

# APPROVAL SHEET

Customer:	
Description:	MEMS Microphone
Model:	CMM4030DT-106H61S261
Customer P/N:	

Issued by	Checked by	Appoved by	Customer

## HUNSTON ELECTRONICS LIMITED

Website: [hunston.com.hk](http://hunston.com.hk)  
Email: [sales@hunston.com.hk](mailto:sales@hunston.com.hk)  
Tel: +852 3591 1490  
Fax: +852 3591 1491

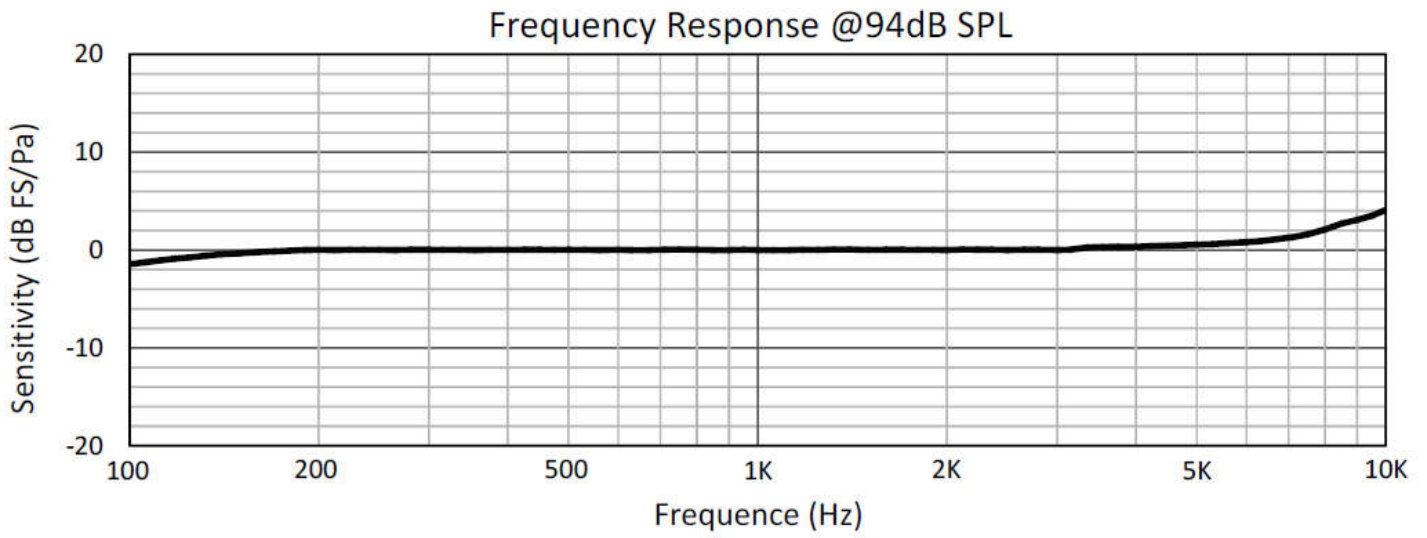
## ABSOLUTE MAXIMUM RATINGS

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	2 (HBM)	kV

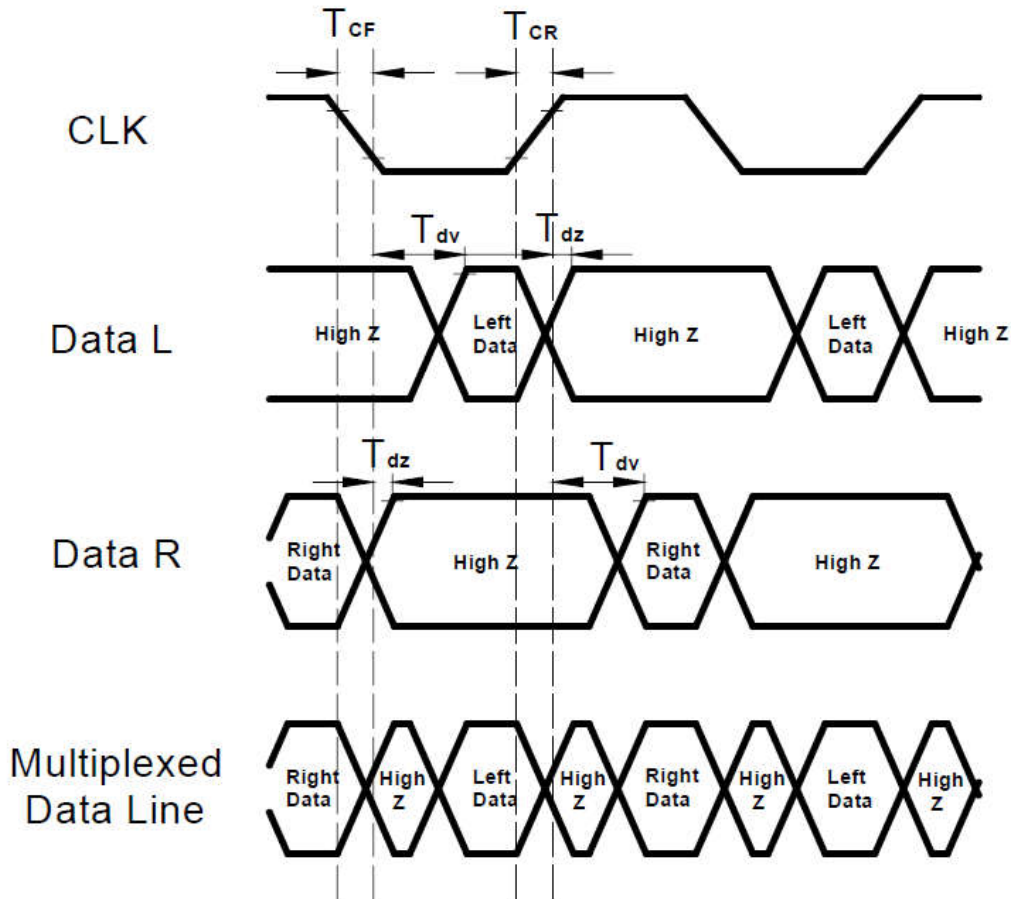
## SPECIFICATIONS

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Supply Voltage <sup>1</sup>	V <sub>DD</sub>		1.6	-	3.6	V
Supply Current <sup>1,2,3</sup>	I <sub>DD</sub>		-	650	-	μA
Sleep Current <sup>3</sup>	I <sub>SLEEP</sub>	F <sub>CLOCK</sub> < 1 kHz	-	25	50	μA
Sensitivity <sup>1</sup>	S	94 dB SPL @ 1 kHz	-27	-26	-25	dBFS
Signal to Noise Ratio	SNR	94 dB SPL @ 1 kHz, A-weighted	-	61	-	dB(A)
Total Harmonic Distortion	THD	94 dB SPL @ 1 kHz, S = Typ	-	.10	.35	%
Acoustic Overload Point	AOP	10% THD @ 1 kHz, S = Typ	119	122	-	dB SPL
Power Supply Rejection Ratio	PSRR	200 mVpp sinewave @ 1 kHz	-	39	-	dBV /FS
Power Supply Rejection	PSR	100 mVpp square wave @ 217 Hz, A-weighted	-	-71	-	dBFS (A)
DC Output		Fullscale = ±100	-	-4	-	% FS
Directivity			Omnidirectional			
Polarity		Increasing sound pressure	Increasing density of 1's			
Data Format			½ Cycle PDM			
Logic Input High	V <sub>IH</sub>		0.65xV <sub>DD</sub>	-	3.6	V
Logic Input Low	V <sub>IL</sub>		-0.3	-	0.35xV <sub>DD</sub>	V
Logic Output High	V <sub>OH</sub>	I <sub>OUT</sub> = 1 mA	0.65xV <sub>DD</sub>	-	V <sub>DD</sub>	V
Logic Output Low	V <sub>OL</sub>	I <sub>OUT</sub> = 1 mA	0	-	0.35xV <sub>DD</sub>	V
SELECT (high)			V <sub>DD</sub> - 0.2	-	3.6	V
SELECT (low)			-0.3	-	0.2	V
Short Circuit Current	I <sub>SC</sub>	Grounded DATA pin	-	1	10	mA
Output Load	C <sub>LOAD</sub>		-	-	100	pF
Clock Frequency	F <sub>CLOCK</sub>		1.0	-	3.25	MHz
Clock Duty Cycle			40	-	60	%
Clock Rise/Fall Time	t <sub>EDGE</sub>		-	-	10	ns
Fall-asleep Time <sup>4,5</sup>		F <sub>CLOCK</sub> < 1 kHz	-	-	10	ms
Wake-up Time <sup>4,6</sup>		F <sub>CLOCK</sub> ≥ 1 MHz	-	-	10	ms
Delay Time for Valid Data	t <sub>DV</sub>	C <sub>LOAD</sub> = 13pf	18	-	60	ns
Delay Time for High Z	t <sub>DZ</sub>		0	-	16	ns

### TYPICAL FREQUENCY RESPONSE

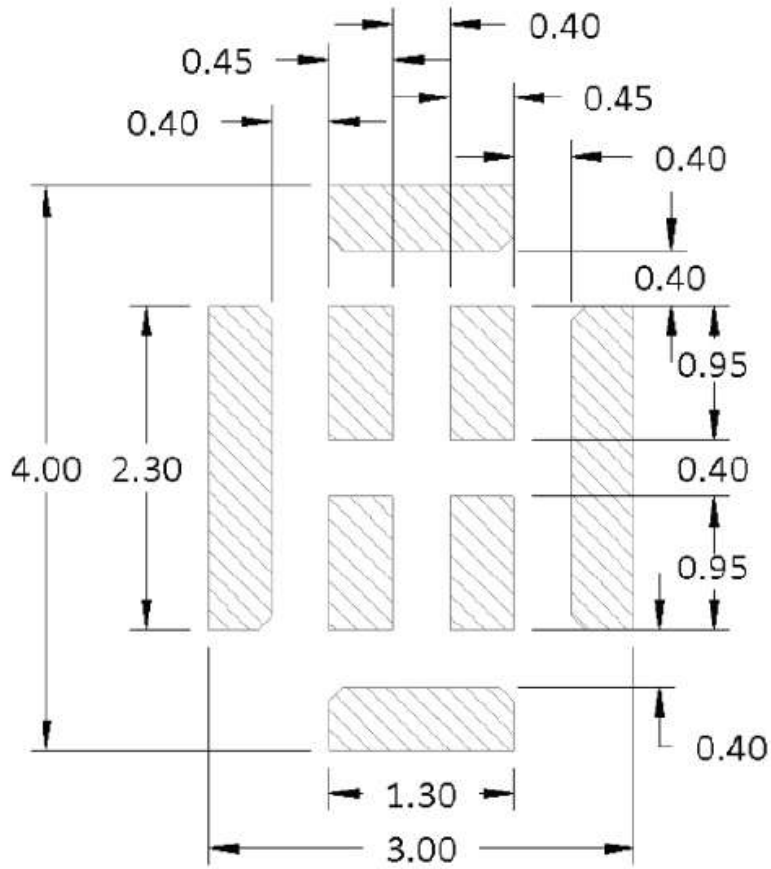


### TIMING DIAGRAM

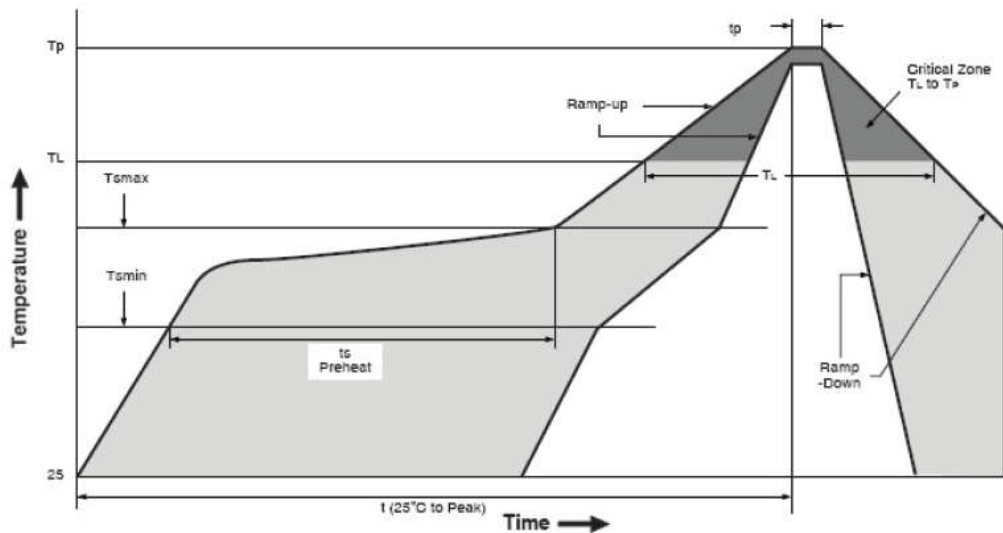


### SMT Parameters :

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

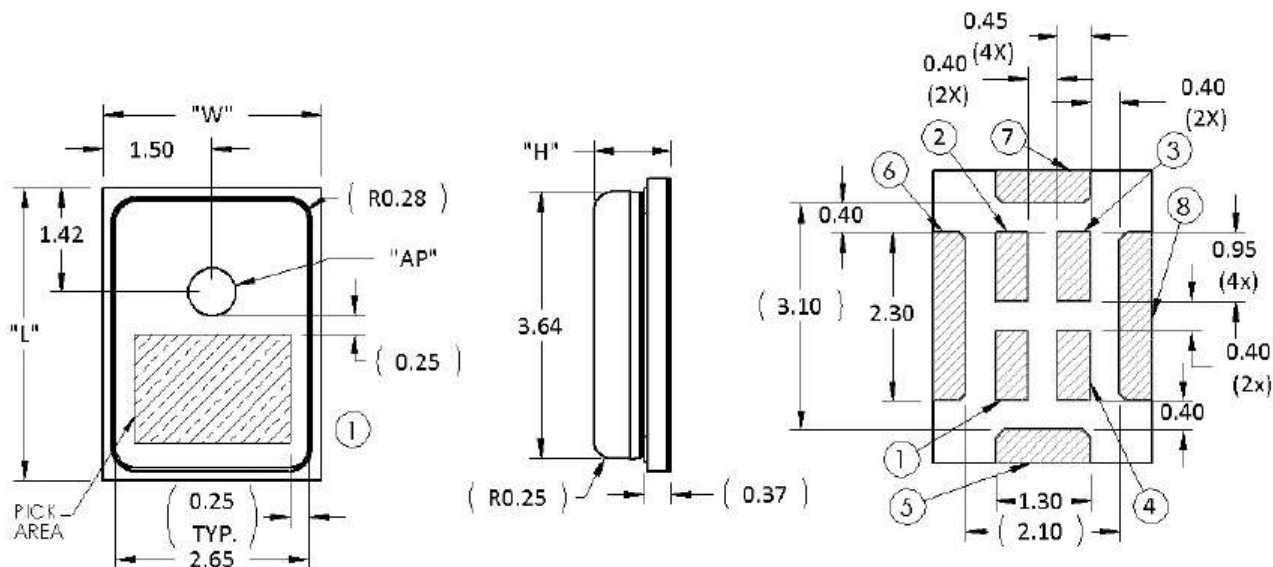


#### 2. Recommend reflow profile:



### 3. note:

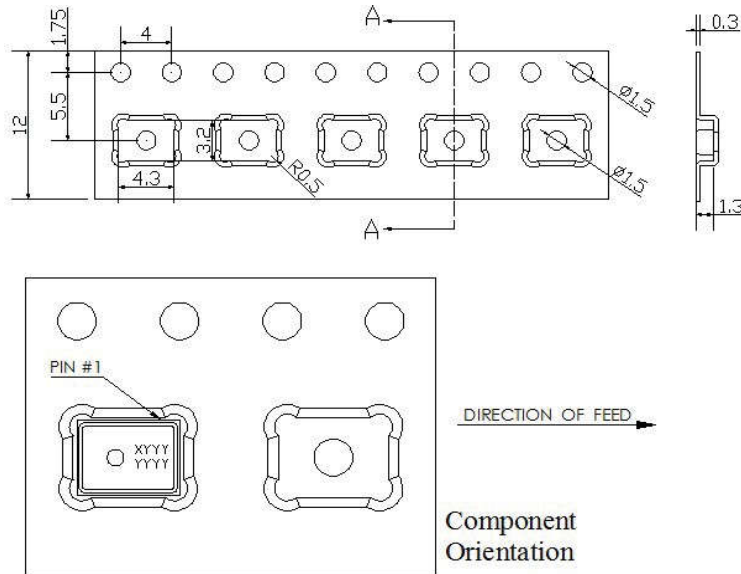
When washing the PCB, ensure that water does not make contact with the microphone port.  
Do not use blow-off procedures or ultrasonic cleaning.



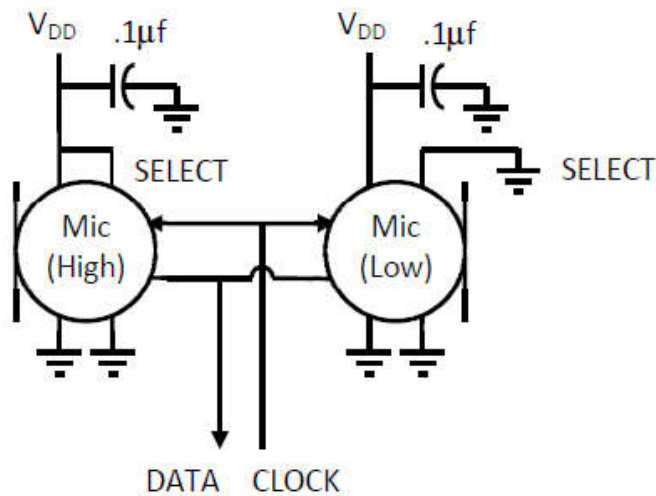
Item	Dimension	Tolerance	Units
Length (L)	4.00	±0.10	mm
Width (W)	3.00	±0.10	mm
Height (H)	1.06	±0.10	mm
Acoustic Port (AP)	∅0.65	±0.05	mm

Pin #	Pin Name	Type	Description
1	V <sub>DD</sub>	Power	Power Supply
2	SELECT	Non-Digital Input	Lo/Hi (L/R) Select This pin is internally pulled low.
3	CLOCK	Digital I	Clock Input
4	DATA	Digital O	PDM Output
5	GROUND	Power	Ground
6	GROUND	Power	Ground
7	GROUND	Power	Ground
8	GROUND	Power	Ground

Notes: Pick Area only extends to 0.25 mm of any edge or hole unless otherwise specified.

**PACKAGING & MARKING DETAIL :**

Model Number	Reel Diameter	Quantity Per Reel
CMM4030DT-106H61S263	13 inch	5000

**RECOMMENDED INTERFACE CIRCUIT :**

Microphone	SELECT	Asserts DATA On	Latch DATA On
Mic (High)	$V_{DD}$	Rising Clock Edge	Falling Clock Edge
Mic (Low)	GND	Falling Clock Edge	Rising Clock Edge

Note: All Ground pins must be connected to ground.

Capacitors near the microphone should not contain Class 2 dielectrics.

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