

DN74LS365A 74LS365A

Hex Bus Drivers (with 3-state Outputs)

Description

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

Features

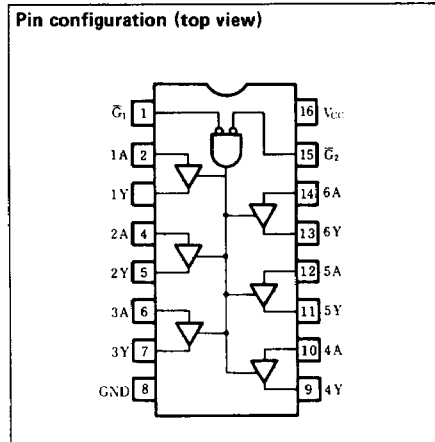
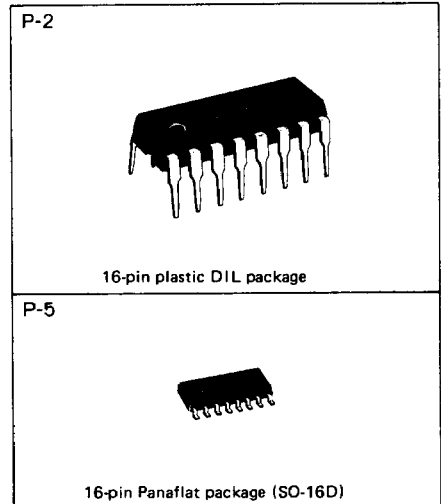
- High fan-out ($I_{OL} = 24\text{mA}$, $I_{OH} = -2.6\text{mA}$)
- Wide operating temperature range ($T_a = -20$ to $+75^\circ\text{C}$)

Truth tables

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



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	$^\circ\text{C}$

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■ DC characteristics (Ta = -20 ~ +75 °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 V, V _{IH} = 2 V V _{IL} = 0.8 V, I _{OH} = -2.6 mA	2.4	3.1		V	
	V _{OL1}	V _{CC} = 4.75 V V _{IH} = 2 V		0.25	0.4	V	
	V _{OL2}	V _{IL} = 0.8 V	I _{OL} = 12 mA		0.35	0.5	V
			I _{OL} = 24 mA				
Output OFF current	I _{OZH}	V _{CC} = 5.25 V V _{IH} = 2 V			20	μA	
	I _{OZL}	V _{IL} = 0.8 V			-20	μA	
	I _{IH}	V _{CC} = 5.25 V, V _{IH} = 2.7 V			20	μA	
Input current	A input	I _{IH}	V _{CC} = 5.25 V, either G input = 2 V, V _I = 0.5 V,			-20	μA
		I _{IL}	V _{CC} = 5.25 V, both G inputs = 0.4 V, V _I = 0.4 V,			-0.4	mA
	G input	I _{IL}	V _{CC} = 5.25 V, V _I = 0.4 V			-0.4	mA
	I _I	V _{CC} = 5.25 V, V _I = 7 V			0.1	mA	
Output short circuit current**	I _{OS}	V _{CC} = 5.25 V, V _O = 0 V	-15		-130	mA	
Input clamp voltage	V _{IK}	V _{CC} = 4.75 V, I _I = -18 mA			-1.5	V	
Supply current***	I _{CC}	V _{CC} = 5.25 V		14	24	mA	

* When constant at V_{CC} = 5 V, Ta = 25 °C.

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

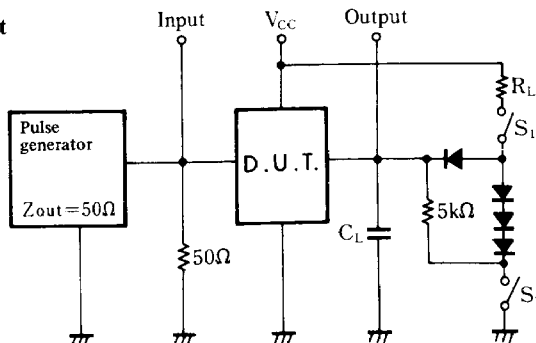
*** Measured with all outputs open, all inputs grounded, and 4.5V applied to all G inputs.

■ Switching characteristics (V_{CC} = 5 V, Ta = 25 °C)

Parameter	Sym	Test conditions	Min	Typ	Max	Unit
Propagation delay time	t _{PLH}	C _L = 45 pF		10	16	ns
	t _{PHL}			9	22	ns
Output enable time	t _{PZH}	R _I = 667 Ω		19	35	ns
	t _{PZL}			24	40	ns
Output disable time	t _{PHZ}	C _L = 5 pF R _I = 667 Ω			30	ns
	t _{PLZ}				35	ns

※ Switching parameter measurement information

1. Measurement circuit

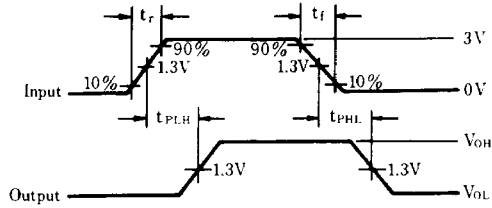


Notes

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

2. Waveforms

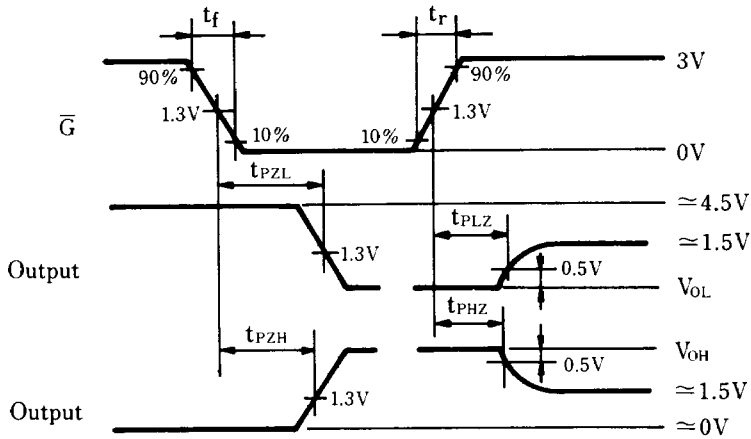
Waveforms-1



Notes

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

Waveforms-2



Notes

1. Input waveform: $t_r \leq 15\text{ns}$, $t_f \leq 6\text{ns}$