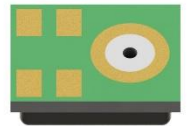


Features

- 3.5x2.65x0.98mm Bottom Port
- Single Ended Analog Output
- SNR of 65dBA
- RF Shielded
- Compatible with Standard SMD Reflow Technology
- RoHS Compliance & Halogen Free

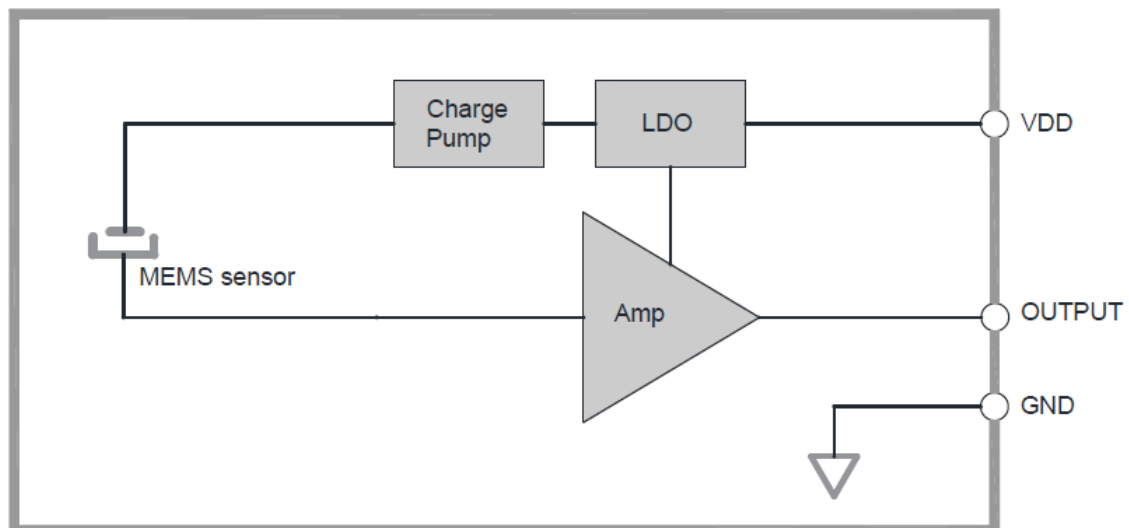
Applications

- Mobilephones
- Wireless Headsets
- Smart Speakers
- Wearable Electronics
- Portable Electronics
- Smart Home Electronics
- Laptop Computers



Description RMIC-94-3.6-3526-RG-NS1 is a single-ended output bottom port analog MEMS microphone, consists of a MEMS sensor and a low noise level ASIC .

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".

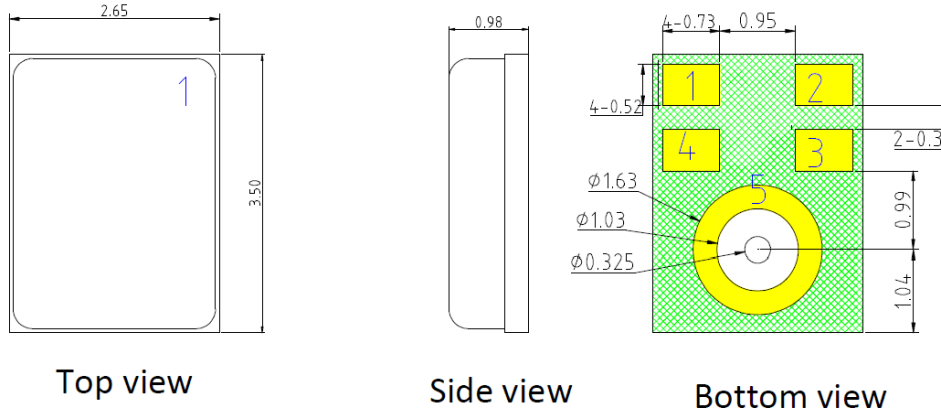
ELECTRICAL SPECIFICATIONS

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 | | 110 | 150 | uA |
| Operating Voltage | Vdd | 1.6 | 2.0 | 3.6 | V |
| Output Impedance | @1kHz | | | 400 | Ω |
| S/N Ratio (SNR) | @ 20-20kHz Bandwidth, A-Weighted | | 65 | | dBA |
| Total Harmonic Distortion (THD) | @ 94dB SPL @1kHz | | | 0.5 | % |
| Acoustic Overload Point (AOP) | @10% THD @1kHz | | 124 | | dB |
| Power Supply Rejection | @100mVpp Square wave, 217Hz, A-weighted | | -95 | -80 | dB |
| Power Supply Rejection Ratio | @200mVpp Sinewave @1kHz | 60 | | | dB |
| Output Load | @ Cload | | | 150 | pF |
| | @ Rload | 10 | | 100 | kΩ |

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

DIMENSIONS



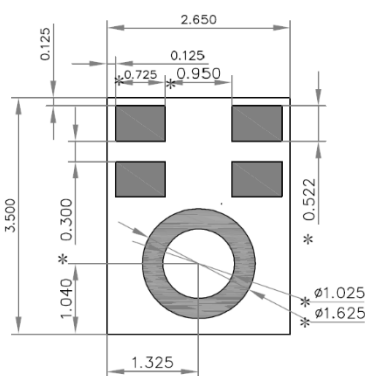
Unit: mm Unmarked Tolerance: ± 0.1 (mm)

| Item | Dimension | Tolerance(+/-) |
|-------------------|---------------------|----------------|
| Length(L) | 3.50 | 0.10 |
| Width(W) | 2.65 | 0.10 |
| Height(H) | 0.98 | 0.10 |
| Acoustic Port(AP) | $\varnothing 0.325$ | 0.05 |

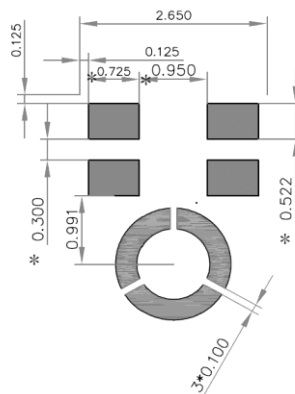
| Pin | Pin Name |
|-----|-----------------|
| 1 | V _{DD} |
| 2 | Output |
| 3 | GND |
| 4 | GND |
| 5 | GND |

Note: All Ground Pin must be connected to the ground in end application

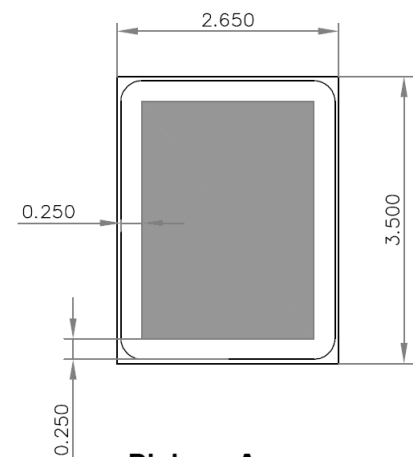
PICKUP TOOL PICK LOCATION & PCB SOLDER



PCB Solder Land Pad



Solder Stencil Pattern



Pick up Area

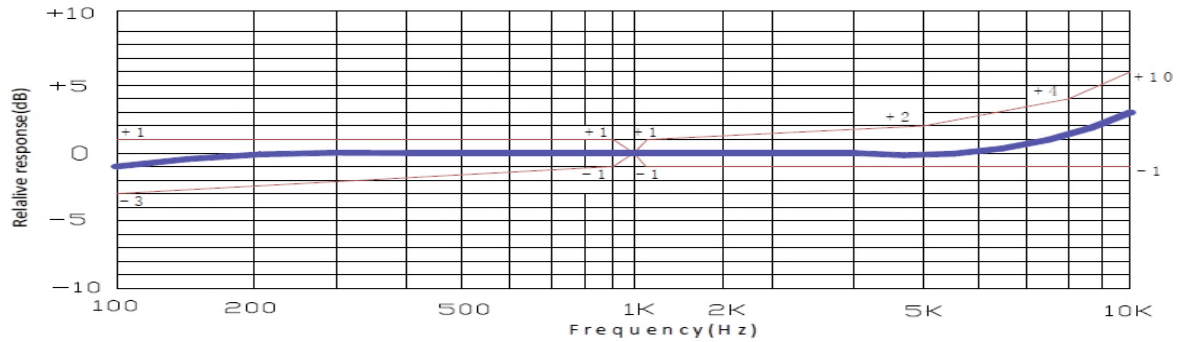
Notes:

Dimensions are in millimeters(mm) unless otherwise specified.

Tolerance is ± 0.1 mm unless otherwise specified.

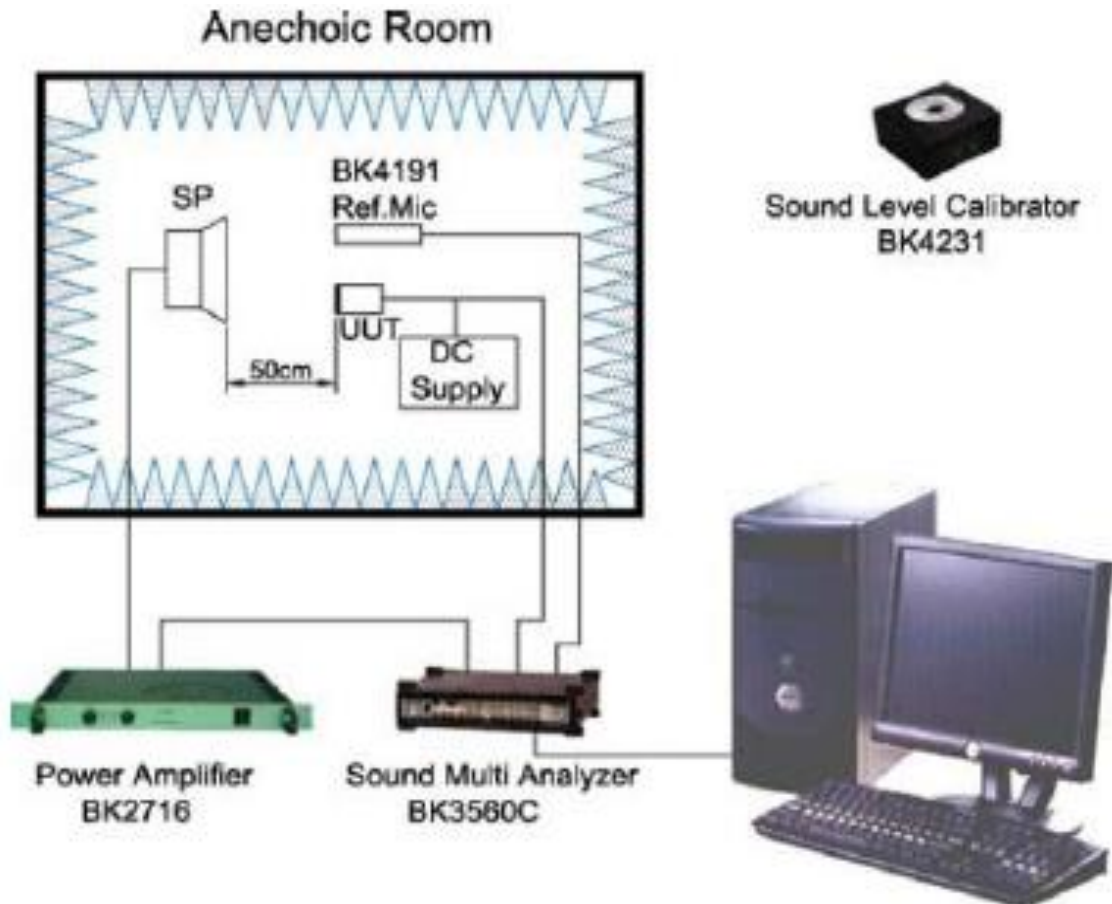
☒ The recommended non-plated hole("AP") diameter of PCB is 0.5-0.7mm.

FREQUENCY CHARACTERISTICS

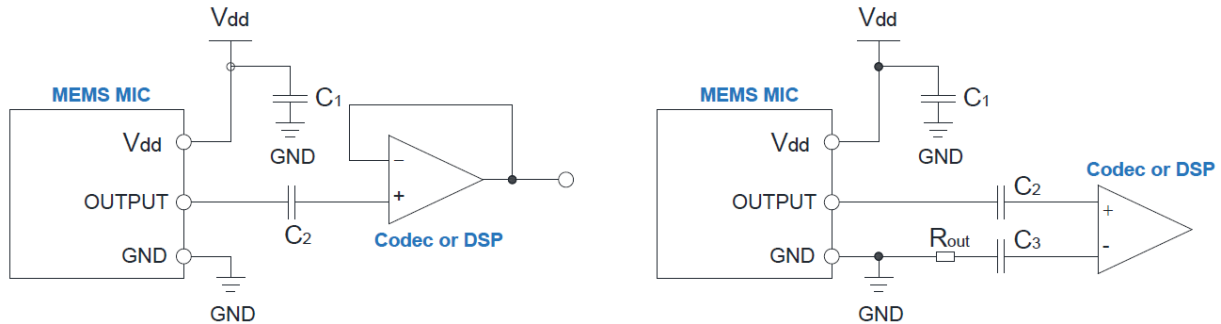


Frequency response curve normalized to 1kHz

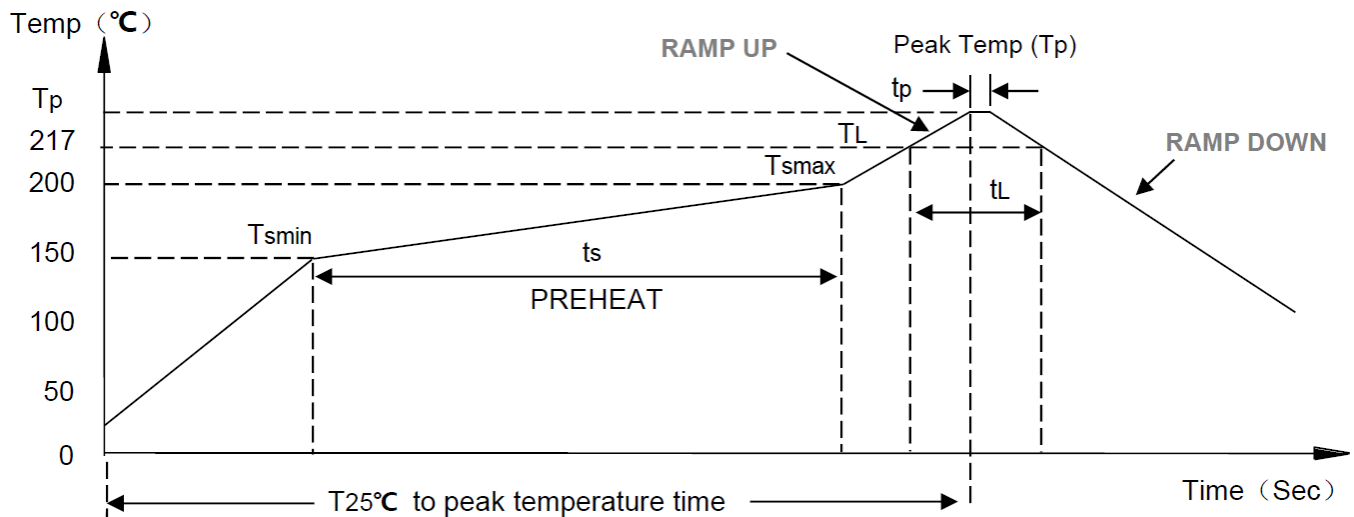
MEASUREMENT SYSTEM SETUP



TYPICAL APPLICATION CIRCUIT



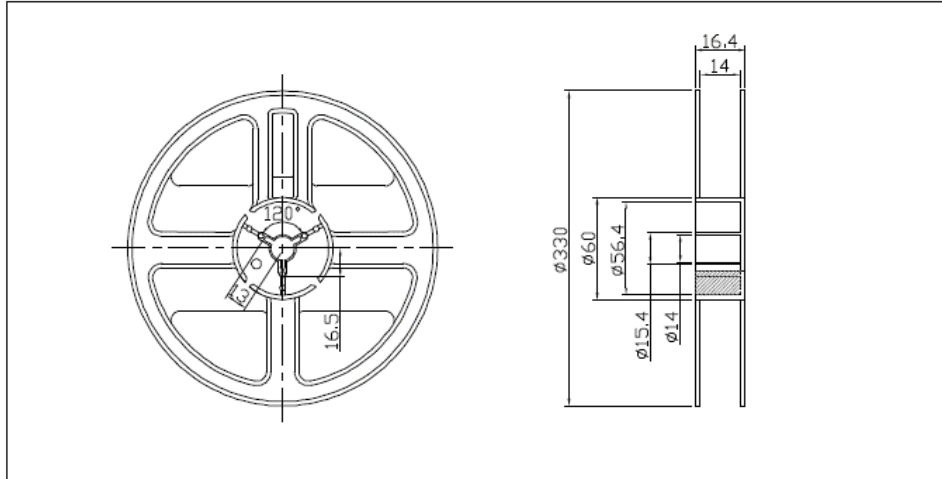
REFLOW PROFILE



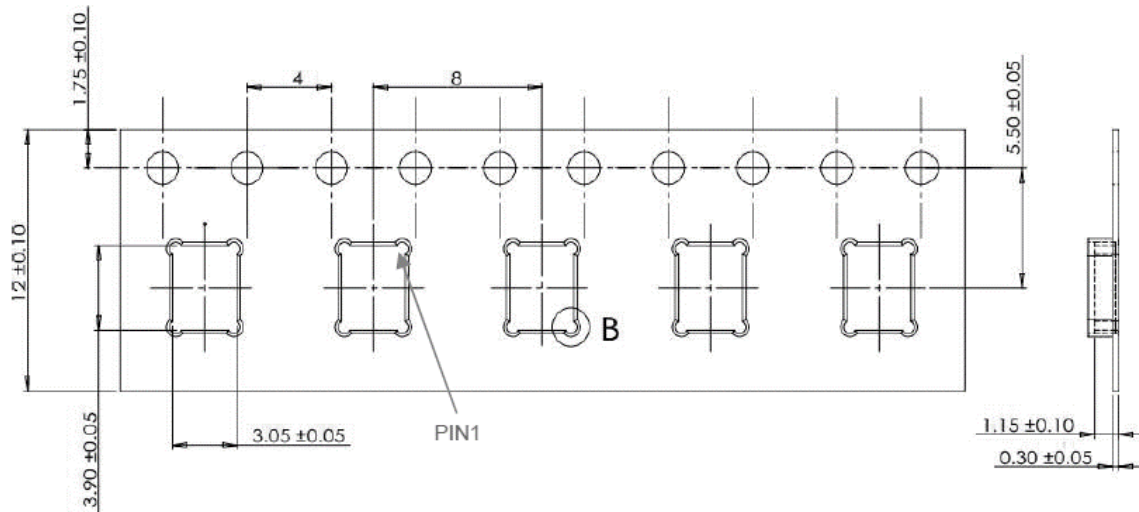
| Parameter | | Specification |
|---|---|------------------|
| Average temperature change rate (T _S MAX to T _P) | | 3°C /second max. |
| Preheat | Temperature min.(T _S MIN) | 150°C |
| | Temperature max.(T _S MAX) | 200°C |
| | Time T _S MIN to T _S MAX | 60-180 Seconds |
| Time Maintained Above Liquidous | | 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 (t ₂₅ °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 |

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