TRI-STATE BUFFER

■ GENERAL DESCRIPTION

The NJU6342 is a tri-state buffer input the external ECL oscillation signal and output C-MOS level signal.

It consists of an amplifier and tri-state output buffer.

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

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

■ PACKAGE OUTLINE

NJU6342C

NJU6342E

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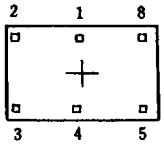
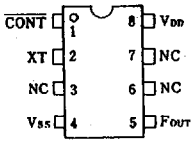
■ FEATURES

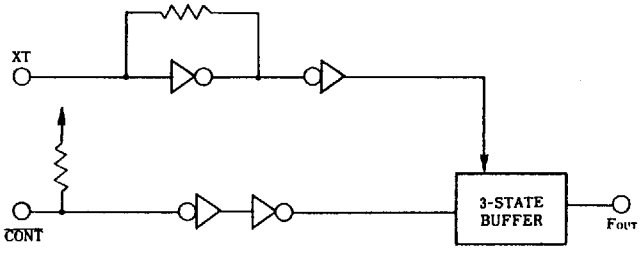
- Operating Voltage — 4.0~6.0V
- Maximum Oscillation Frequency — 120MHz
- Low Operating Current
- High Fan-out — TTL 5
- Selected Frequency Output (mask option)
  Only one frequency out of f_O, $f_O/2$, $f_O/4$ and $f_O/8$ output
- Oscillation and/or Output Stand-by Function
- Package Outline — CHIP/EMP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

■ PIN CONFIGURATION/PAD LOCATION





■ BLOCK DIAGRAM



■ COORDINATES

Unit: μm

No.	PAD	X	Y
1	$\overline{CONT}$	- 29	181
2	XT	- 462	181
3	NC	- 463	- 181
4	V_{SS}	- 44	- 229
5	F_{OUT}	564	- 229
8	V_{DD}	564	229

Chip Size : 1.49 X 0.8mm
Chip Thickness : 400μm X 30μm

■ TERMINAL DESCRIPTION

NO.	SYMBOL	FUNCTION
1	$\overline{CONT}$	Tri-state output control terminal $\overline{CONT}$ = H: F_{OUT} = Input ECL oscillation signal output $\overline{CONT}$ = L: F_{OUT} = Output High Impedance
2	XT	External ECL oscillation signal input terminal
4	V_{SS}	GND
5	F_{OUT}	Output amplified external ECL oscillation frequency
8	V_{DD}	+ 5V

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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{DD}	- 0.3 ~ +7.0	V
Input Voltage	V_{IN}	V_{SS}-0.3 ~ V_{DD}+0.3	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	- 30 ~ + 75	℃
Storage Temperature Range	Tstg	- 40 ~ +125	℃

■ ELECTRICAL CHARACTERISTICS

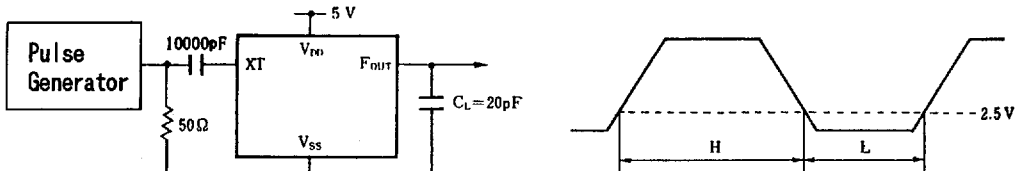
(Ta=25℃, V_{DD}=5V)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}		4	5	6	V
Operating Current	I_{DD}	f_{IN}=120MHz, V_{IN}=0.5V_{P-P} No load			65	mA
Stand-by Current	Ist	$\overline{CONT}$=XT=V_{SS}, No load (Note)			1	μA
Input Voltage	V_{IH}	$\overline{CONT}$ Terminal	4.5		5.0	V
	V_{IL}		0		0.5	
Output Current	I_{OH}	V_{OH}=4.5V	24			mA
	I_{OL}	V_{OL}=0.5V	24			
Output Voltage	V_{OH}	I_{OH}=-24mA	4.5		5.0	V
	V_{OL}	I_{OL}=+24mA	0		0.5	
Input Current	I_{IN}	$\overline{CONT}$ Terminal, $\overline{CONT}$=V_{SS}	125	250	500	μA
Tri-state Off-leacage Current	I_{OZ}	$\overline{CONT}$=V_{SS}, F_{OUT}=V_{DD} or V_{SS}			±1	μA
Max. Operating Frequency	f_{MAX}				120	MHz
Output Signal Symmetry	SYM	C_L=20pF, at 2.5V, f_{IN}=120MHz V_{IN}=0.5V_{P-P}	45	50	55	%
Output Signal Rise Time	t_r	C_L=20pF, R_L=450Ω, 20% - 80%		0.8		ns
Output Signal Fall Time	t_f	C_L=20pF, R_L=450Ω, 80% - 20%		0.8		

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

■ MEASUREMENT CIRCUITS

(1) Output Symmetry



(2) Output Rise / Fall Time