TRI-STATE BUFFER

4

■ GENERAL DESCRIPTION

The NJU6342 Series is a tri-state buffer which is 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.

NJU6342H is TTL compatible and capable of 5 TTL driving.

NJU6342 is FACT equivalent.

■ PACKAGE OUTLINE

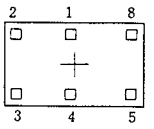
NJU6342XC

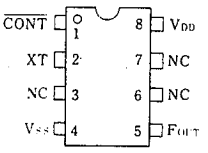
NJU6342XE

■ FEATURES

- Operating Voltage -- 4.0~6.0V
- Maximum Oscillation Frequency -- 120MHz
- Low Operating Current
- High Fan-out NJU6342 :FACT equivalent
  NJU6342H:5TTL
- 3-state Output Buffer
- Output Stand-by Function
- Package Outline -- CHIP/EMP 8
- C-MOS Technology

■ PIN CONFIGURATION/PAD LOCATION





■ LINE-UP TABLE

VERSION	Fan-out
NJU6342	FACT equivalent(I_{OL}/I_{OH}=24mA)
NJU6342H	5TTL

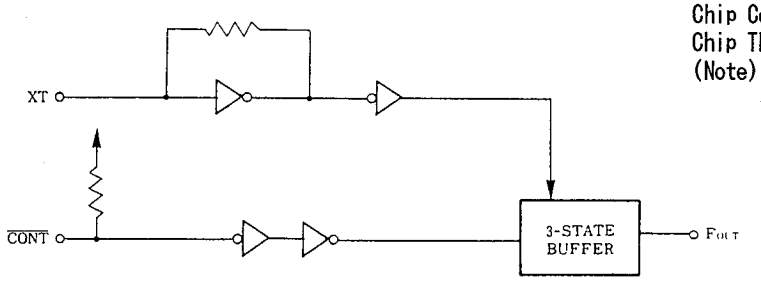
■ COORDINATES

Unit:μm

No.	PAD	X	Y
1	$\overline{\text{CONT}}$	- 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 Center : X=0μm,Y=0μm
Chip Thickness : 400μm ± 30μm
(Note) No. 6 and 7 terminals are only for package type information. There are no PAD on the chip.

■ BLOCK DIAGRAM



■ TERMINAL DESCRIPTION

NO.	SYMBOL	FUNCTION
1	$\overline{CONT}$	Tri-state output control terminal $\overline{CONT}$ / F_{OUT} H or OPEN / Input ECL oscillation signal output L / 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

4

■ 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	℃

Note) Decoupling capacitor should be connected between V_{DD} and V_{SS} due to the stabilized operation for the circuit.

■ ELECTRICAL CHARACTERISTICS

(Ta=25℃, V_{DD}=5V)

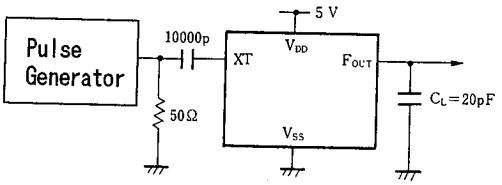
PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
Operating Voltage	V_{DD}			4		6	V
Operating Current	I_{DD}	f_{IN}=120MHz, V_{IN}=0.5V_{P-P} Sine wave input, No load				65	mA
Stand-by Current	Ist	$\overline{CONT}$=XT=V_{SS}, No load (Note)				1	μA
Input Voltage	V_{IH}	$\overline{CONT}$ Terminal		4.5		5.0	V
	V_{IL}			0		0.5	
Output Current	I_{OH}	V_{OH}=4.5V	NJU6342	24			mA
			NJU6342H	4			
	I_{OL}	V_{OL}=0.5V	NJU6342	24			
			NJU6342H	8			
Input Current	I_{IN}	$\overline{CONT}$ Terminal, $\overline{CONT}$=V_{SS}		125	250	500	μA
Tri-state Off-leakage Current	I_{OZ}	$\overline{CONT}$=V_{SS}, F_{OUT}=V_{DD} or V_{SS}				±1	μA
Max. Operating Frequency	f_{MAX}			120			MHz
Input Oscillation Swing	V_{IN}	C_{IN}=10000pF, f_{IN}=120MHz Sine wave input		0.5			V_{P-P}
Output Signal Symmetry	SYM	C_L=20pF @1/2V_{DD} f_{IN}=120MHz V_{IN}=0.5V_{P-P}	NJU6342	45	50	55	%
		C_L=15pF RL=780Ω @1.4V f_{IN}=120MHz V_{IN}=0.5V_{P-P}	NJU6342H	45	50	55	
Output Signal Rise Time	t_r	C_L=20pF, R_L=450Ω 20%～80%	NJU6342		0.8		ns
		C_L=15pF, R_L=780Ω 0.4V～2.4V	NJU6342H		1.4		
Output Signal Fall Time	t_f	C_L=20pF, R_L=450Ω 80%～20%	NJU6342		0.8		
		C_L=15pF, R_L=780Ω 2.4V～0.4V	NJU6342H		0.8		

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

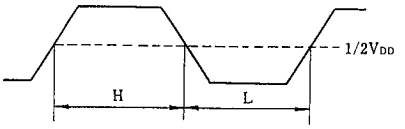
4

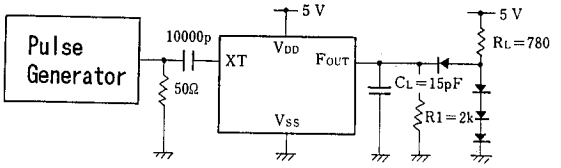
■ MEASUREMENT CIRCUITS

(1) Output Symmetry

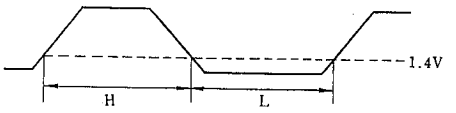


NJU6342

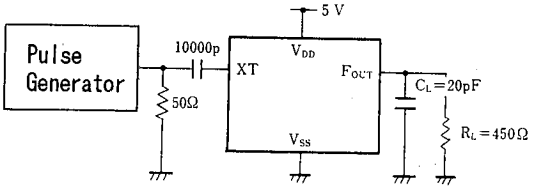




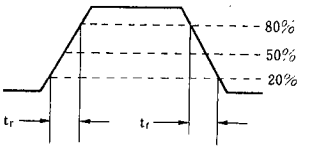
NJU6342H

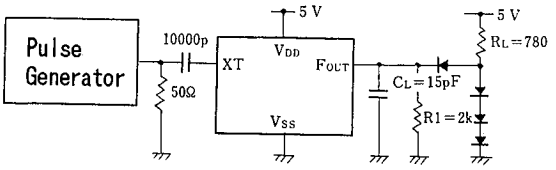


(2) Output Rise / Fall Time

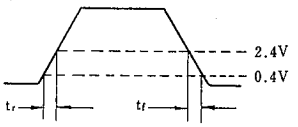


NJU6342





NJU6342H



MEMO