

SPECIFICATIONS	MODEL JL-D622C-R
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
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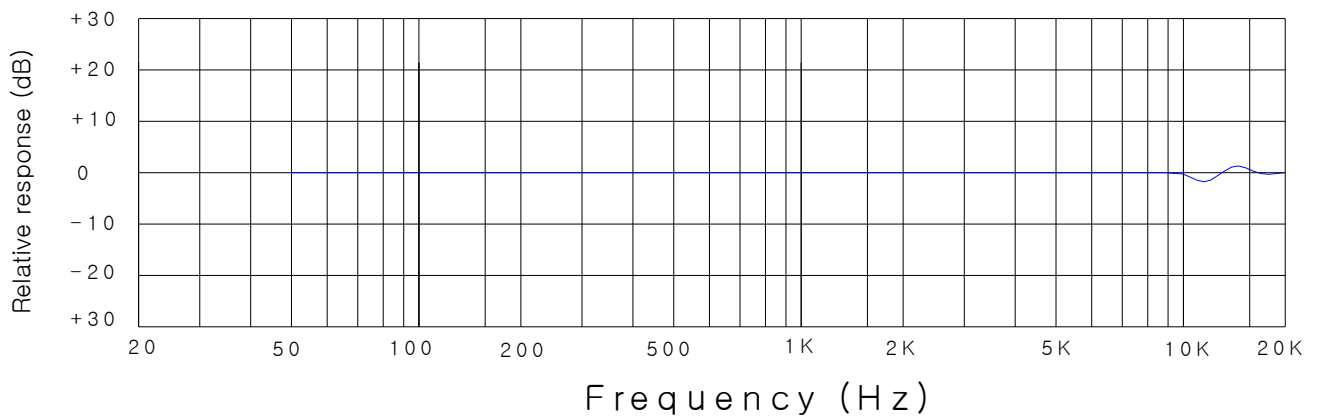
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Scope: The specification describes the requirements of a digital type omni-directional condenser microphone for use in cellular phone · PDA · NB etc.

1 · Electrical requirements: Vdd=1.8V, f_{CLK}=2.4M Hz, Duty cycle=50%

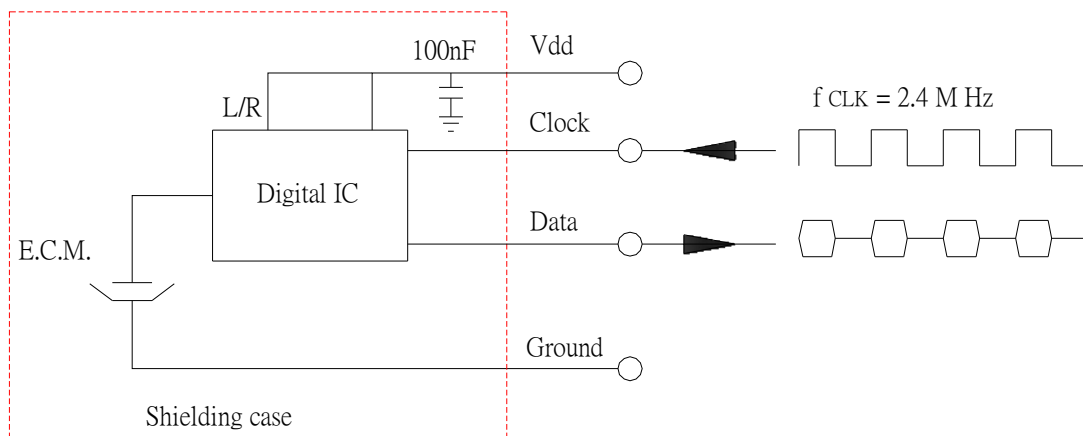
- 2-1 · Sensitivity : -27 ± 3 dBfs (0 dB = 1V/Pa, at 1K Hz)
- 2-2 · Current consumption : Less than 500 μA
- 2-3 · Directivity : Omni-directional
- 2-4 · Digital noise floor : -81 dBfs (Standard)
- 2-5 · S/N ratio : More than 58dB
- 2-6 · Max. input sound level : 120 dB SPL (THD < 10%)
- 2-7 · Power-up initialization : 20ms (Data invalid time)
- 2-8 · THD + noise : Less than 5% (115dB SPL, fin=1K Hz)

2-8 · Frequency response:



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

2-10 · Test circuit diagram:



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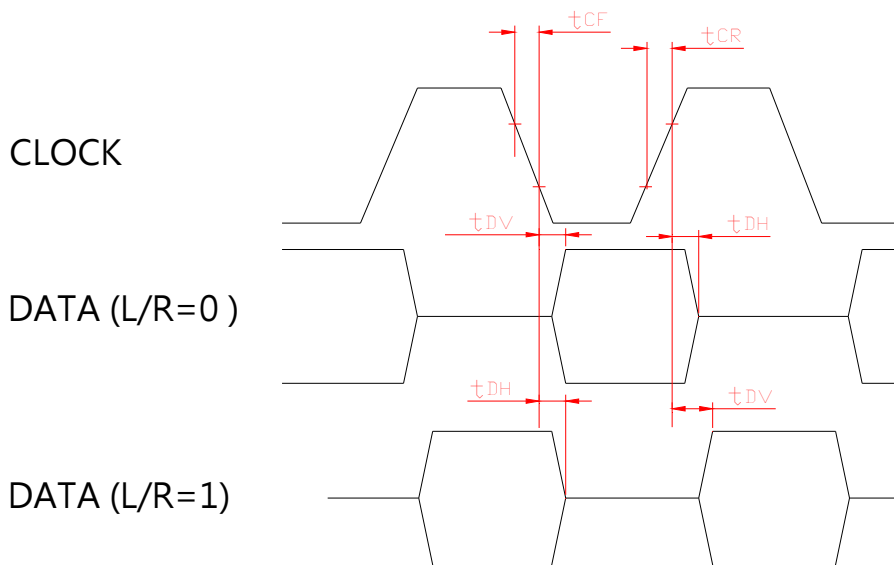
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2-11、Test condition :

Power supply : $V_{dd} = 1.8V$
Clock frequency : $f_{CLK} = 2.4 \text{ MHz}$
Clock jitter : $\sigma_{clock} = 0.5ns$
Bandwidth : 20 Hz ~ 20K Hz

3、Digital input – output characteristic

Parameter	Symbol	Min	Typ	Max	Unit	Comments
Clock freq.(sample rate)	fCLK	1	2.4	4	MHz	
Clock duty cycle	fDC	40	50	60	%	
Jitter tolerance	σ			0.5	ns	
Input/output voltage low	V _{IO} L	-0.3		0.35xV _{dd}	V	
Output voltage high	V _{OH}	0.65xV _{dd}		V _{dd} +0.3	V	
Input voltage high	V _{IH}	0.65xV _{dd}		3.63	V	
Input capacitance	C _{IN}			10	pF	
Input current @ Low V	I _L	1		10	mA	Chort circuit current
Output current @ high V	I _H	1		10	mA	Short circuit current
Clock rise time	t _{CR}			10	ns	RL=1M Ω ,CL=13pF
Clock fall time	t _{CF}			10	ns	RL=1M Ω ,CL=13pF
Delay time for data valid	t _{DV}	18		40	ns	RL=1M Ω ,CL=13pF
Delay time for data high Z	t _{DH}	0		15	ns	RL=1M Ω ,CL=13pF



Timing diagram of CLK, L/R and DATA



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4、Mechanical requirements：

- 3-1、Dimension : $\varnothing 6 \times 2.2$ mm
- 3-3、Soldering heat shock : After soldering heat shock at $350 \pm 5^{\circ}\text{C}$ 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 : $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- 3-6、Storage temperature range : $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$

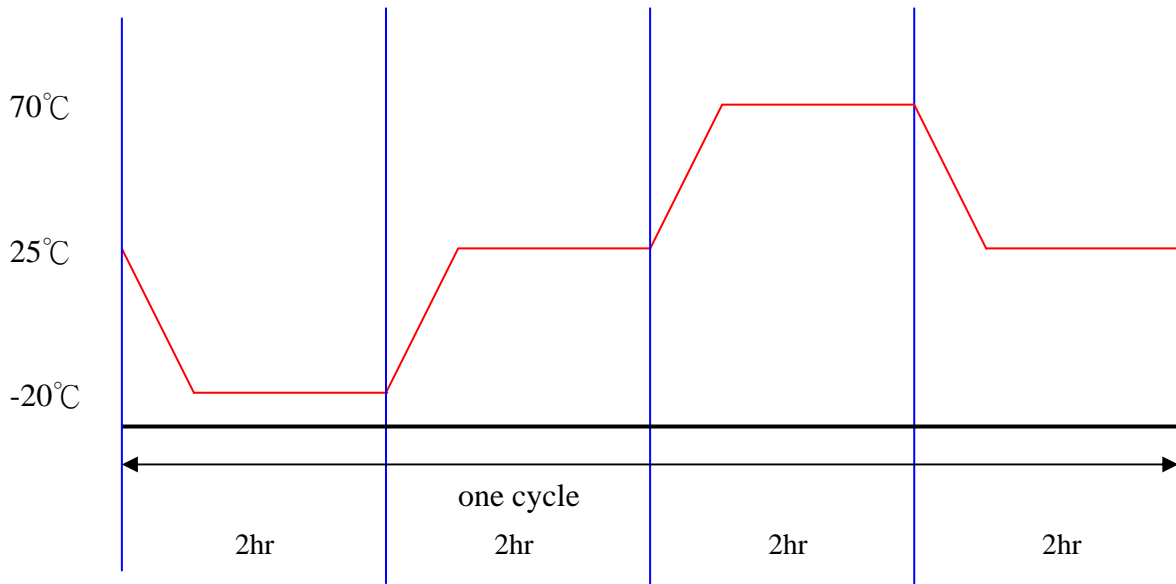
4、Reliability test：

- 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 $40 \pm 2^{\circ}\text{C}$ 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 $25 \pm 2^{\circ}\text{C}$.)
- 4-4、High temperature test :After exposure at $70 \pm 2^{\circ}\text{C}$ for 200 hours. The sensitivity should be with ± 3 dB from initial value.
(The measurement should be done after 3 hours at conditioning $25 \pm 2^{\circ}\text{C}$.)
- 4-5、Low temperature test :After exposure at $-20 \pm 2^{\circ}\text{C}$ for 200 hours. The sensitivity should be with ± 3 dB from initial value.
(The measurement should be done after 3 hours at conditioning $25 \pm 2^{\circ}\text{C}$.)
- 4-6、Temperature cycle test :After exposure at $-20 \pm 2^{\circ}\text{C}$ for 2 hours，at $25 \pm 2^{\circ}\text{C}$ for 2 hours，at $70 \pm 2^{\circ}\text{C}$ 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 $25 \pm 2^{\circ}\text{C}$.)

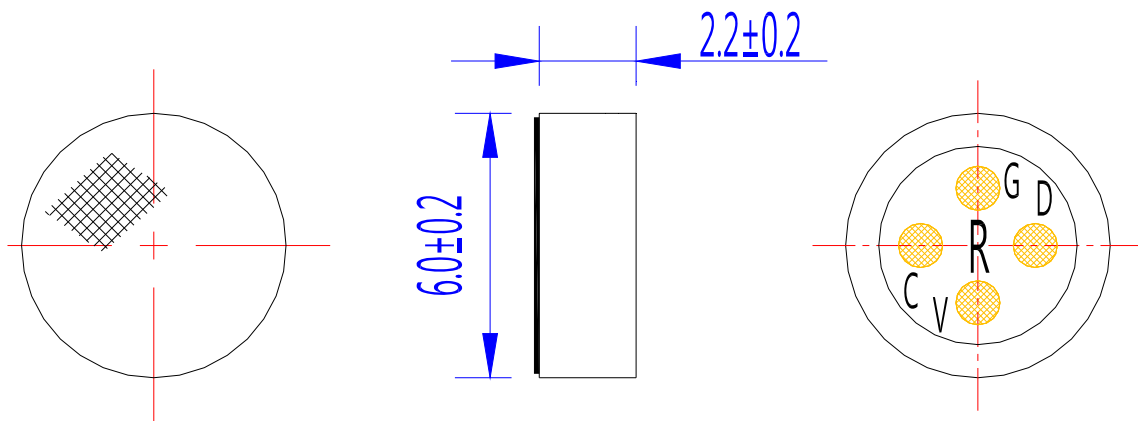


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5 · Microphone dimension ·



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



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