
Sensitivity (S)	94db SPL@ 1kHz	-39	-38	-37	dB
Current Consumption (I)	Vdd= 2.0V		120	160	uA
Operating Voltage	Vdd	1.6	2.0	3.6	V
Output Impedance	@1kHz			400	Ω
S/N Ratio (SNR)	BW=20-20KHz A-Weight, 1KHz		63.5		dB
Total Harmonic Distortion (THD)	@ 94dB SPL @1kHz			0.5	%
Acoustic Overload Point (AOP)	@10% THD @1kHz		128		dB
Power Supply Rejection (PSR)	@100mVpp Square wave, 217Hz, A-weighted		-105	-90	dB
Power Supply Rejection Ratio (PSRR)	@200mVpp Sinewave @1KHz		70		dB
Phase	20-10KHz	-5		5	Degree
Output Load	@ C <sub>load</sub>			150	pF
	@ R <sub>load</sub>	10		100	kΩ

Note: Frequency response, sensitivity, phase and current consumption are tested by 100% on product line.

### DIMENSIONS

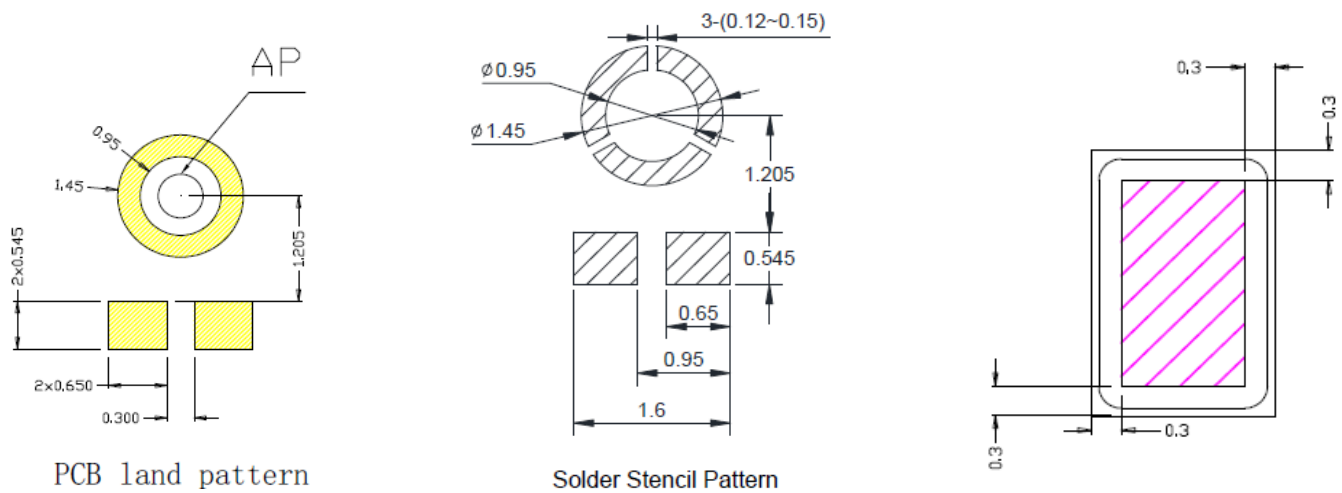


Unit: mm Unmarked Tolerance:  $\pm 0.1$  (mm)

Item	Dimension	Tolerance(+/-)
Length(L)	2.75	0.10
Width(W)	1.85	0.10
Height(H)	0.90	0.10
Acoustic Port(AP)	$\varnothing 0.25$	0.05

Pin	Pin Name
1	V <sub>DD</sub>
2	Output
3	GND

### PICKUP TOOL PICK LOCATION & PCB SOLDER PAD LAYOUT



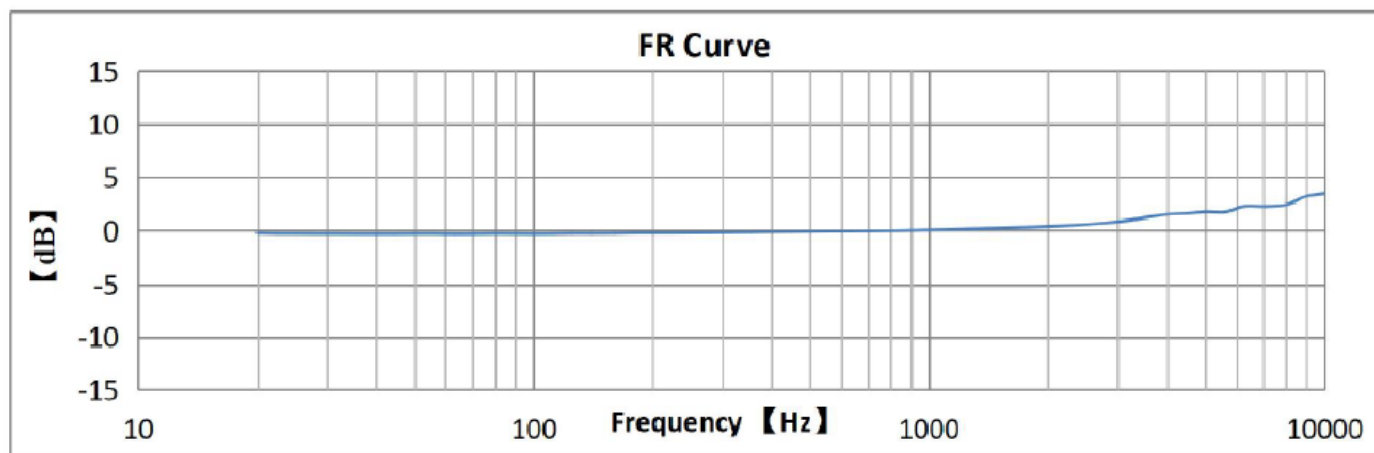
#### Notes:

Dimensions are in millimeters(mm) unless otherwise specified.

Tolerance is  $\pm 0.1$ mm unless otherwise specified.

The recommended non-plated hole("AP") diameter of PCB is 0.5-0.7mm.

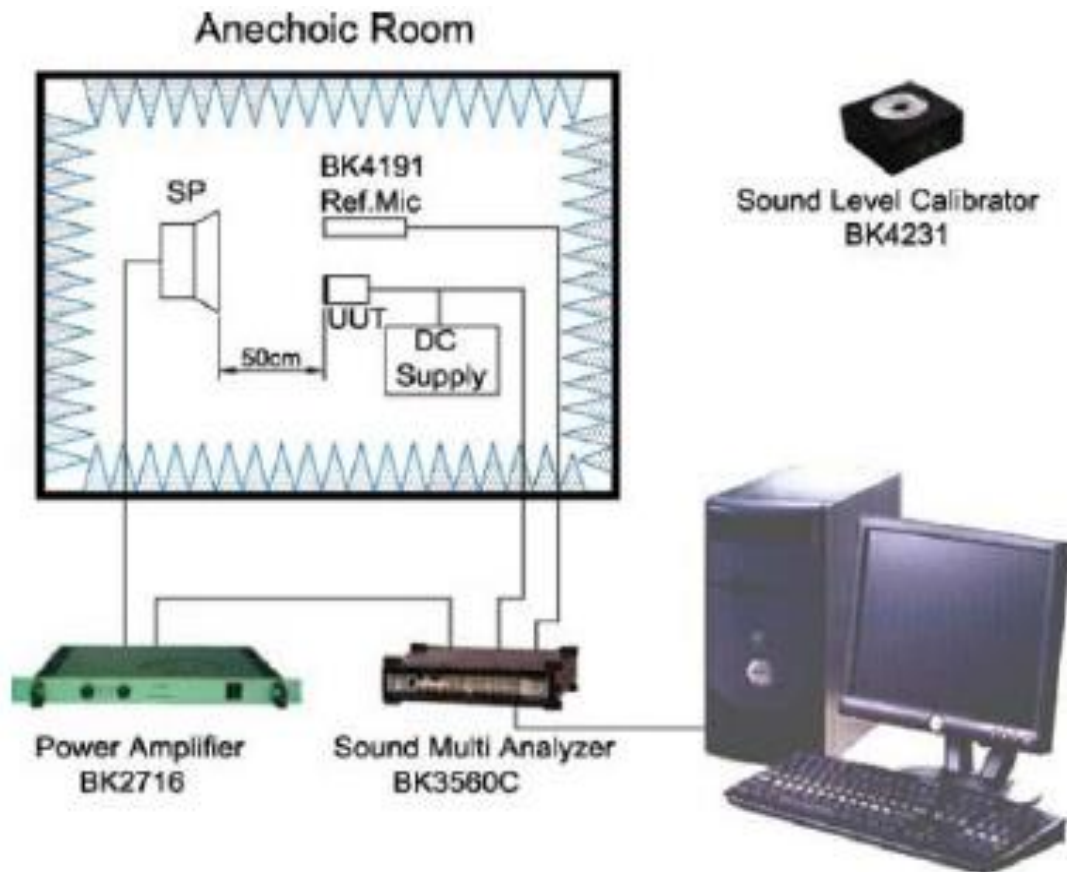
### FREQUENCY CHARACTERISTICS



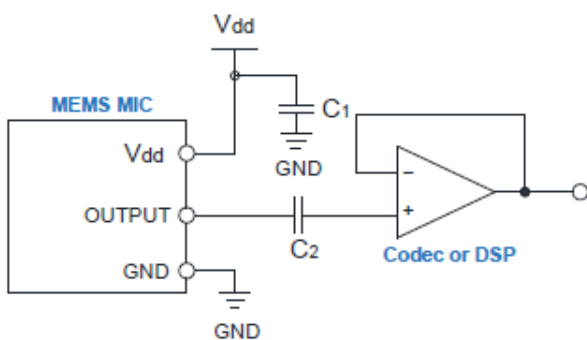
Frequency response curve normalized to 1kHz

Frequency (Hz)	LSL	USL	Unit
20	-1	1	dB
100	-1	1	dB
900	-1	1	dB
1000	0	0	dB
1100	-1	2	dB
8000	-1	4	dB
10000	0	6	dB

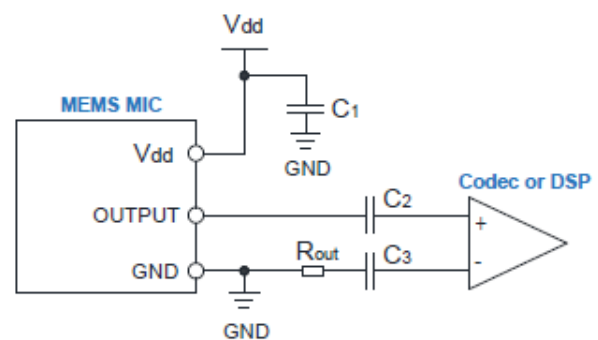
## MEASUREMENT SYSTEM SETUP



## TYPICAL APPLICATION CIRCUIT

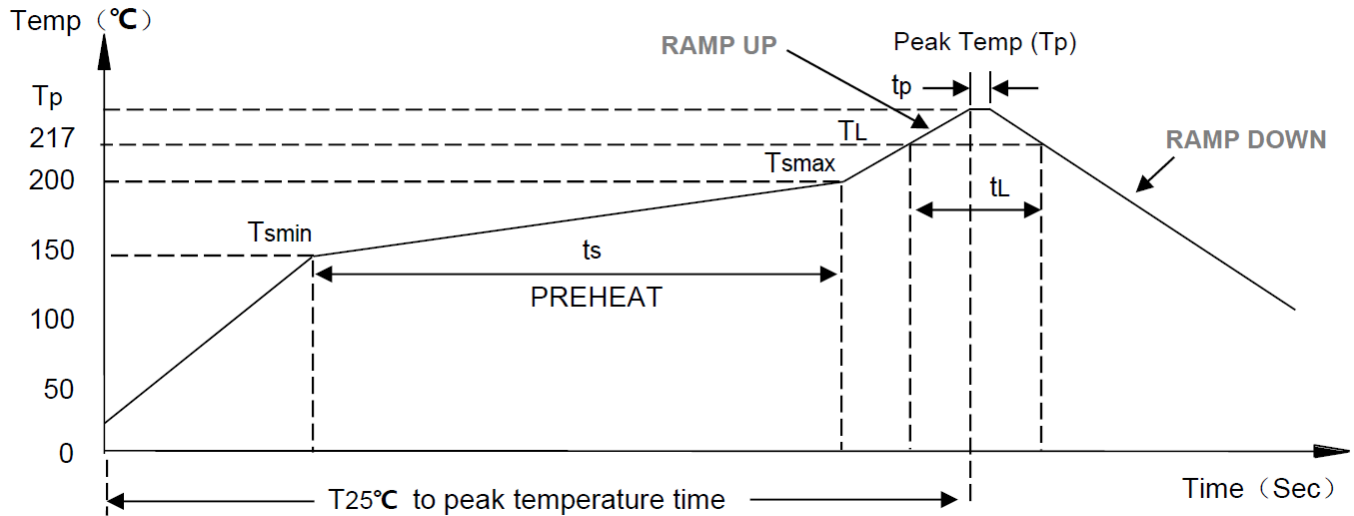


Single ended input interface circuit



Differential input interface circuit

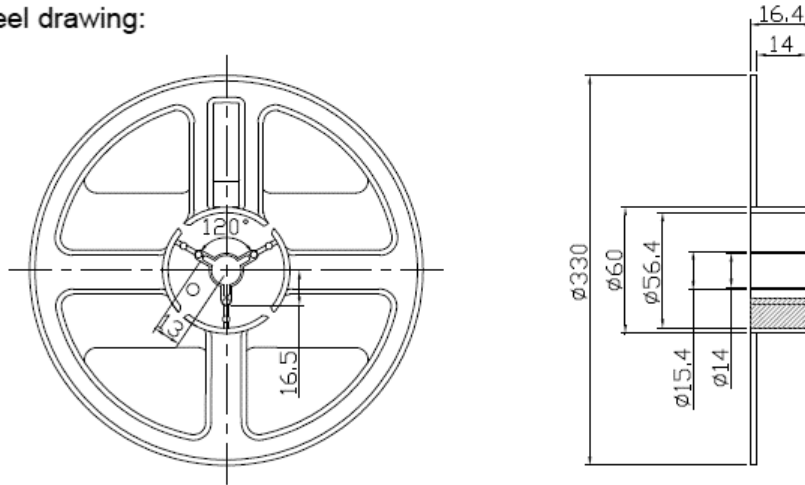
## REFLOW PROFILE



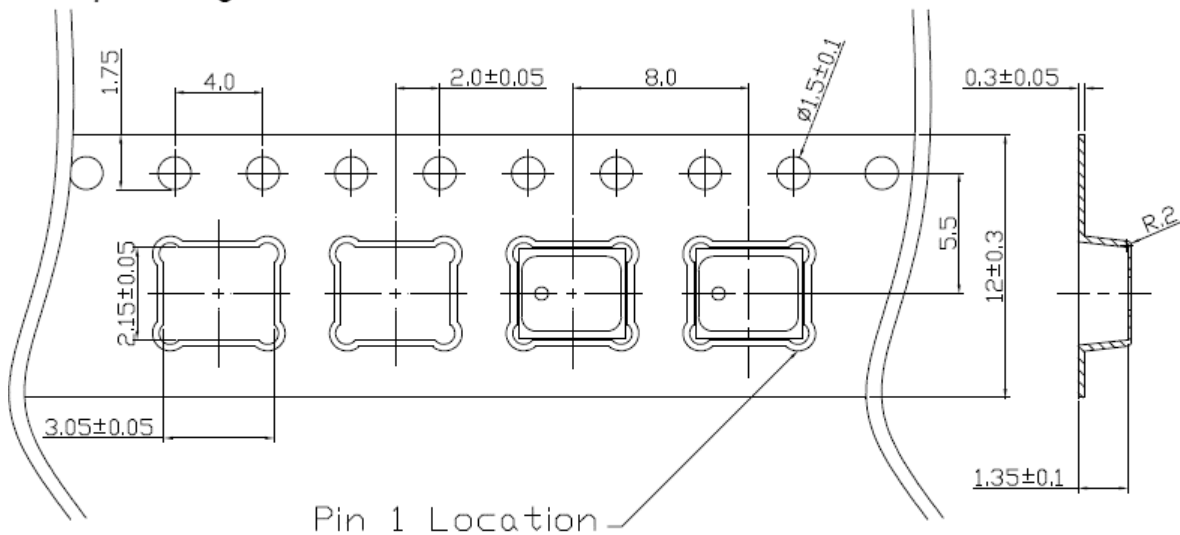
Parameter		Specification
Average temperature change rate (TSMAX to TP)		3°C /second max.
Preheat	Temperature min.(TSMIN)	150°C
	Temperature max.(TSMAX)	200°C
	Time TSMIN to TSMAX	60-180 Seconds
Time Maintained Above Liquidous		60-150 Seconds
Liquidous Temperature		217°C
Peak Temperature		260°C +0°C/-5°C
Time Within +5°C of Actual Peak Temperature		20 sec to 40 sec
Ramp-Down Rate		3°C/sec max
Time +25°C (t25°C) to Peak Temperature		8 min max

### PACKAGING

13" Reel drawing:



Tape drawing:



### APPROVAL

DRAWN BY	JS, May 28, 2024
APPROVED BY	AR, May 28, 2024
REVISION	A, Initial Release