

QUARTZ CRYSTAL OSCILLATOR
■ GENERAL DESCRIPTION

The NJU6341 series is a C-MOS quartz crystal oscillator which consists of an oscillation amplifier, 3-stage divider and output buffer.

The oscillation frequency is as wide as up to 120MHz and the symmetry of 45-55% is realized over full oscillation frequency range.

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

The 3-stage divider generates f_o , $f_o/2$, $f_o/4$ and $f_o/8$ and only one frequency selected by internal circuits is output.

The output buffer is TTL compatible and capable of 5 TTL driving.

■ FEATURES

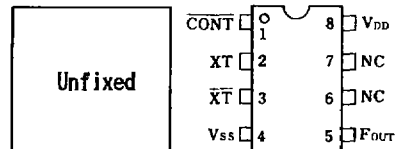
- Operating Voltage — 4.0~6.0V
- Maximum Oscillation Frequency — 120MHz
- Low Operating Current
- High Fan-out — TTL 5
- Selected Frequency Output (mask option)
Only one frequency out of f_o , $f_o/2$, $f_o/4$ and $f_o/8$ output
- Oscillation and/or Output Stand-by Function
- Package Outline — CHIP/EMP 8
- C-MOS Technology

■ PACKAGE OUTLINE


NJU6341XC



NJU6341XE

■ PIN CONFIGURATION/PAD LOCATION

■ COORDINATES

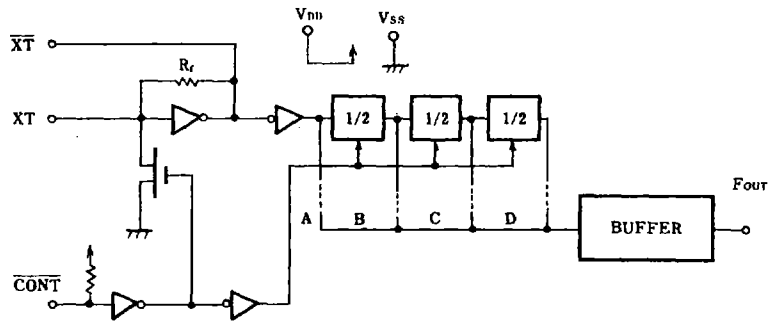
 Unit: μm

No.	PAD	X	Y
1	CONT		
2	XT		
3	XT		
4	V _{SS}		
5	F _{OUT}		
6	NC		
7	NC		
8	V _{DD}		

Chip Size : 1.70 X 0.8mm
 Chip Thickness : 400 μm X 30 μm

■ LINE-UP TABLE

Type No.	Output Osc. Frequency
NJU6341A	f_o
NJU6341B	$f_o/2$
NJU6341C	$f_o/4$
NJU6341D	$f_o/8$

■ BLOCK DIAGRAM

■ TERMINAL DESCRIPTION

NO.	SYMBOL	F U N C T I O N
1	$\overline{\text{CONT}}$	Oscillation Stop Control and Divider Reset
		$\overline{\text{CONT}}$ Output (F_{OUT})
		H Output either one frequency from f_0 , $f_0/2$, $f_0/4$ and $f_0/8$
		L Oscillation Stop, Output High Impedance and Divider Reset
2	XT	Quartz Crystal Connecting Terminals
3	$\overline{\text{XT}}$	
5	F_{OUT}	Output either one frequency from f_0 , $f_0/2$, $f_0/4$ and $f_0/8$
8	V_{DD}	+ 5V
4	V_{SS}	GND

■ ABSOLUTE MAXIMUM RATINGS

 ($T_a=25^\circ\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	- 0.3 ~ +7.0	V
Input Voltage	V_{IN}	- 0.3 ~ $V_{\text{DD}}+0.3$	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_{D}	200	mW
Operating Temperature Range	T_{opr}	- 30 ~ + 75	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 40 ~ +125	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

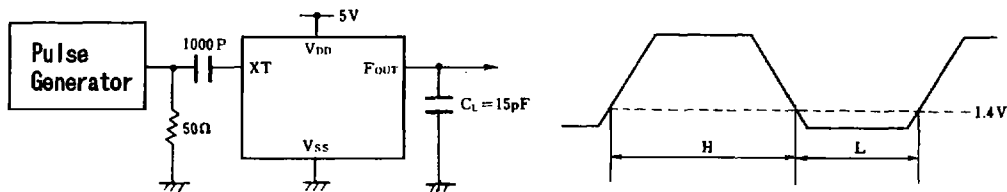
 ($T_a=25^\circ\text{C}$, $V_{DD}=5\text{V}$)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		4	5	6	V
Operating Current	I_{DD}	$f_{osc}=50\text{MHz}$, No load		25	35	mA
Stand-by Current	I_{st}	$\overline{\text{CONT}}, \text{XT}=\overline{V_{SS}}$, No load (Note)		100		μA
Input Voltage	V_{IH}		4.5		5.0	V
	V_{IL}		0		0.5	
Output Current	I_{OH}	$V_{DD}=5\text{V}$, $V_{OH}=4.5\text{V}$	1			mA
	I_{OL}	$V_{DD}=5\text{V}$, $V_{OL}=0.5\text{V}$	8			
Input Current	I_{IN}	$\overline{\text{CONT}}$ Terminal, $\overline{\text{CONT}}=\overline{V_{SS}}$	125	250	500	μA
Oscillation Frequency	f_o	$V_{DD}=5\text{V}$	72		150	MHz
Output Signal Symmetry	SYM	$C_L=15\text{pF}$, at 1.4V	45	50	55	%
Output Signal Rise Time	t_{r1}	$V_{DD}=5\text{V}$	20% - 80%	1		ns
	t_{r2}	$C_L=15\text{pF}$, $R_L=820$	0.4V-2.4V	0.6		
Output Signal Fall Time	t_{f1}	$V_{DD}=5\text{V}$	80% - 20%	0.8		ns
	t_{f2}	$C_L=15\text{pF}$, $R_L=820$	2.4V-0.4V	0.4		

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

MEASUREMENT CIRCUITS

(1) Output Symmetry



(2) Output Rise / Fall Time

