

QUARTZ CRYSTAL OSCILLATOR

GENERAL DESCRIPTION

The NJU6324 series is a C-MOS quartz crystal oscillator which consists of oscillation amplifier, 3-stage divider 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 feed-back resistor and oscillation load capacitors (C_g , C_d) incorporated on oscillation amplifier enables oscillation by connecting quartz crystal only.

Only one output frequency is selected from f_0 , $f_0/2$, $f_0/4$ and $f_0/8$ by internal connection.

The 3-state output buffer is C-MOS compatible and capable of 10 LSTTL driving.

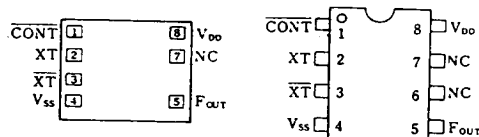
PACKAGE OUTLINE



FEATURES

- Operating Voltage -- 4.0~6.0V
- Maximum Oscillation Frequency -- 50MHz
- Low Operating Current
- High Fanout -- LSTTL 10
- 3-state Output Buffer
- Output Frequency Selectable by mask option
 - One frequency out of f_0 , $f_0/2$, $f_0/4$ and $f_0/8$ outputs.
- Oscillation Capacitors C_g and C_d On-chip
- Oscillation Stop Function
- Package Outline -- CHIP/EMP 8
- C-MOS Technology

PIN CONFIGURATION/PAD LOCATION



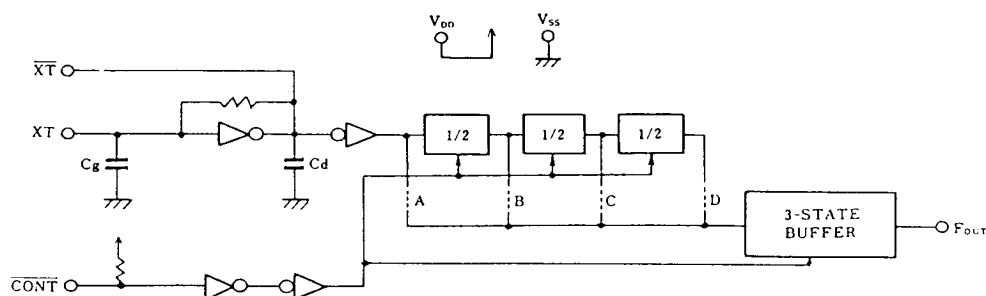
COORDINATES

Unit : μm

No.	PAD	X	Y
1	CONT	170	649
2	XT	170	483
3	$\overline{\text{XT}}$	170	316
4	V_{SS}	170	143
5	F_{OUT}	1094	143
6	NC	—	—
7	NC	1094	462
8	V_{DD}	1094	649

CHIP SIZE : 1.24 × 0.8mm
CHIP THICKNESS : 400 μm ± 30 μm

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

P A R A M E T E R	S Y M B O L	R A T I N G S	U N I T
Supply Voltage	V _{DD}	-0.5 ~ 7.0	V
Input Voltage	V _{IN}	-0.5 ~ V _{DD} +0.5	V
Output Voltage	V _O	-0.5 ~ V _{DD} +0.5	V
Input Current	I _{IN}	-10 ~ +10	mA
Output Current	I _O	-25 ~ +25	mA
Power Dissipation (EMP)	P _D	200	mW
Operating Temperature Range	T _{opr}	-40 ~ + 85	°C
Storage Temperature Range	T _{stg}	-65 ~ +150	°C

ELECTRICAL CHARACTERISTICS

(Ta=25°C, V_{DD}=5V)

P A R A M E T E R	S Y M B O L	C O N D I T I O N S	M I N	T Y P	M A X	U N I T
Operating Voltage	V _{DD}		4		6	V
Operating Current	I _{DD}	fosc=16MHz, No load			10	mA
Stand-by Current	I _{st}	CONT=V _{SS} , No load (Note)			100	uA
Input Voltage	V _{IH}		3.5		5.0	V
	V _{IL}		0		1.5	
Output Current	I _{OH}	V _{DD} =5V, V _{OH} =4.5V	4			mA
	I _{OL}	V _{DD} =5V, V _{OL} =0.5V	4			
Input Current	I _{IN}	CONT Terminal			400	uA
Internal Capacitor	C _g			23		pF
	C _d			23		
Max. Oscillation Freq.	F _{MAX}	V _{DD} =5V, C _L =15pF	50			MHz
Output Signal Symmetry	SYM	V _{DD} =5V, at 1.4V, No load	45	50	55	%
Output Signal Rise Time	T _R	V _{DD} =5V, C _L =15pF, 10% - 90%			8	ns
Output Signal Fall Time	T _F	V _{DD} =5V, C _L =15pF, 90% - 10%			8	ns

Note) Excluding input current on CONT terminal.