

		SPECIFICATIONS		MODEL NO. JL-D622C-L-2730	
		TITLE Condenser Microphone		PART NO.	
REVISION AND UPDATES					
REV	ECO NO.	DESCRIPTION		DATE	BY
APPROVED BY			'09 02 26	CHECKED BY	
			'09 02 26	PREPARED BY	
			'09 02 26		

	SPECIFICATIONS	MODEL NO. JL-D622C-L-2730	SHEET 1 OF 4
	TITLE Condenser Microphone	PART NO.	

Scope: The specification describes the requirements of a digital type omni-directional condenser microphone for use in cellular phone 、 PDA 、 NB etc.

1 、 Electrical requirements: Vdd=1.8V, f<sub>CLK</sub>=2.4M Hz, Duty cycle=50%

2-1 、 Sensitivity : -27 ± 3 dBfs ( 0 dB = 1V/Pa, at 1K Hz )

2-2 、 Current consumption : Less than 500 μA

2-3 、 Directivity : Omni-directional

2-4 、 Digital noise floor : -81 dBfs ( Standard )

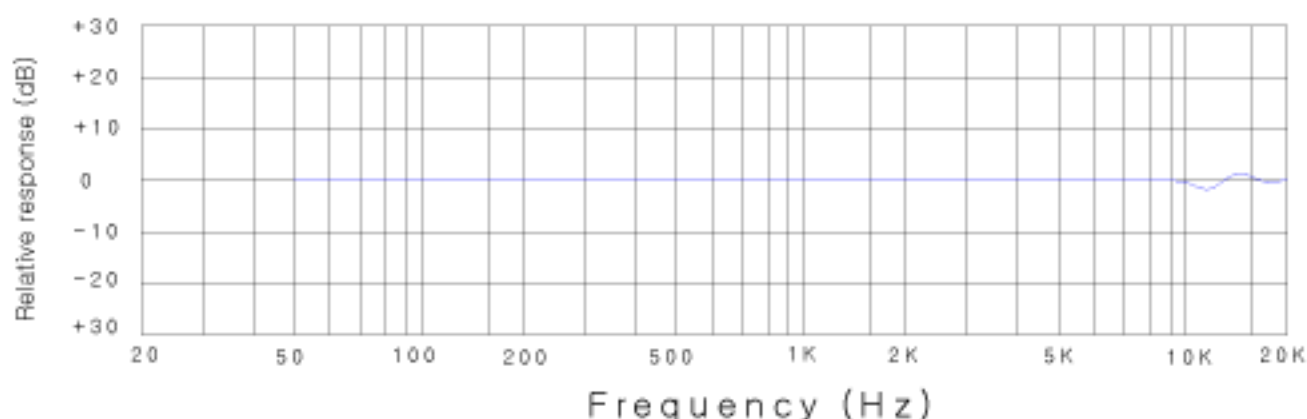
2-5 、 S/N ratio : More than 58dB

2-6 、 Max. input sound level : 120 dB SPL ( THD < 10% )

2-7 、 Power-up Initialization : 20ms ( Data invalid time )

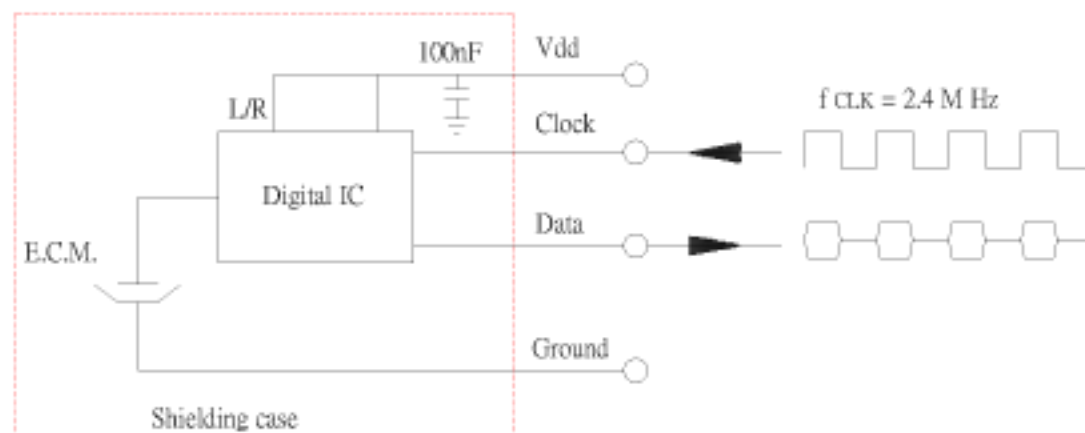
2-8 、 THD + noise : Less than 5% ( 115dB SPL, f<sub>in</sub>=1K Hz )

2-8 、 Frequency response:



2-9 、 Operation voltage range : 1.64V ~ 3.6V

2-10 、 Test circuit diagram:



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## 2-11、Test condition：

Power supply：V<sub>DD</sub> = 1.8V

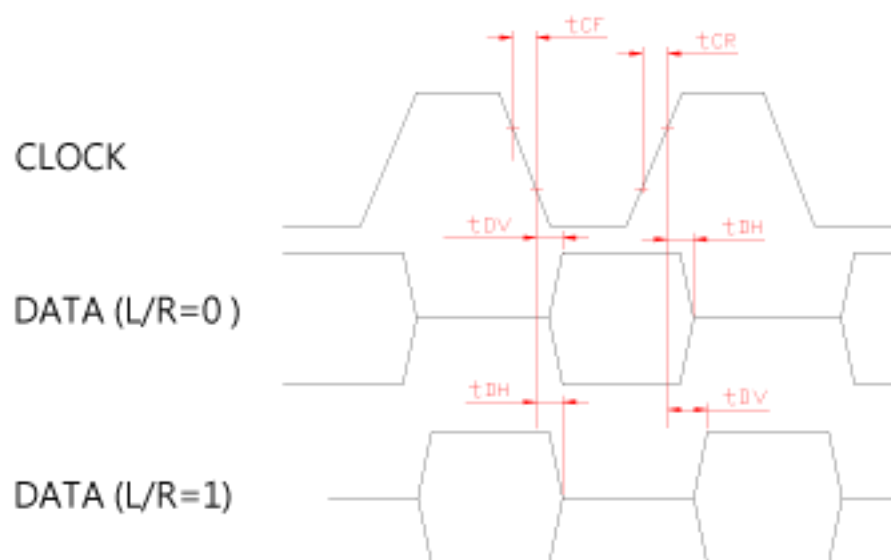
Clock frequency：f<sub>CLK</sub> = 2.4 M Hz

Clock jitter：σ<sub>clock</sub> = 0.5ns

Bandwidth：20 Hz ~ 20K Hz

## 3、Digital input – output characteristic

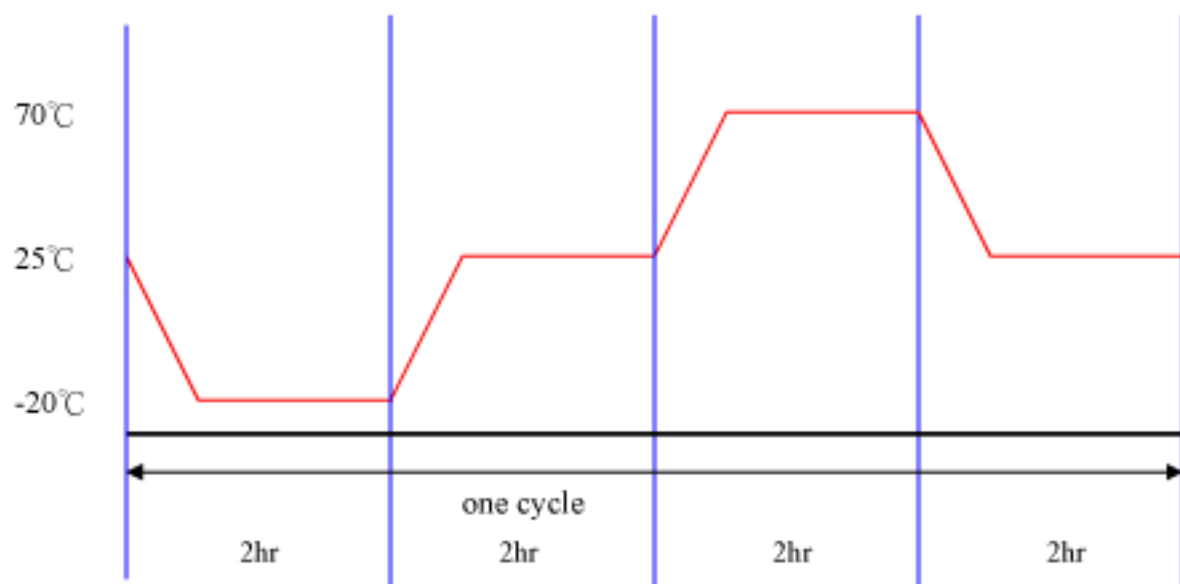
Parameter	Symbol	Min	Typ	Max	Unit	Comments
Clock freq.(sample rate)	f <sub>CLK</sub>	1	2.4	4	MHz	
Clock duty cycle	f <sub>DC</sub>	40	50	60	%	
Jitter tolerance	σ			0.5	ns	
Input/output voltage low	V <sub>IOL</sub>	-0.3		0.35xV <sub>DD</sub>	V	
Output voltage high	V <sub>OH</sub>	0.65xV <sub>DD</sub>		V <sub>DD</sub> +0.3	V	
Input voltage high	V <sub>IH</sub>	0.65xV <sub>DD</sub>		3.63	V	
Input capacitance	C <sub>IN</sub>			10	pF	
Input current @ Low V	I <sub>L</sub>	1		10	mA	Chort circuit current
Output current @ high V	I <sub>H</sub>	1		10	mA	Short circuit current
Clock rise time	t <sub>CR</sub>			10	ns	RL=1MΩ,CL=13pF
Clock fall time	t <sub>CF</sub>			10	ns	RL=1MΩ,CL=13pF
Delay time for data valid	t <sub>DV</sub>	18		40	ns	RL=1MΩ,CL=13pF
Delay time for data high Z	t <sub>DH</sub>	0		15	ns	RL=1MΩ,CL=13pF



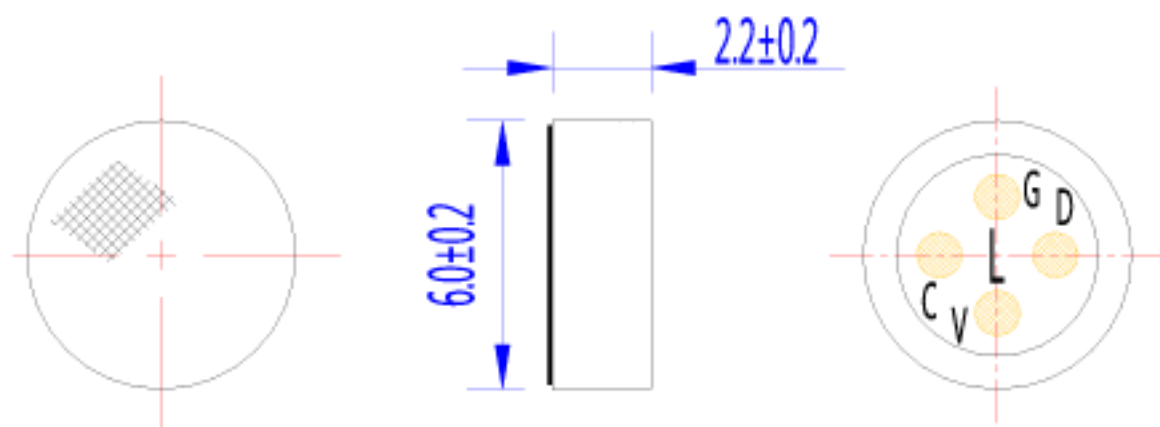
Timing diagram of CLK, L/R and DATA

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		TITLE Condenser Microphone		PART NO.					
4、Mechanical requirements：									
3-1、Dimension		：∅6 ×2.2 mm							
3-3、Soldering heat shock		：After soldering heat shock at 350±5℃ for 3±1 seconds. The microphone should be without damage.							
3-4、Terminal strength		:After applied a 1 Kg force on terminal for 1 minute. The microphone should be without damage.							
3-5、Operating temperature range		：-20 °C~ 70 °C							
3-6、Storage temperature range		：-20 °C~ 70 °C							
4、Reliability test：									
4-1、Vibration test		:After vibrations with 10Hz~55Hz，full amplitude 2mm each 3 minutes for 30 minutes at three axes. The sensitivity should be within ±3 dB form initial value.							
4-2、Drop test		:After drop form 1 meter height to concrete floor，each 5 face for 5 times with packing. The sensitivity should be with ±3 dB from initial value.							
4-3、Humidity test		:After exposure at 40 ±2 °C and 90%~95% humidity for 200 hours. The sensitivity should be with ±3 dB form initial value. (The measurement should be done after 3 hours at conditioning 25±2 °C.)							
4-4、High temperature test		:After exposure at 70 ±2 °C for 200 hours. The sensitivity should be with ±3 dB from initial value. (The measurement should be done after 3 hours at conditioning 25±2 °C.)							
4-5、Low temperature test		:After exposure at -20 ±2 °C for 200 hours. The sensitivity should be with ±3 dB from initial value. (The measurement should be done after 3 hours at conditioning 25±2 °C.)							
4-6、Temperature cycle test		:After exposure at -20 ±2 °C for 2 hours，at 25 ±2 °C for 2 hours，at 70 ±2 °C for 2 hours，5 cycles. The sensitivity should be with ±3 dB from initial value. (The measurement should be done after 3 hours at conditioning 25±2 °C.)							
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## 5 · Microphone dimension ·



## Pin description

Mark	Pin name	Function
D	DATA	Left Mic PDM digital data output
V	VDD	Power supply
C	CLK	Clock digital input signal
G	GND	Ground