

QUARTZ CRYSTAL OSCILLATOR

■ GENERAL DESCRIPTION

The NJU6362A is a C-MOS quartz crystal oscillator which consists of an oscillation amplifier and 3-state output buffer.

The oscillation frequency is as wide as up to 50MHz and the symmetry of 45-55% is realized over full oscillation frequency range.

The oscillation amplifier incorporates feed-back resistance and oscillation capacitors (C_g , C_d), therefore, it requires no external component except quartz crystal.

■ FEATURES

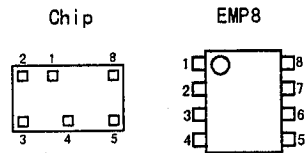
- Operating Voltage — 3.0~6.0V
- Maximum Oscillation Frequency — 50MHz
- Low Operating Current
- High Fan-out — LSTTL 10
- 3-state Output Buffer
- Oscillation Capacitors C_g and C_d on-chip
- Oscillation Output Stand-by Function
- Package Outline — Chip/EMP8
- C-MOS Technology

■ PACKAGE OUTLINE


NJU6362AC



NJU6362AE

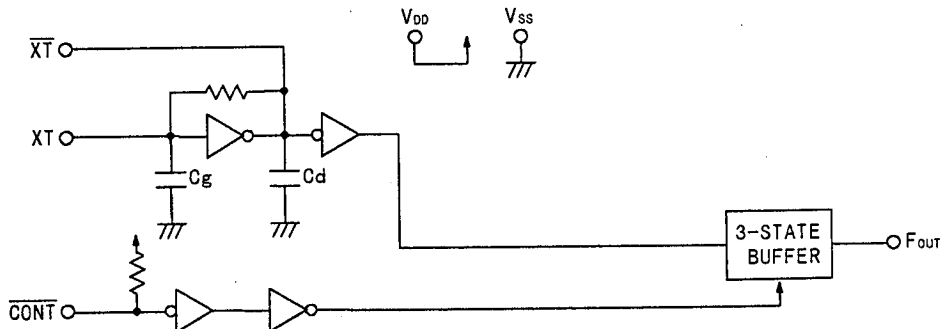
■ PAD LOCATION/PIN CONFIGURATION

■ COORDINATES

No.	PAD	X	Y
1	CONT	515	648
2	XT	231	648
3	\overline{XT}	231	168
4	V_{SS}	734	152
5	F_{OUT}	1091	172
6	NC	—	—
7	NC	—	—
8	V_{DD}	1091	628

Chip Size : 1.29x0.8mm

Chip Thickness : $400 \pm 30 \mu m$

Note) There are no PAD of No. 6 and 7 on the chip.

■ BLOCK DIAGRAM


■ TERMINAL DESCRIPTION

No.	SYMBOL	F U N C T I O N						
1	$\overline{\text{CONT}}$	3-State Output Control						
		<table border="1"> <thead> <tr> <th>$\overline{\text{CONT}}$</th> <th>F_{OUT}</th> </tr> </thead> <tbody> <tr> <td>H or Open</td> <td>Output frequency f_o</td> </tr> <tr> <td>L</td> <td>Output High Impedance</td> </tr> </tbody> </table>	$\overline{\text{CONT}}$	F_{OUT}	H or Open	Output frequency f_o	L	Output High Impedance
		$\overline{\text{CONT}}$	F_{OUT}					
H or Open	Output frequency f_o							
L	Output High Impedance							
2	$\overline{\text{XT}}$	Quartz Crystal Connecting terminals						
3	$\overline{\text{XT}}$							
4	V_{SS}	GND						
5	F_{OUT}	Output frequency f_o						
8	V_{DD}	+ 5V						

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

P A R A M E T E R	SYMBOL	R A T I N G S	UNIT
Supply Voltage	V_{DD}	-0.5 ~ +7.0	V
Input Voltage	V_{IN}	$V_{\text{SS}}-0.5 \sim V_{\text{DD}}+0.5$	V
Output Voltage	V_o	-0.5 ~ $V_{\text{DD}}+0.5$	V
Input Current	I_{IN}	± 10	mA
Output Current	I_o	± 25	mA
Power Dissipation (EMP)	P_o	200	mW
Operating Temperature Range	T_{opr}	-40 ~ + 85	°C
Storage Temperature Range	T_{stg}	-65 ~ +150	°C

Note) Decoupling capacitor should be connected between VDD and VSS due to the stabilized operation for the circuit.

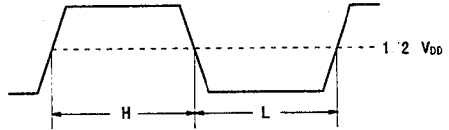
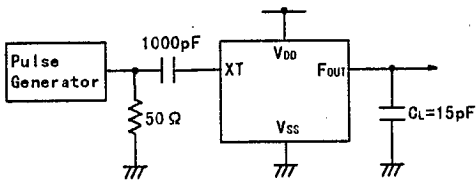
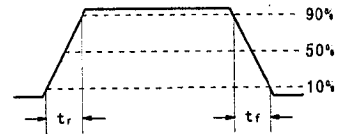
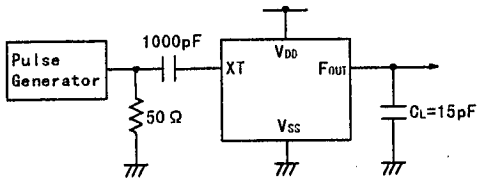
■ ELECTRICAL CHARACTERISTICS

 (Ta=25°C, V_{DD}=5V)

P A R A M E T E R	SYMBOL	C O N D I T I O N S	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		3		6	V
Operating Current	I_{DD}	$f_{\text{osc}}=16\text{MHz}$, No load			10	mA
Stand-by Current	I_{st}	$\overline{\text{CONT}}=\overline{\text{XT}}=V_{\text{SS}}$, No load (Note)			1	uA
Input Voltage	V_{IH}		3.5		5.0	V
	V_{IL}		0		1.5	
Output Current	I_{OH}	$V_{\text{OH}}=4.5\text{V}$	5.5			mA
	I_{OL}	$V_{\text{OL}}=0.5\text{V}$	5.5			
Input Current	I_{IN}	$\overline{\text{CONT}}=V_{\text{SS}}$	125	250	500	μA
3-st. Off-leakage Current	I_{oz}	$\overline{\text{CONT}}=V_{\text{SS}}$, $F_{\text{OUT}}=V_{\text{DD}}$ or V_{SS}			± 0.1	μA
Internal Capacitor	C_g/C_d			28		pF
Max. Oscillation Freq.	f_{MAX}		50			MHz
Output Signal Symmetry	SYM	$C_L=15\text{pF}$ at $1/2V_{\text{DD}}$	45	50	55	%
Output Signal Rise Time	t_r	$C_L=15\text{pF}$, 10%-90%			8	ns
Output Signal Fall Time	t_f	$C_L=15\text{pF}$, 90%-10%			8	ns

Note) Excluding input current on $\overline{\text{CONT}}$ terminal.

MEASUREMENT CIRCUITS

 (1) Output Signal Symmetry ($C_L=15\text{pF}$)

 (2) Output Signal Rise / Fall Time ($C_L=15\text{pF}$)


MEMO

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