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 (Cg, Cd), therefore, it requires no external component except quartz crystal.

■ FEATURES

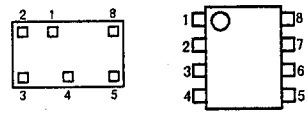
- Operating Voltage — 3.0~6.0V
- Maximum Oscillation Frequency — 50MHz
- Low Operating Current
- High Fan-out — LSTTL 10
- 3-state Output Buffer
- Oscillation Capacitors Cg and Cd on-chip
- Oscillation Output Stand-by Function
- Package Outline — Chip/EMP8
- C-MOS Technology

■ PACKAGE OUTLINE

NJU6362AC NJU6362AE

■ PAD LOCATION/PIN CONFIGURATION

Chip EMP8



■ COORDINATES

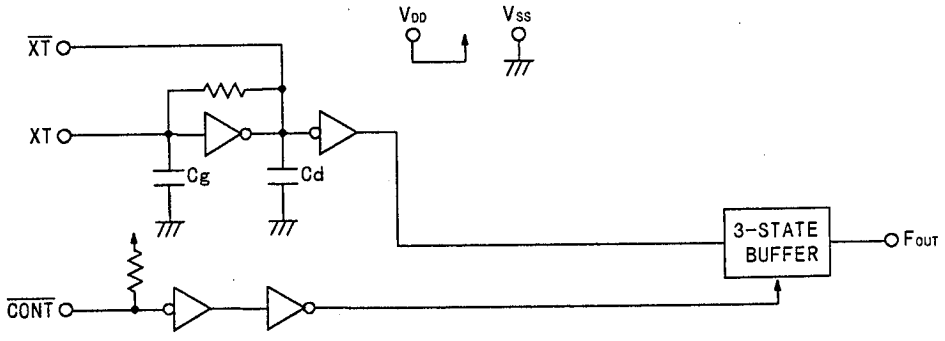
No.	PAD	X	Y
1	CONT	515	648
2	XT	231	648
3	$\overline{XT}$	231	168
4	V_{SS}	734	152
5	F_{OUT}	1091	172
6	NC	—	—
7	NC	—	—
8	V_{DD}	1091	628

Chip Size : 1.29x0.8mm

Chip Thickness : 400±30μm

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

■ BLOCK DIAGRAM



■ TERMINAL DESCRIPTION

No.	SYMBOL	FUNCTION
1	$\overline{CONT}$	3-State Output Control $\overline{CONT}$ / F_{OUT} H or Open / Output frequency f_o L / Output High Impedance
2 3	XT $\overline{XT}$	Quartz Crystal Connecting terminals
4	V_{SS}	GND
5	F_{OUT}	Output frequency f_o
8	V_{DD}	+ 5V

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	-0.5 ~ +7.0	V
Input Voltage	V_{IN}	V_{SS}-0.5 ~ V_{DD}+0.5	V
Output Voltage	V_O	-0.5 ~ V_{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	Topr	-40 ~ + 85	°C
Storage Temperature Range	Tstg	-65 ~ +150	°C

■ ELECTRICAL CHARACTERISTICS

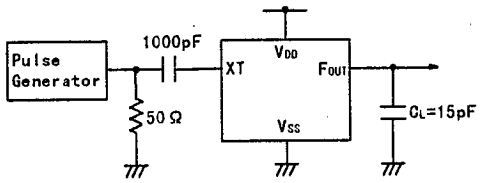
(Ta=25°C, V_{DD}=5V)

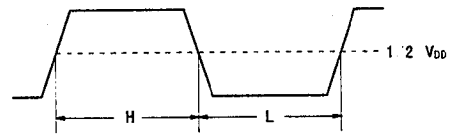
PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		3		6	V
Operating Current	I_{DD}	fosc=16MHz, No load			10	mA
Stand-by Current	Ist	$\overline{CONT}$=XT=V_{SS}, No load (Note)			1	uA
Input Voltage	V_{IH}		3.5		5.0	V
	V_{IL}		0		1.5	
Output Current	I_{OH}	V_{OH}=4.5V	5.5			mA
	I_{OL}	V_{OL}=0.5V	5.5			
Input Current	I_{IN}	$\overline{CONT}$=V_{SS}	125	250	500	μA
3-st. Off-leakage Current	I_{OZ}	$\overline{CONT}$=V_{SS}, F_{OUT}=V_{DD} or V_{SS}			±0.1	μA
Internal Capacitor	Cg/Cd			28		pF
Max. Oscillation Freq.	f_{MAX}		50			MHz
Output Signal Symmetry	SYM	C_L=15pF at 1/2V_{DD}	45	50	55	%
Output Signal Rise Time	t_r	C_L=15pF, 10%-90%			8	ns
Output Signal Fall Time	t_f	C_L=15pF, 90%-10%			8	ns

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

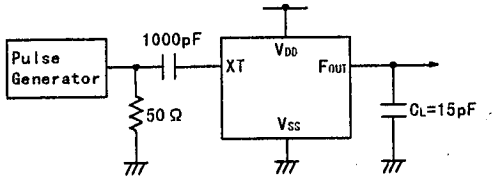
■ MEASUREMENT CIRCUITS

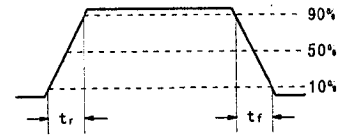
(1) Output Signal Symmetry (C_L=15pF)





(2) Output Signal Rise / Fall Time (C_L=15pF)





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