



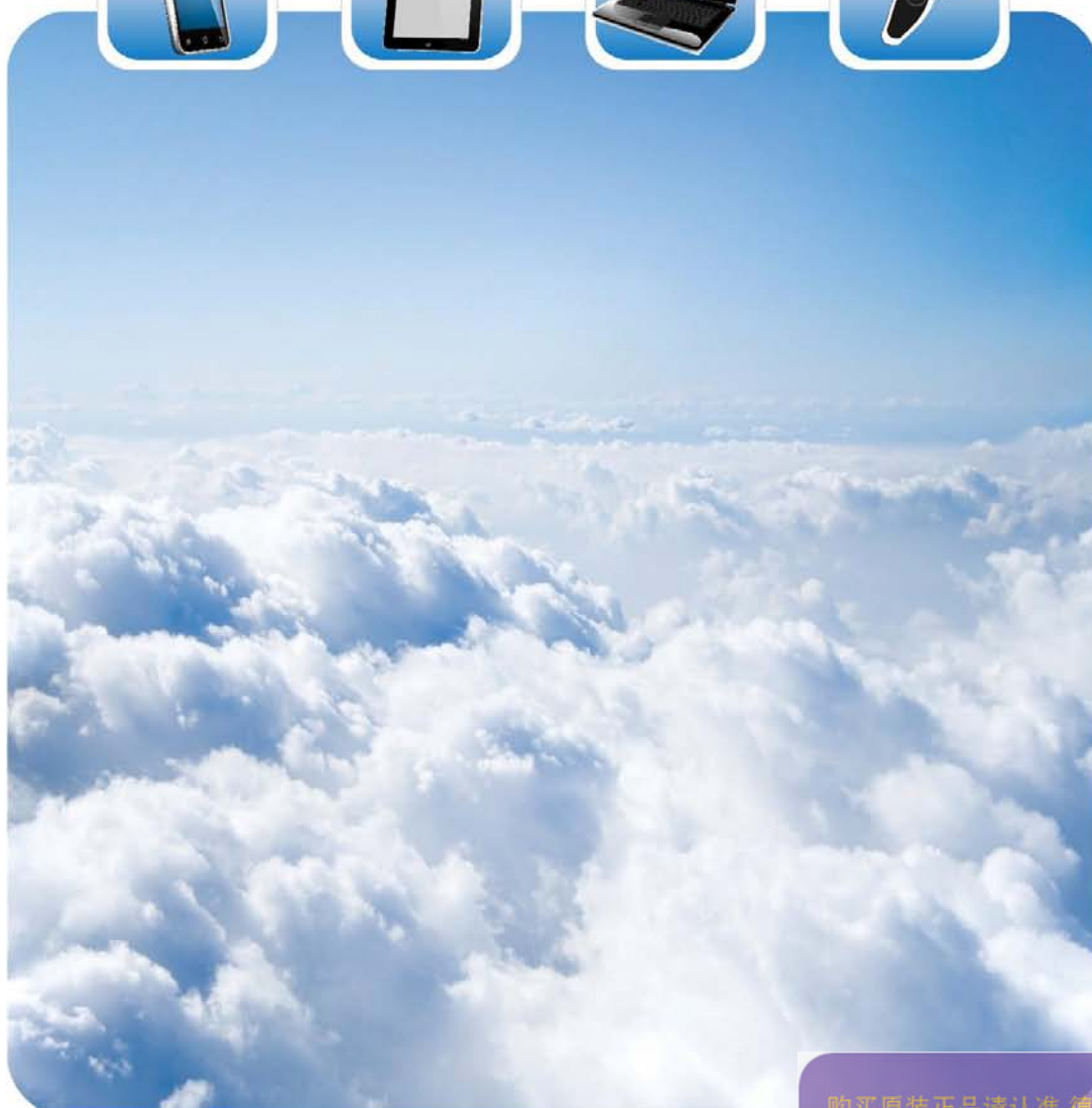
苏州敏芯微电子技术有限公司
MEMSensing Microsystems Co., Ltd

Data Sheet

V 1.4 / Feb. 2014

MSM26D4030H3

PDM digital output MEMS microphone



购买原装正品请认准 德方电子
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MSM26D4030H3

PDM digital output MEMS microphone



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GENERAL DESCRIPTION

MSM26D4030H3 is an omnidirectional, Top-ported, PDM digital output MEMS microphone. It has high performance and reliability.

MSM26D4030H3 is available in a thin 4 mm × 3 mm × 1 mm metal cap LGA package. It is SMT compatible with no sensitivity degradation.

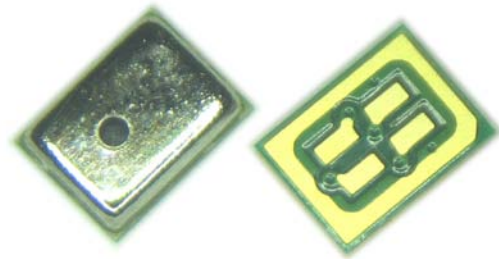
APPLICATIONS

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

FEATURES

- ✧ Cost effective
- ✧ Fourth-order Σ - Δ modulator
- ✧ Digital PDM output
- ✧ Compatible with Sn/Pb and Pb-free solder processes
- ✧ RoHS/Halogen free compliant

PRODUCT VIEW



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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

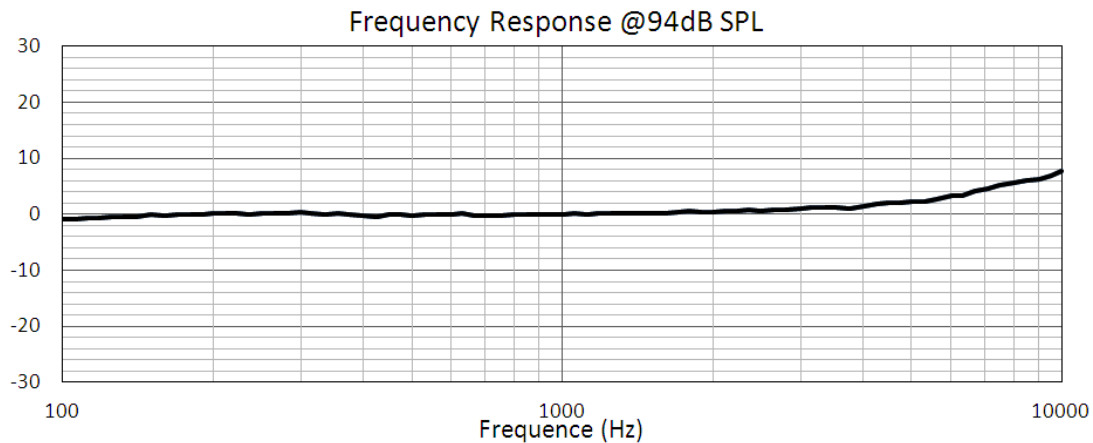
SPECIFICATIONS

All data taken at 25°C, Relative Humidity 45±5% unless otherwise specified

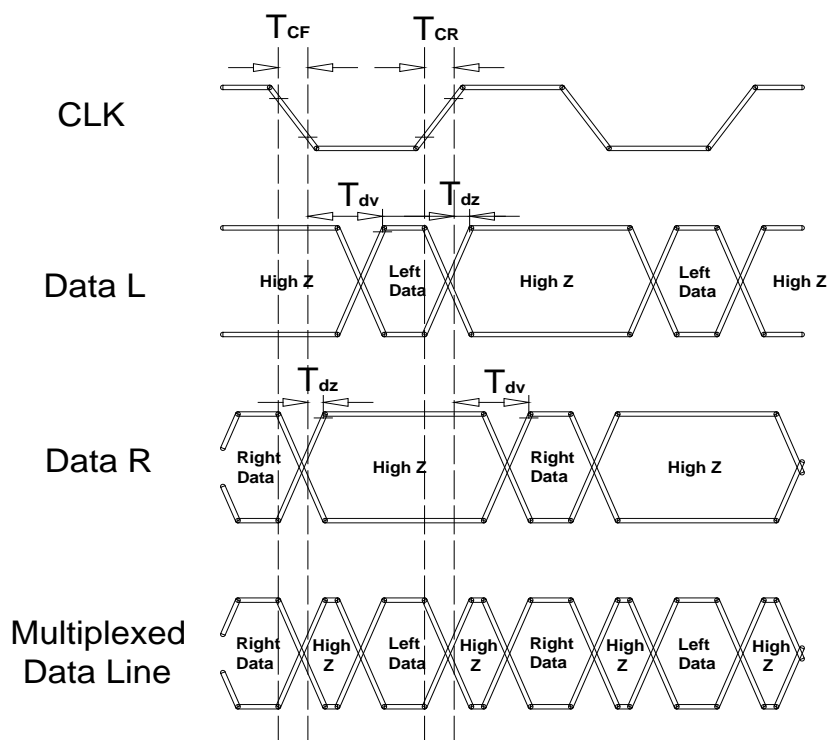
	Limits			unit	condition
	Min.	Nom.	Max.		
Directivity	Omni directional				
Sensitivity	-29	-26	-23	dB	dBFS @1kHz 1Pa
Operation voltage	1.6		3.6	V	
Freq. range	Refer to the frequency response			Hz	
Sensitivity loss across supply voltage	No change across the voltage range			dB	
Signal to noise ratio (A-weighted)	N/A	56		dB	@1kHz ref 1V/Pa
THD	N/A	N/A	1%		100dB SPL @1kHz
	N/A	N/A	10%		120dB SPL @1kHz
Data format					1/2 cycle PDM
Clock frequency	1	2.4	3.5	MHz	
Clock duty cycle	40		60	%	
Logic low	-0.3		0.35xVdd	V	
Logic high	0.65xVdd		Vdd+0.3	V	
Delay time for valid data	20		40	ns	
Delay time for High Z	0		15	ns	
Current consumption	N/A	N/A	700	µA	
Operating temperature	-40	N/A	100	°C	
Storage temperature	-40	N/A	100	°C	



TYPICAL FREQUENCY RESPONSE



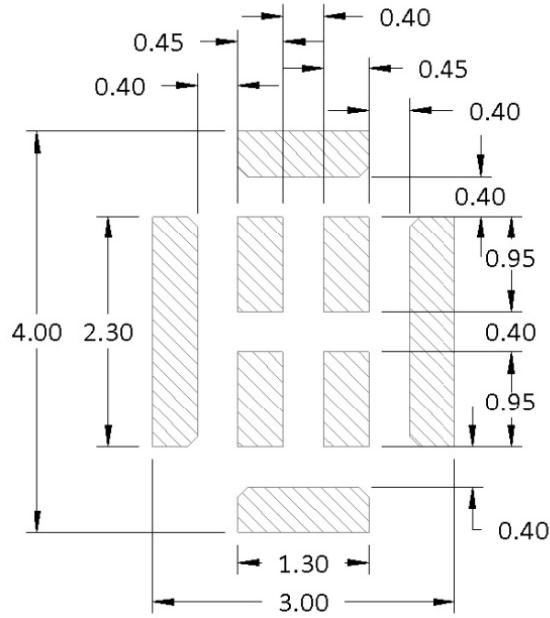
TIMING DIAGRAM



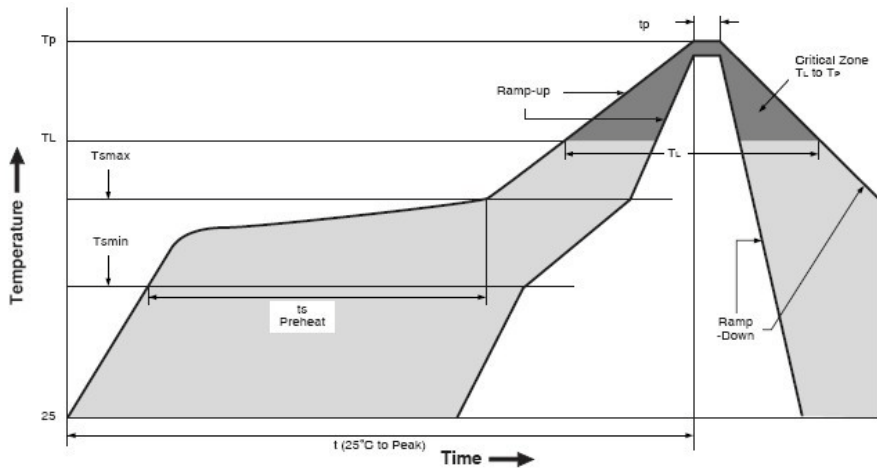


SMT Parameters:

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



2. Recommend reflow profile:



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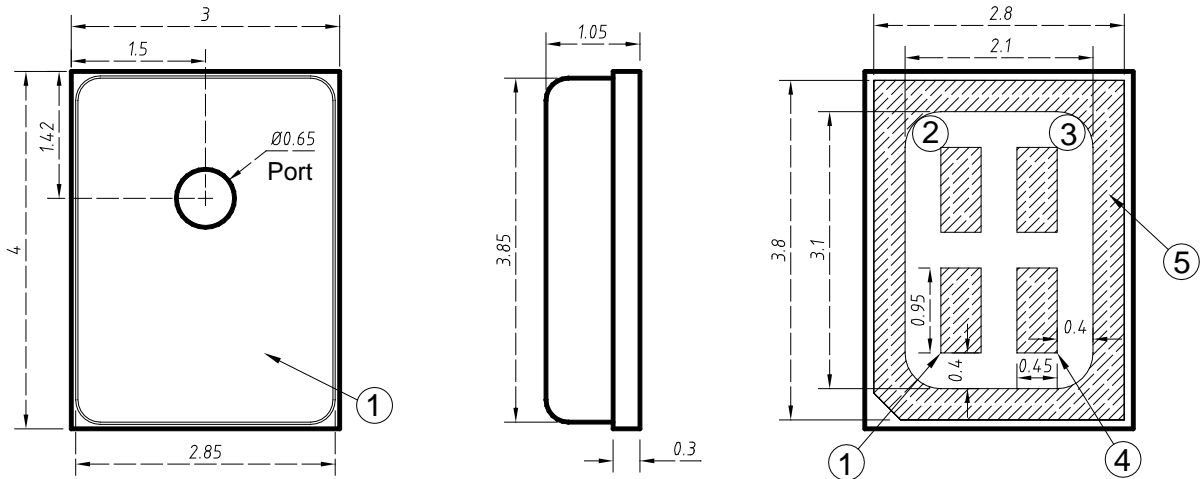
Description	Parameter	Pb-free
Average ramp rate	T_L to T_P	3 °C/sec max
Preheat		
Minimum temperature	T_{SMIN}	150 °C
Maximum temperature	T_{SMAX}	200 °C
Time(T_{SMIN} to T_{SMAX})	t_s	60 sec to 120 sec
Ramp-up rate	T_{SMAX} to T_L	
Time maintained above liquidous temperature	t_L	60 sec to 150 sec
Liquidous 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:



PIN function description

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

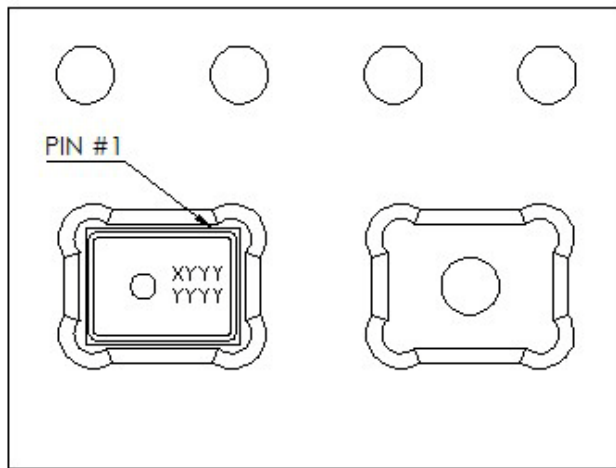
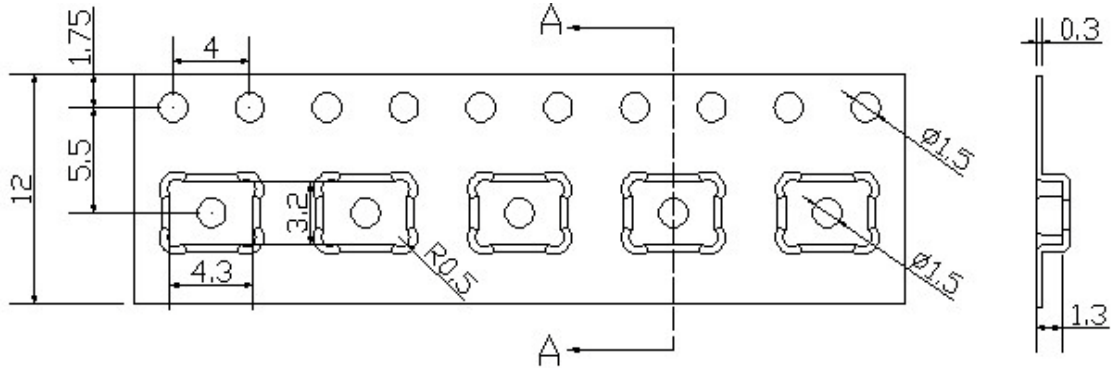
Item	Dimension	Tolerance
Length (L)	4.00	±0.10
Width (W)	3.00	±0.10
Height (H)	1.05	±0.10
Acoustic Port (AP)	Ø0.65	±0.10

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

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PACKAGING & MARKING DETAIL:

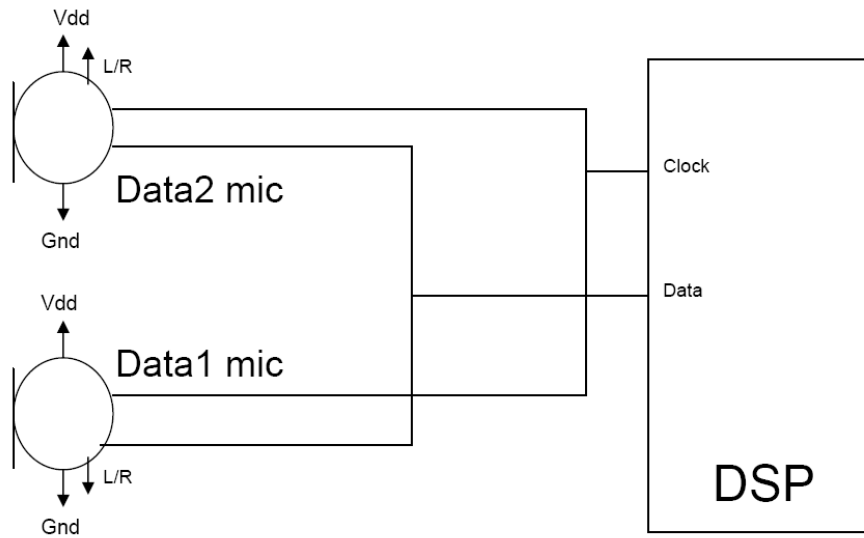


Note: Dimensions are in mm.

Model Number	Reel Diameter	Quantity Per Reel
MSM26D4030H3	13 inch	5000
	7 inch	1000



RECOMMENDED INTERFACE CIRCUIT:



Label:	L/R:	Drives data after:	High-Z after:
Data2	High	Rising clock edge	Falling clock edge
Data1	Low	Falling clock edge	Rising clock edge

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REVISION HISTORY:

Revision	Subjects (major changes since last revision)	Date
1.0	Initial Release	2013-7-25
1.1	Update the outline drawing.(increase the distance from the acoustic port to the edge)	2013-10-11
1.2	Update the packaging detail. (increase the laser text)	2013-10-22
1.3	Update page layout & contact information	2013-11-21
1.4	Update the outline drawing.(increase the dimension of the cap and the specific tolerance)	2014-2-20