

DN74LS366A

Hex Bus Drivers (with 3-state Outputs)

Description

DN74LS366A contains six 3-state output inverter buffer circuits with common output-control inputs $\overline{G}_1$ and $\overline{G}_2$.

Features

- Common output-control inputs for all six circuits
- High fan-out ($I_{OL} = 24\text{mA}$, $I_{OH} = -2.6\text{mA}$)
- Wide operating temperature range ($T_a = -20$ to $+75^\circ\text{C}$)

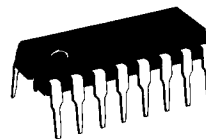
Truth tables

Inputs			Outputs
$\overline{G}_1$	$\overline{G}_2$	A	Y
H	X	X	Z
X	H	X	Z
L	L	H	L
L	L	L	H

Notes

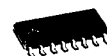
1. H: HIGH voltage level.
2. L: LOW voltage level.
3. X: Either HIGH or LOW; doesn't matter.
4. Z: High impedance.

P-2



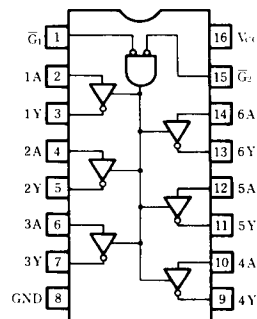
16-pin plastic DIL package

P-5



16-pin Panaflat package (SO-16D)

Pin configuration (top view)



Recommended operating conditions

Parameter	Sym	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.75	5.00	5.25	V
Output current	I_{OH}			-2.6	mA
	I_{OL}			24	mA
Operating temperature range	T_{opr}	-20	25	75	$^\circ\text{C}$

■ DC characteristics ($T_a = -20 \sim +75^\circ\text{C}$)

Parameter	Sym	Test conditions	Min	Typ*	Max	Unit
Input voltage	V_{IH}		2.0			V
	V_{IL}				0.8	V
Output voltage	V_{OH}	$V_{CC} = 4.75\text{V}$, $V_{IH} = 2\text{V}$ $V_{IL} = 0.8\text{V}$, $I_{OH} = -2.6\text{mA}$	2.4	3.1		V
	V_{OL1}	$V_{CC} = 4.75\text{V}$ $V_{IH} = 2\text{V}$ $V_{IL} = 0.8\text{V}$		0.25	0.4	V
	V_{OL2}	$I_{OL} = 12\text{mA}$				
		$I_{OL} = 24\text{mA}$		0.35	0.5	V
Output OFF current	I_{OZH}	$V_{CC} = 5.25\text{V}$ $V_{IH} = 2\text{V}$ $V_{IL} = 0.8\text{V}$			20	μA
	I_{OZL}	$V_O = 2.4\text{V}$ $V_O = 0.4\text{V}$			-20	μA
Input current	I_{IH}	$V_{CC} = 5.25\text{V}$, $V_{IH} = 2.7\text{V}$			20	μA
	A input I_{IL}	$V_{CC} = 5.25\text{V}$, either G input = 2V, $V_I = 0.5\text{V}$,			-20	μA
		$V_{CC} = 5.25\text{V}$, both G inputs = 0.4V, $V_I = 0.4\text{V}$,			-0.4	mA
		$V_{CC} = 5.25\text{V}$, $V_I = 0.4\text{V}$			-0.4	mA
	I_I	$V_{CC} = 5.25\text{V}$, $V_I = 7\text{V}$			0.1	mA
Output short circuit current**	I_{OS}	$V_{CC} = 5.25\text{V}$, $V_O = 0\text{V}$	-15		-130	mA
Input clamp voltage	V_{IK}	$V_{CC} = 4.75\text{V}$, $I_I = -18\text{mA}$			-1.5	V
Supply current***	I_{CC}	$V_{CC} = 5.25\text{V}$		12	21	mA

* When constant at $V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$.

** Only one output at a time short circuited to GND. also, short circuit time to GND within 1 second

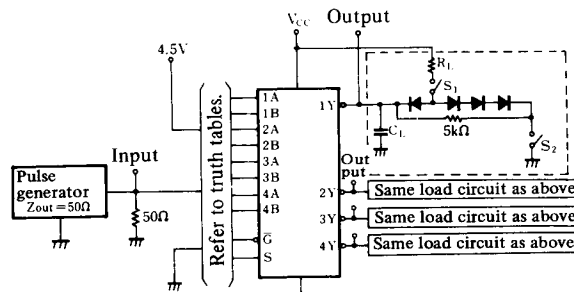
*** Measured with all outputs open, all inputs grounded, and 4.5V applied to all G inputs.

■ Switching characteristics ($V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$)

Parameter	Sym	Test conditions	Min	Typ	Max	Unit
Propagation delay time	t_{PLH}	$C_L = 45\text{pF}$ $R_1 = 667\Omega$		7	15	ns
	t_{PHL}			12	18	ns
Output enable time	t_{ZH}			18	35	ns
	t_{ZL}			28	45	ns
Output disable time	t_{HZ}	$C_L = 5\text{pF}$ $R_1 = 667\Omega$			32	ns
	t_{LZ}				35	ns

※ Switching parameter measurement information

1. Measurement circuit

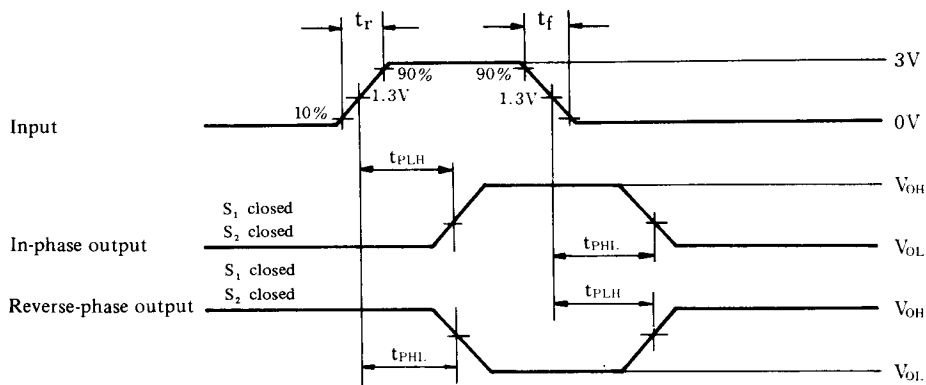


Notes

1. C_L includes probe and tool floating capacitance.
2. Diodes are all MA161 or equivalent.

2. Waveforms

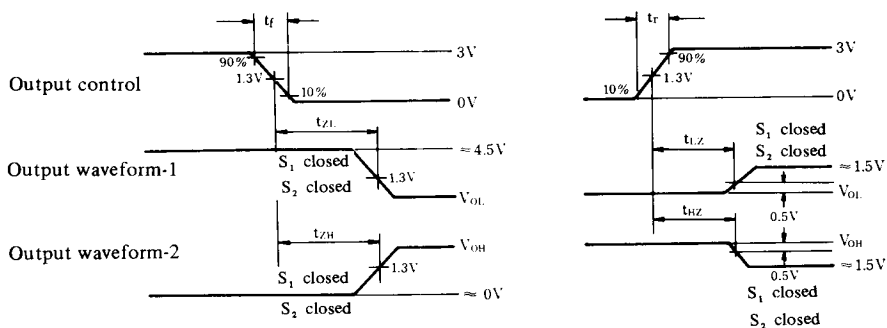
Waveforms-1



Notes

1. Input waveform: $t_r \leq 15\text{ns}$, $t_f \leq 6\text{ns}$, $\text{PRR} = 1\text{MHz}$, duty cycle = 50%

Waveforms-2



Notes

1. Input waveform: $t_r \leq 15\text{ns}$, $t_f \leq 6\text{ns}$, $\text{PRR} = 1\text{MHz}$, duty cycle = 50%.
2. Except when the output is disabled by the output control, output waveform-1 occurs as a result of internal conditions such as a LOW voltage level.
3. Except when the output is disabled by the output control, output waveform-2 occurs as a result of internal conditions such as a HIGH voltage level.
4. When measuring t_{PLH} and t_{PHL} , S_1 and S_2 are closed.