DN74LS365A

Hex Bus Drivers (with 3-state Outputs)

■ Description

DN74LS365A contains six 3-state output buffer circuits with common output-control inputs $\overline{G}_1$ and $\overline{G}_2$.
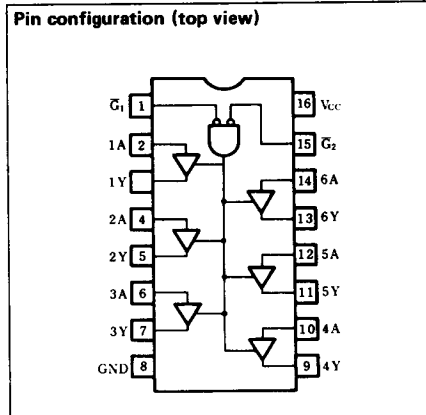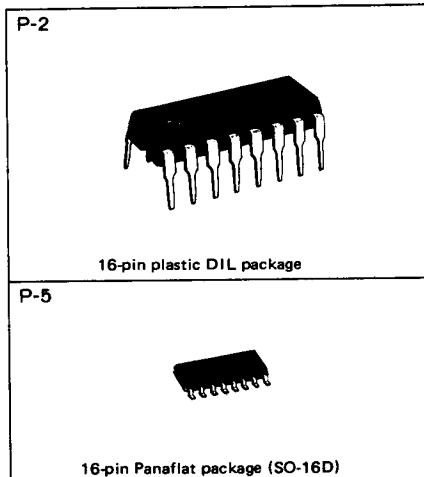
■ Features

- High fan-out (I_{OL} = 24mA, I_{OH} = −2.6mA)
- Wide operating temperature range (Ta = −20 to +75°C)

■ Truth tables

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

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	°C

■ DC characteristics (Ta = −20 ~ +75℃)

Parameter	Sym	Test conditions		Min	Typ*	Max	Unit
Input voltage	V_{IH}			2.0			V
	V_{IL}					0.8	V
Output voltage	V_{OH}	$V_{CC}=4.75V$, $V_{IH}=2V$ $V_{IL}=0.8V$, $I_{OH}=-2.6mA$		2.4	3.1		V
	V_{OL1}	$V_{CC}=4.75V$ $V_{IH}=2V$ $V_{IL}=0.8V$	$I_{OL}=12mA$		0.25	0.4	V
	V_{OL2}		$I_{OL}=24mA$		0.35	0.5	V
Output OFF current	I_{OZH}	$V_{CC}=5.25V$ $V_{IH}=2V$ $V_{IL}=0.8V$	$V_O=2.4V$			20	μA
	I_{OZL}		$V_O=0.4V$			−20	μA
Input current	I_{IH}	$V_{CC}=5.25V$, $V_{IH}=2.7V$				20	μA
A input	I_{IL}	$V_{CC}=5.25V$, either G input = 2V, $V_I=0.5V$,				−20	μA
		$V_{CC}=5.25V$, both G inputs=0.4V, $V_1=0.4V$,				−0.4	mA
$\overline{G}$ input		$V_{CC}=5.25V$, $V_I=0.4V$				−0.4	mA
	I_I	$V_{CC}=5.25V$, $V_I=7V$				0.1	mA
Output short circuit current**	I_{OS}	$V_{CC}=5.25V$, $V_O=0V$		−15		−130	mA
Input clamp voltage	V_{IK}	$V_{CC}=4.75V$, $I_I=-18mA$				−1.5	V
Supply current***	I_{CC}	$V_{CC}=5.25V$			14	24	mA

* When constant at $V_{CC} = 5V$, Ta = 25°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 $\overline{G}$ inputs.

■ Switching characteristics ($V_{CC}=5V$, Ta = 25℃)

Parameter	Sym	Test conditions	Min	Typ	Max	Unit
Propagation delay time	t_{PLH}	$C_L=45pF$ $R_L=667\Omega$		10	16	ns
	t_{PHL}			9	22	ns
Output enable time	t_{PZH}			19	35	ns
	t_{PZL}			24	40	ns
Output disable time	t_{PHZ}	$C_L=5pF$ $R_L=667\Omega$			30	ns
	t_{PLZ}				35	ns

※ Switching parameter measurement information
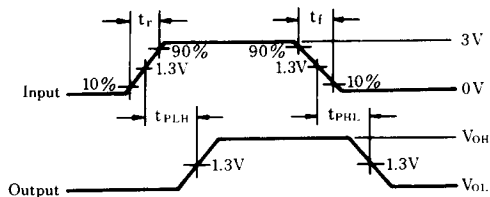
1. Measurement circuit
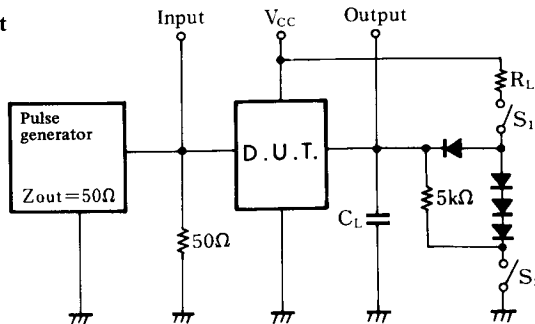
Notes
1. C_L includes probe and tool floating capacitance.
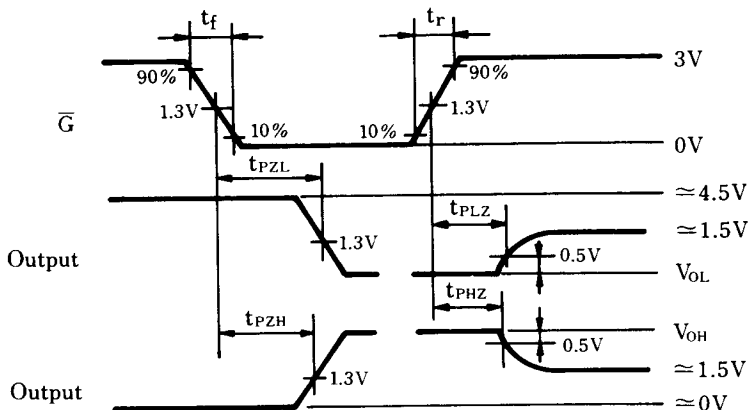2. Diodes are all MA161.

2. Waveforms

Waveforms-1

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

Waveforms-2

Notes
1. Input waveform: $t_r \leq 15ns$, $t_f \leq 6ns$