

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

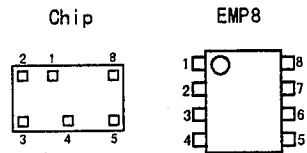
- Operating Voltage — 3.0~6.0V
- Maximum Oscillation Frequency — 50MHz
- Low Operating Current
- High Fan-out — LSTTL 10
- 3-state Output Buffer
- Oscillation Capacitors C_g and C_d on-chip
- Oscillation Output Stand-by Function
- Package Outline — Chip/EMP8
- C-MOS Technology

■ PACKAGE OUTLINE


NJU6362AC



NJU6362AE

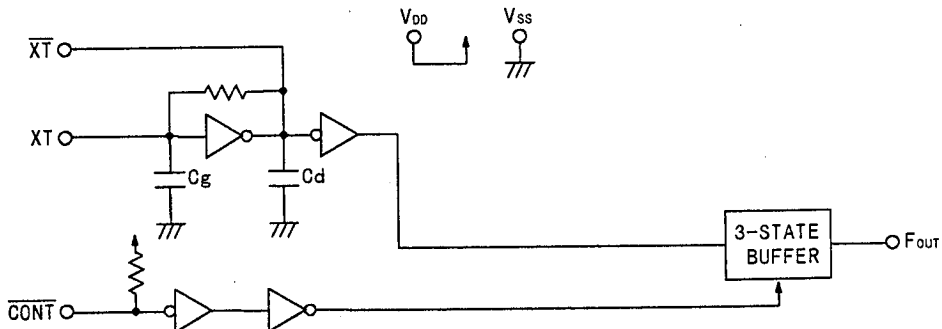
■ PAD LOCATION/PIN CONFIGURATION

■ 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	
		$\overline{\text{CONT}}$	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.

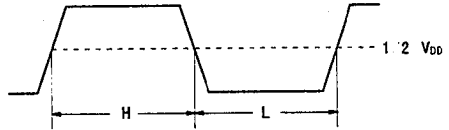
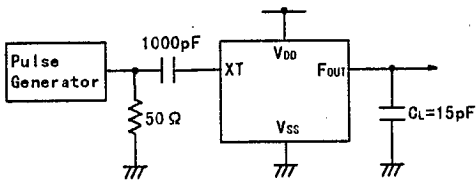
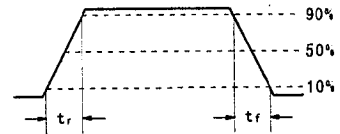
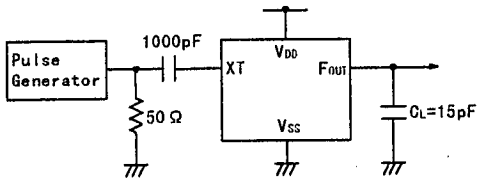
■ ELECTRICAL CHARACTERISTICS

 (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	μA
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

[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.