

GENERAL DESCRIPTION

42A3729H4 is an omnidirectional, Top-ported, analog output MEMS microphone. It has high performance and reliability.

42A3729H4 is available in a thin 3.76 mm × 2.95 mm × 1.1 mm metal cap LGA package. It is SMT compatible with no sensitivity degradation.

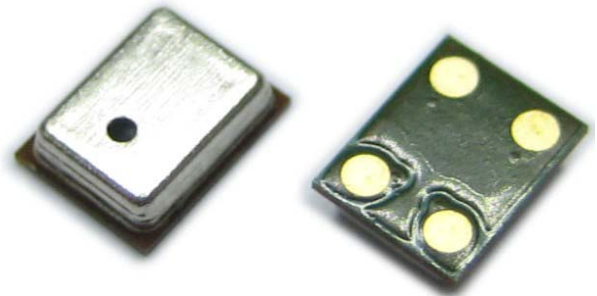
FEATURES

- ✧ Cost effective
- ✧ Omnidirectional
- ✧ Standard SMD Reflow
- ✧ Compatible with Sn/Pb and Pb-free solder processes
- ✧ RoHS/Halogen free compliant

APPLICATIONS

- ✧ Mobile Phone
- ✧ Laptop
- ✧ Tablet computer
- ✧ Bluetooth headset
- ✧ Earphone
- ✧ Wearable intelligent equipment

PRODUCT VIEW



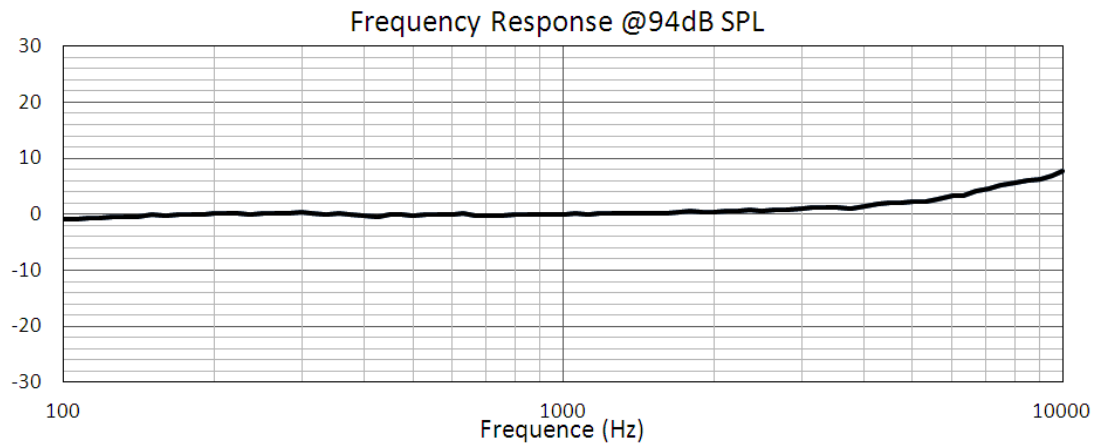
ABSOLUTE MAXIMUM RATINGS

Parameter	Maximum value	Unit
Supply Voltage	-0.3 to 4.0	V
Sound Pressure Level	140	dB SPL
Mechanical Shock	10,000	g
Temperature Range	-40 to 100	°C
Electrostatic discharge protection	8 (HBM)	kV

SPECIFICATIONS

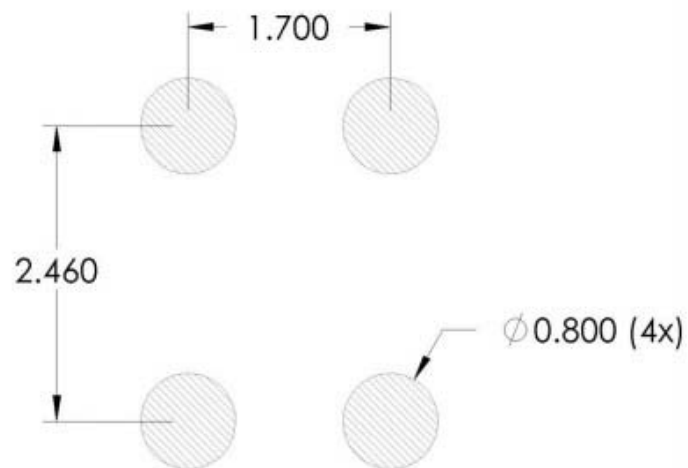
All data taken at 25°C, Relative Humidity 45±5% unless otherwise specified					
	Limits			unit	condition
	Min.	Nom.	Max.		
Directivity	Omni directional				
Sensitivity	-45	-42	-39	dB	@1kHz ref 1V/Pa
Operation voltage	1.5		3.6	V	
Freq. range	Refer to the frequency response			Hz	
Sensitivity loss across supply voltage	No change across the voltage range			dB	
Signal to noise ratio (A-weighted)		58	N/A	dB	@1kHz ref 1V/Pa
THD	N/A	N/A	1%		100dB SPL @1kHz
	N/A	N/A	10%		120dB SPL @1kHz
Out impedance	N/A	N/A	100	Ω	
PSRR		-73		dB	
Current consumption	N/A	N/A	180	μA	
Operating temperature	-40	N/A	100	°C	
Storage temperature	-40	N/A	100	°C	

TYPICAL FREQUENCY RESPONSE

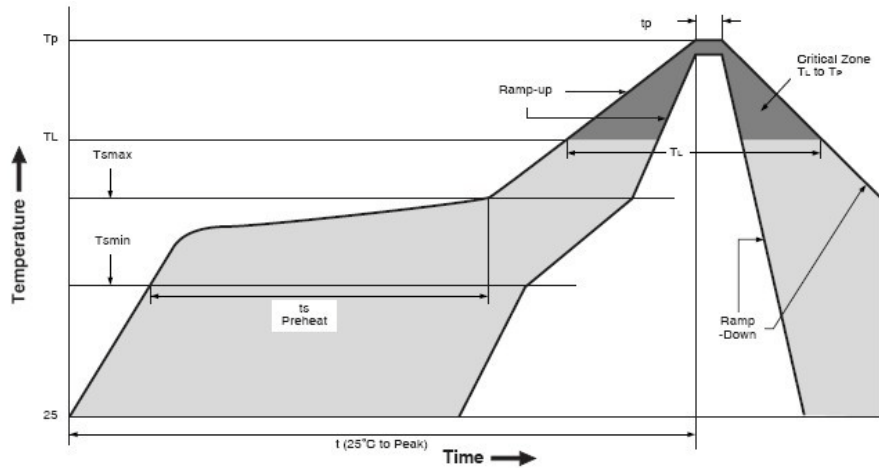


SMT Parameters:

1. Recommend PCB land pattern layout: (unit: mm)



2. Recommend reflow profile:

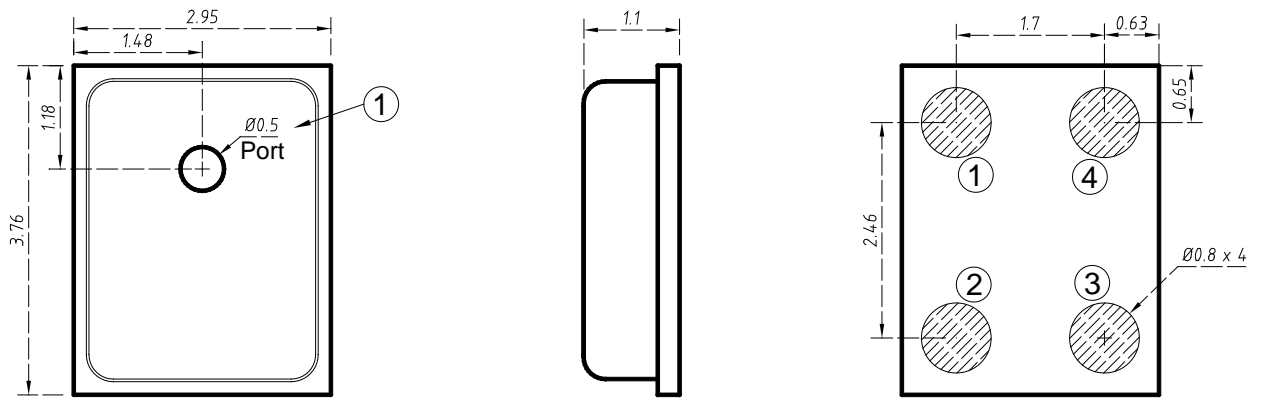


Description	Parameter	Pb-free
Average ramp rate	T_L to T_P	3 °C/sec max
Preheat		
Minimum temperature	T_{SMIN}	150 °C
Maximum temperature	T_{SMAX}	200 °C
Time(T_{SMIN} to T_{SMAX})	t_S	60 sec to 120 sec
Ramp-up rate	T_{SMAX} to T_L	
Time maintained above liquidous temperature	t_L	60 sec to 150 sec
Liquidous temperature	T_L	217 °C
Peak temperature	T_P	260 °C max
Time within 5°C of actual peak temperature		20 sec to 40 sec
Ramp-down rate		6 °C/sec max
Time 25 °C ($t_{25 °C}$) to peak temperature		8 minutes max

3. note:

When washing the PCB, ensure that water does not make contact with the microphone port.
Do not use blow-off procedures or ultrasonic cleaning.

OUTLINE DIMENSIONS AND PIN DEFINITION:

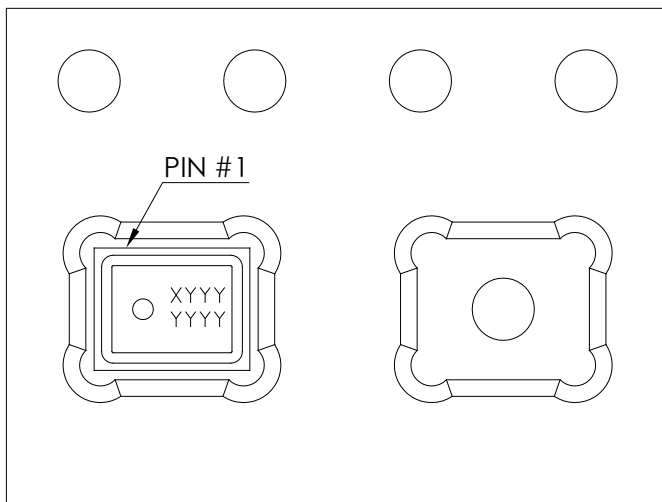
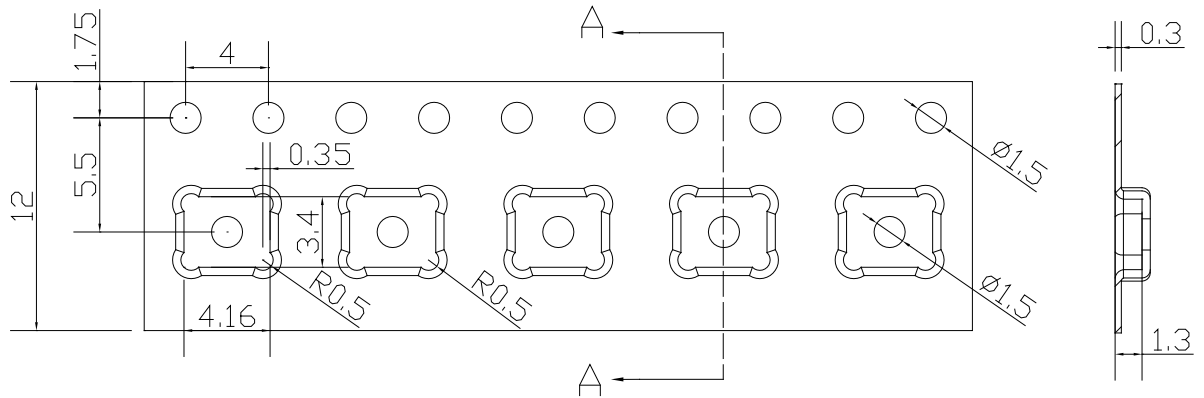


Dimensions are in millimeters
Tolerance is ± 0.1 mm unless otherwise specified.

PIN function description

PIN#	Function
1	VDD
2	GND
3	GND
4	OUT

PACKAGING & MARKING DETAIL:



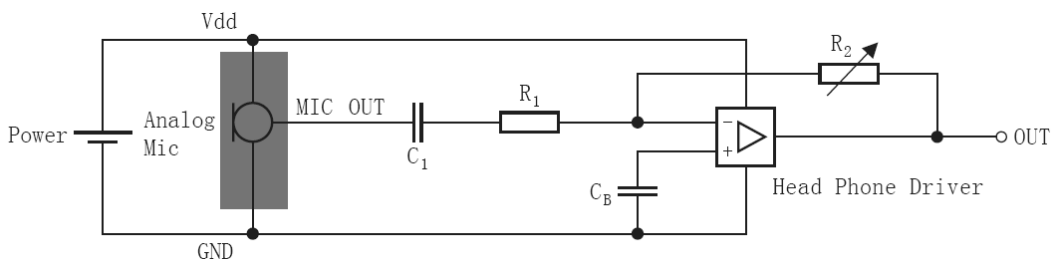
Note: Dimensions are in mm.

**Component
Orientation**

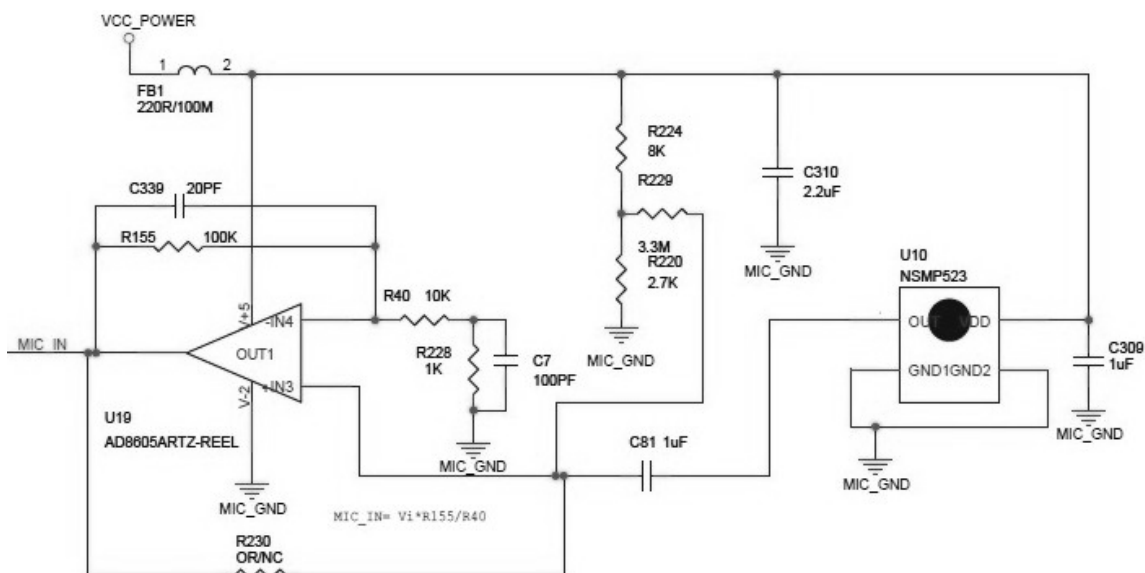
Model Number	Reel Diameter	Quantity Per Reel
42A3729H4	13 inch	5000
	7 inch	1000

RECOMMENDED INTERFACE CIRCUIT:

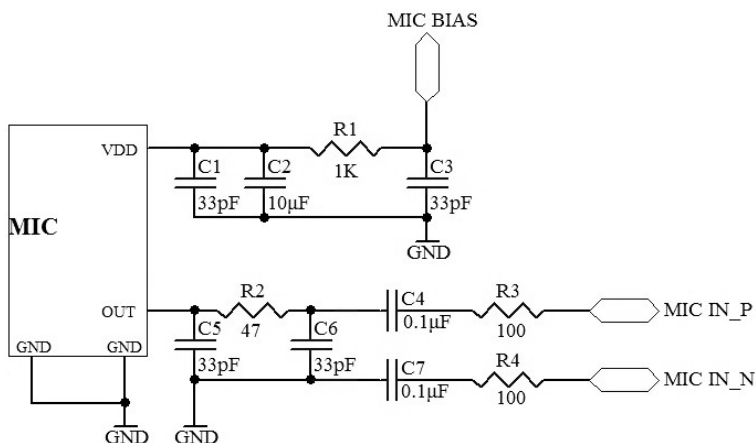
- **Demonstrator Application Circuit**



- **Recommended Application Example 1(single end amplification with OP)**



- **Recommended Application Example 2 (differential amplification circuit)**



REVISION HISTORY:

Revision	Subjects (major changes since last revision)	Date
1.0	Initial Release	2013-5-15
1.1	Update the application circuit. Increase the PSRR.	2013-9-10
1.2	Update the outline drawing.(increase the distance from the acoustic port to the edge)	2013-10-11
1.3	Update the packaging detail. (increase the laser text)	2013-10-22
1.4	Update page layout & contact information	2013-12-11