

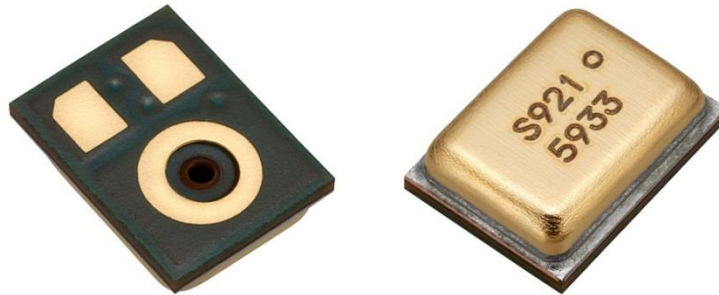
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Low Noise ZeroHeight SiSonic™ Microphone



The SPA2629LR5B is a miniature, high performance, low power, bottom port high performance SiSonic™ MEMS technology, the SPA2629LR5B consists of an acoustic sensor, a low noise input buffer, and an output amplifier. These devices are suitable for applications such as cellphones, smart phones, laptop computers, sensors, digital still cameras, portable music recorders, and other portable electronic devices where excellent wideband audio performance and RF immunity are required.

Features:

- < Very Low Noise
- < Flat Frequency Response
- < Small package
- < Low Current
- < MaxRF protection
- < ZeroHeight Mic™
- < UltraStable Performance
- < Standard SMD Reflow
- < Omnidirectional

1. ABSOLUTE MAXIMUM RATINGS

Parameter	Absolute Maximum Rating	Units
V _{DD} to Ground	-0.5, +5.0	V
OUT to Ground	-0.3, V _{DD} + 0.3	V
Input Current to Any Pin	±5	mA
Temperature Range	-40 to +100	°C

device reliability.

2. ACOUSTIC & ELECTRICAL SPECIFICATIONS

TEST CONDITIONS: 23 ± 2°C, 20% R.H., V_{DD} = V_{DD(max)}, no load, unless otherwise indicated

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Supply Voltage	V _{DD}		1.5	-	3.6	V
Supply Current ¹	I _{DD}		-	120	165	µA
Sensitivity	S	94 dB SPL @ 1 kHz	-41	-38	-35	dBV/Pa
Signal to Noise Ratio	SNR	94 dB SPL @ 1 kHz, A-weighted	-	65	-	dB(A)
Total Harmonic Distortion	THD	94 dB SPL @ 1 kHz, S = Typ, R _{load} > 2k	-	0.2	-	%
Acoustic Overload Point	AOP	10%THD @ 1 kHz, S = Typ, V _{DD} = 1.8V, R _{load} > 2k	-	123	-	dB SPL
Power Supply Rejection Ratio	PSRR	100 mVpp sine wave, 2010 kHz, V _{DD} = 2.75V	-	66	-	dB
Power Supply Rejection	PSR	100 mVpp square wave @ 217 Hz, V _{DD} = 1.8V, A-weighted	-	-95	-	dBV(A)
DC Output		V _{DD} = 1.5V	-	1.09	-	V
Output Impedance	Z _{OUT}	@ 1 kHz	-	-	400	K
Directivity			Omnidirectional			
Polarity		Increasing ground pressure	Increasing output voltage			

¹100% tested

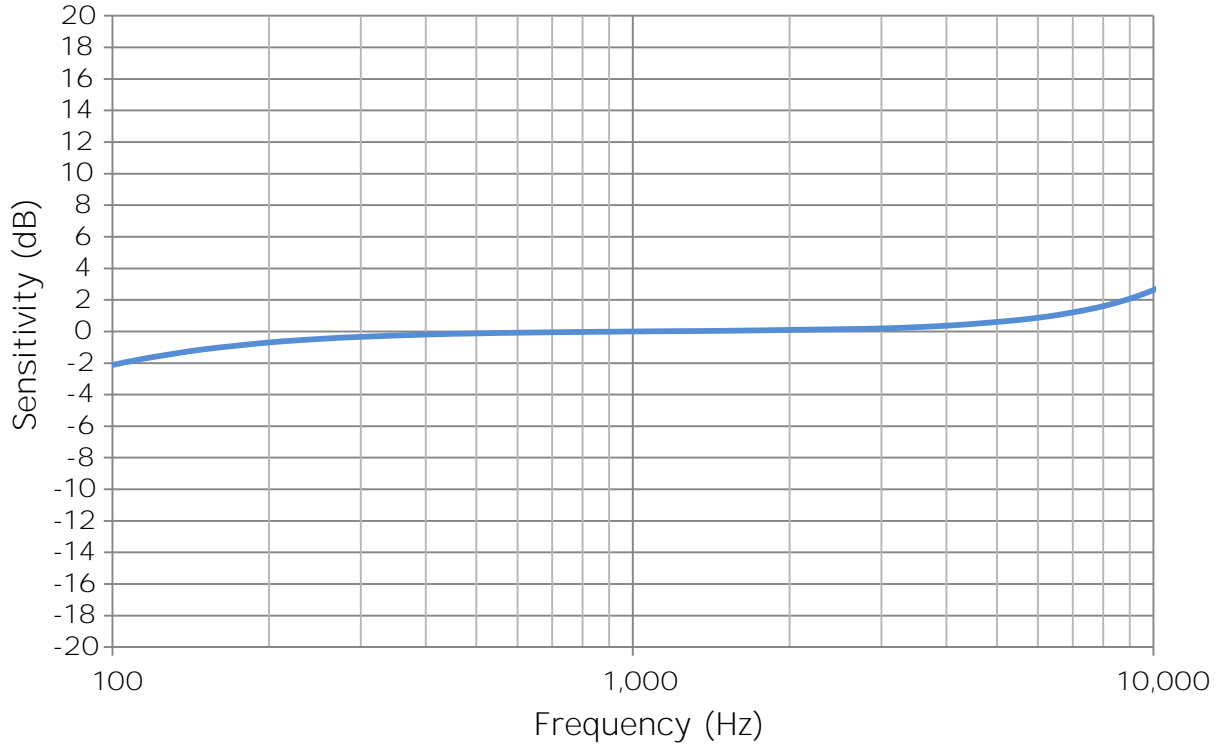
²Maximum specifications are measured at maximum typical specifications measured at V_{DD} = 1.8V.



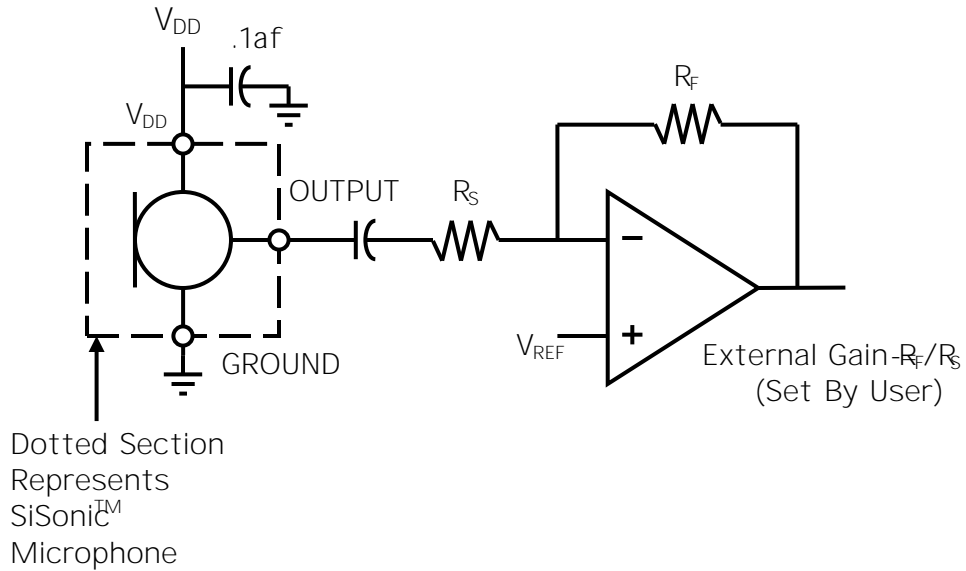
SPA2629LR5B

3. FREQUENCY RESPONSE CURVE

Typical Free Field Response
Normalized to 1 kHz



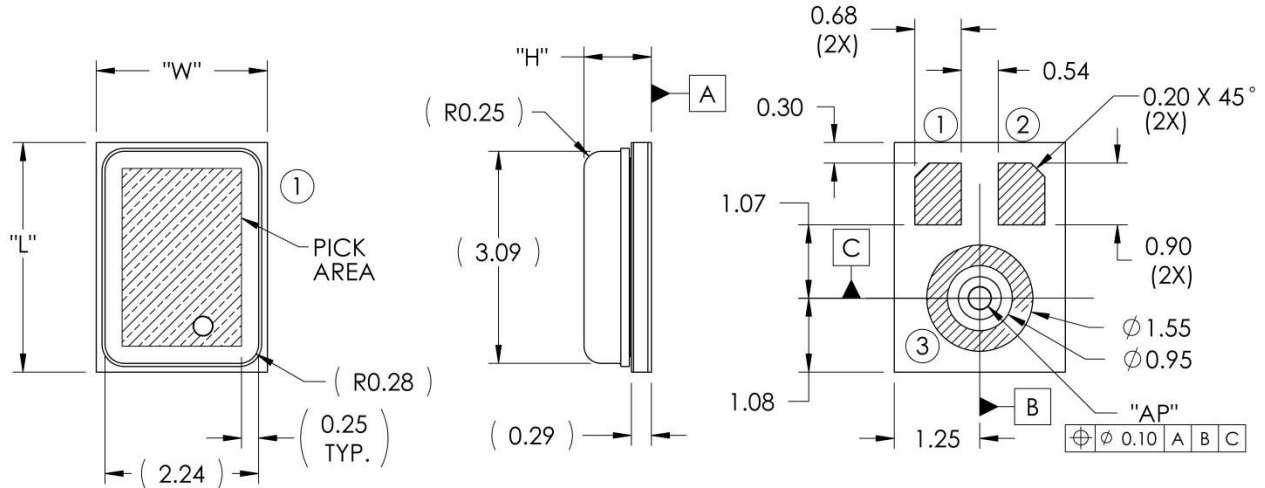
4. INTERFACE CIRCUIT



Note: Capacitors near the microphone should not contain dielectrics.

Detailed information on acoustic, mechanical and system integration can be found in the latest SiSonic™ Design Guide application note.

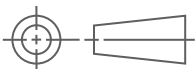
5. MECHANICAL SPECIFICATIONS



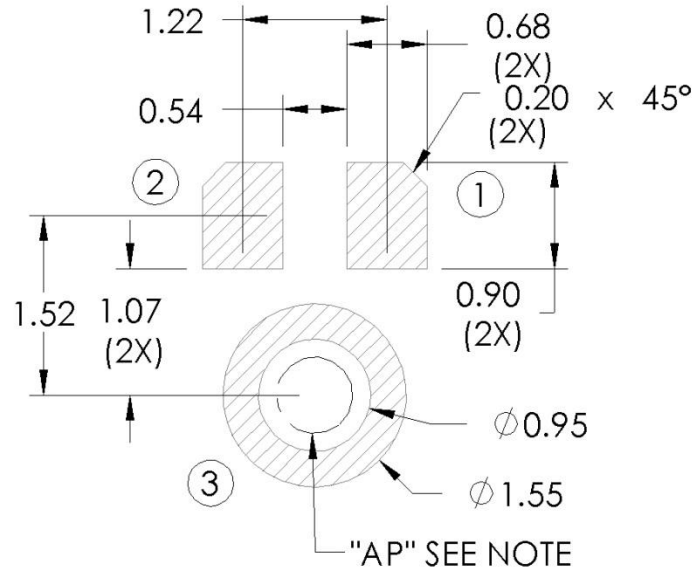
Item	Dimension	Tolerance
Length (L)	3.35	± 0.10
Width (W)	2.50	± 0.10
Height (H)	0.98	± 0.10
Acoustic Port (A)	$\phi 0.25$	± 0.05

Pin #	Pin Name	Type	Description
1	V _{DD}	Power	Power Supply
2	OUTPUT	Signal	Output Signal
3	GROUND	Power	Ground

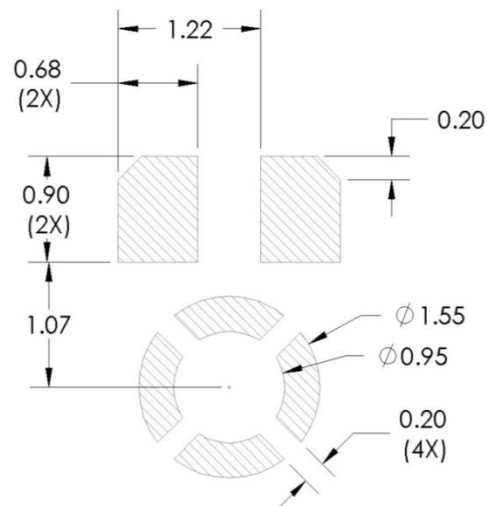
Notes: Pick Area only extends to 0.25 mm of any edge or hole unless otherwise specified.
 Dimensions are in millimeters unless otherwise specified.
 Tolerance is ± 0.15 mm unless otherwise specified.



6. EXAMPLE LAND PATTERN



7. EXAMPLE SOLDER STENCIL PATTERN



Notes: Dimensions are in millimeters unless otherwise specified.

Detailed information on AP size considerations can be found in the latest *Design Guide* application note.

Further optimizations based on application should be performed.



SPA2629LR5B

8. PACKAGING & MARKING DETAIL

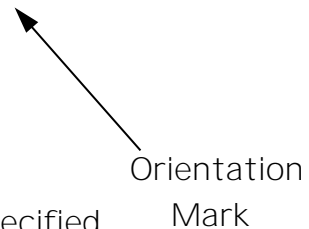
Model Number	Suffix	Reel Diameter	Quantity Per Reel
SPA2629LR5B	-8		5,900

Alpha Character A

- S Knowles SiSonic™ Production
- E Knowles Engineering Samples
- h M h o
- U Knowles SiSonic™ Production Malaysia
- # Knowles SiSonic™ Production China (Suzhou)

K @ V V y U " - k
 Unique Job Identification Number
 for product traceability

"A" JIN
 NUMBER



Notes: Dimensions are in millimeters unless otherwise specified.
 Vacuum pickup only in the pick area indicated in Mechanical Specifications.
 Tape & reel per E481.
 Labels applied directly to reel and external package.
 Shelf life: Twelve (12) months when devices are to be stored in factory supplied, unopened ESD moisture barrier bag under maximum environmental conditions of 30°C, 70% R.H.