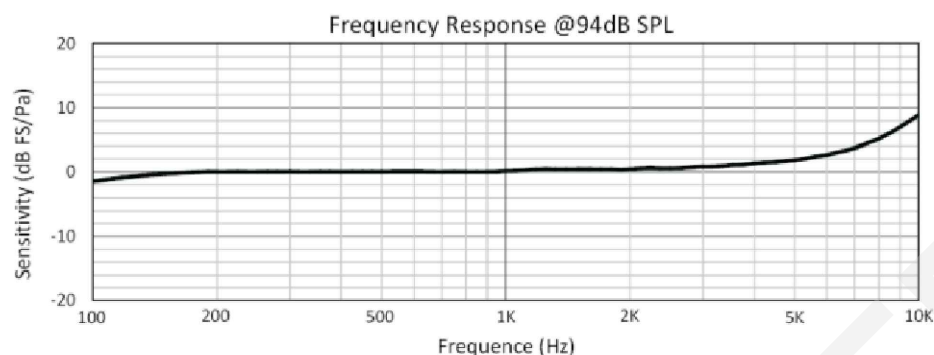


Typical Measurements Results :



Typical frequency response curve relative to the sensitivity at a frequency of 1 kHz

ORDER INFORMATION

Product NO: RHTCYEMS 4737H12-263

Silicon MEMS Omni-directional
Microphone

Dimensions

Sensitivity

Features:

- 1.SMD MEMS microphone for automated surface mount assembly
- 2.Reflow soldering up to 260°C(Lead free)
- 3.High long-term temperature stability
- 4.Stable sensitivity over power supply range of 0.3~4.0V
- 5.Low current consumption of 80uA
- 6.Excellent power supply rejection of -72dB
- 7.High integrated immunity to EMI
- 8.RoHS-compliant, halogen-free package with small footprint and low height of 1.25mm

Applications.

- 1.Mobile Phones (Handsets, Headsets)
- 2.Consumer (Game Consoles, PDA's)
- 3.Computer (Personal Computers, Notebooks)
- 4.Cameras (Digital Still Cameras, Video Cameras)
- 5.Navigation Device(Portable GPS)
- 6.Blue-tooth (Headsets)

Max. Ratings

Storage Temperature:TSTG-40°C~100°C

Operating Temperature Range:TA-40°C~100°C

Operating Voltage Range:VDD 1.6V~3.3V

Typical robustness to electrostatic discharge

ESD capability all pins (HBM, JESD22-A114)VESD_HBM 4 kV

ESD capability all pins (MM, JESD22-A115)VESD_MM 400 V



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UNITS:mm

SHEET SIZE: A4

SCALE:---

DRWN BY PAN

Silicon MEMS Omni-directional Microphone

0~3

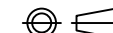
3~18

18~50

50~120

CHK'D BY FENG

THIRD ANGLE PROJECTION



RHTCYEMS4737H12-263

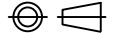
±0.12

±0.15

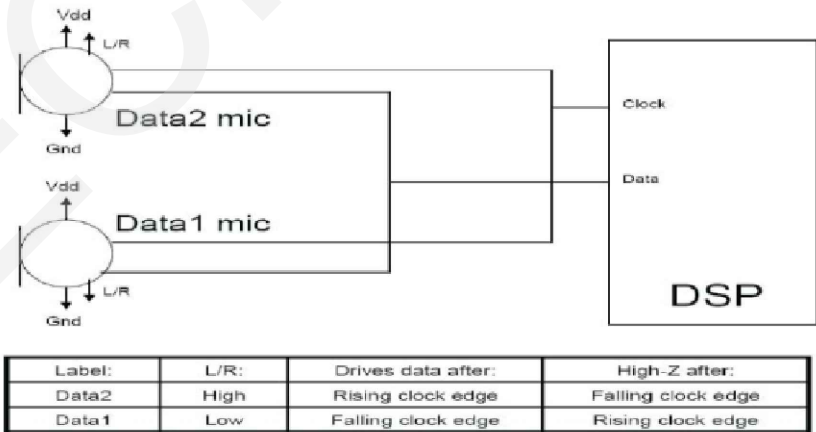
±0.3

±0.5

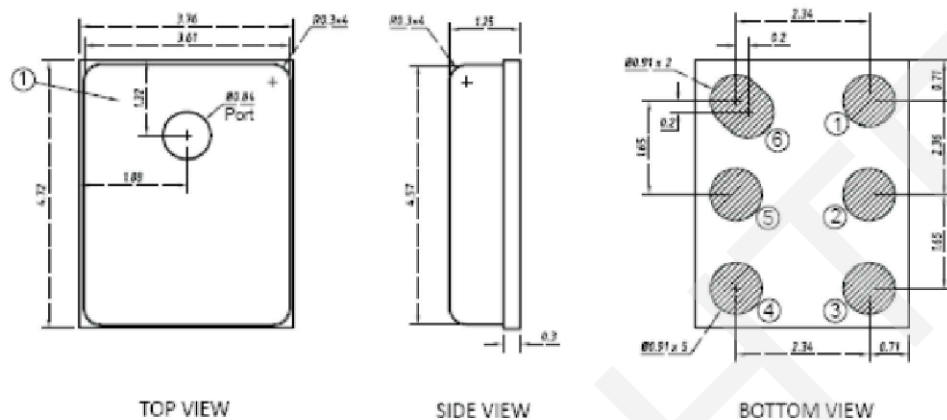
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C	Acoustical and Electrical Characteristics Unless otherwise noted, typical test conditions are TA = 23 °C, VDD = 2.1 V and R.H. = 50 % measured in a pressure chamber test setup. All voltages refer to GND node <table><thead><tr><th rowspan="2">Parameter</th><th rowspan="2">Symbol</th><th colspan="3">Values</th><th rowspan="2">Unit</th><th rowspan="2">Note / Test Condition</th></tr><tr><th>Min.</th><th>Typ.</th><th>Max.</th></tr></thead><tbody><tr><td>Sensitivity 1 kHz</td><td>S1kHz</td><td>-29</td><td>-26</td><td>-23</td><td>dB(V/Pa)</td><td>1 kHz, 94 dB SPL</td></tr><tr><td>PSR</td><td></td><td></td><td>-72</td><td></td><td>dB</td><td>dBFS(A)</td></tr><tr><td>Freq. range</td><td colspan="4">Refer to the frequency response</td><td>Hz</td><td>Relative to sensitivity 1 kHz</td></tr><tr><td>Sensitivity loss across supply voltage</td><td colspan="4">No change across the voltage range</td><td>dB</td><td></td></tr><tr><td>Signal-to-Noise Ratio</td><td></td><td></td><td>57</td><td></td><td>dB(A)</td><td>A-weighted</td></tr><tr><td rowspan="2">Total Harmonic Distortion</td><td rowspan="2">THD</td><td></td><td></td><td>1</td><td>%</td><td>100 dB SPL, 1 kHz</td></tr><tr><td></td><td></td><td>10</td><td>%</td><td>120 dB SPL, 1 kHz</td></tr><tr><td>Clock frequency</td><td></td><td>1.5</td><td>2.4</td><td>3.5</td><td>MHz</td><td></td></tr><tr><td>Clock duty cycle</td><td></td><td>40</td><td></td><td>60</td><td>%</td><td></td></tr><tr><td>Logic low</td><td></td><td>0.3</td><td></td><td>0.35 xVdd</td><td>V</td><td></td></tr><tr><td>Logic high</td><td></td><td>0.65 xVdd</td><td></td><td>Vdd + 0.3</td><td>V</td><td></td></tr><tr><td rowspan="2">Current Consumption</td><td rowspan="2">Icc</td><td></td><td></td><td>700</td><td>u A</td><td rowspan="2">Clock frequency<1KHz</td></tr><tr><td></td><td></td><td>50</td><td></td></tr><tr><td>Delay time for valid data</td><td></td><td>20</td><td></td><td>40</td><td>ns</td><td></td></tr><tr><td>Delay time for High Z</td><td></td><td>0</td><td></td><td>15</td><td>ns</td><td></td></tr><tr><td colspan="7">1) Psophometrically weighted noise measurement with CCITT-filter (ITU-T Rec. P.53)</td></tr><tr><td colspan="7">2) Noise measurement with A-weighting filter (IEC 651)</td></tr></tbody></table>									Parameter	Symbol	Values			Unit	Note / Test Condition	Min.	Typ.	Max.	Sensitivity 1 kHz	S1kHz	-29	-26	-23	dB(V/Pa)	1 kHz, 94 dB SPL	PSR			-72		dB	dBFS(A)	Freq. range	Refer to the frequency response				Hz	Relative to sensitivity 1 kHz	Sensitivity loss across supply voltage	No change across the voltage range				dB		Signal-to-Noise Ratio			57		dB(A)	A-weighted	Total Harmonic Distortion	THD			1	%	100 dB SPL, 1 kHz			10	%	120 dB SPL, 1 kHz	Clock frequency		1.5	2.4	3.5	MHz		Clock duty cycle		40		60	%		Logic low		0.3		0.35 xVdd	V		Logic high		0.65 xVdd		Vdd + 0.3	V		Current Consumption	Icc			700	u A	Clock frequency<1KHz			50		Delay time for valid data		20		40	ns		Delay time for High Z		0		15	ns		1) Psophometrically weighted noise measurement with CCITT-filter (ITU-T Rec. P.53)							2) Noise measurement with A-weighting filter (IEC 651)						
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Schematic Measuring Diagram :



Package Outline

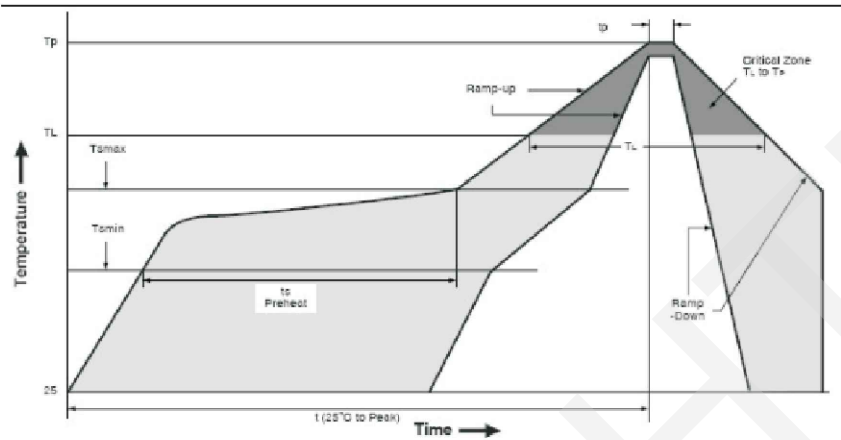


PIN function description

PIN#	Function
1	GND
2	L/R
3	GND
4	CLK
5	DATA
6	VDD

Item	Dimension	Tolerance
Length (L)	4.72	±0.10
Width (W)	3.76	±0.10
Height (H)	1.25	±0.10
Acoustic Port (AP)	Ø0.84	±0.10

Dimensions are in millimeters
Tolerance is ±0.15mm unless otherwise specified.



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	1.25 °C/sec max
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	t_P	20 sec to 40 sec
Ramp-down rate	T_L to T_P	6 °C/sec max
Time 25 °C (t_{25} °C) to peak temperature	t	8 minutes max



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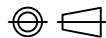
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