

GD54/74LS251

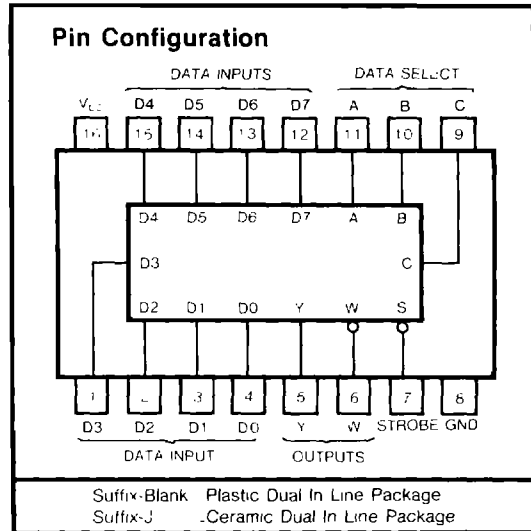
8-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS WITH 3-STATE OUTPUT

Features

- 3-State Versions of LS151
- Three-State Outputs Interface Directly with System Bus
- Performs Parallel-to-Serial Conversion
- Complementary Outputs Provide True and Inverted Data
- Fully Compatible with Most TTL Circuits

Description

These monolithic data selectors/multiplexers contain full on chip binary decoding to select one-of-eight data sources and feature a strobe controlled three state output. The strobe must be at a low logic level to enable these devices. The three-state outputs permit a number of outputs to be connected to a common bus. When the strobe input is high, both outputs are in a high impedance state in which both the upper and lower transistors of each totem-pole output are off and the output neither drives nor loads the bus significantly. When the strobe is low, the outputs are activated and operate as standard TTL



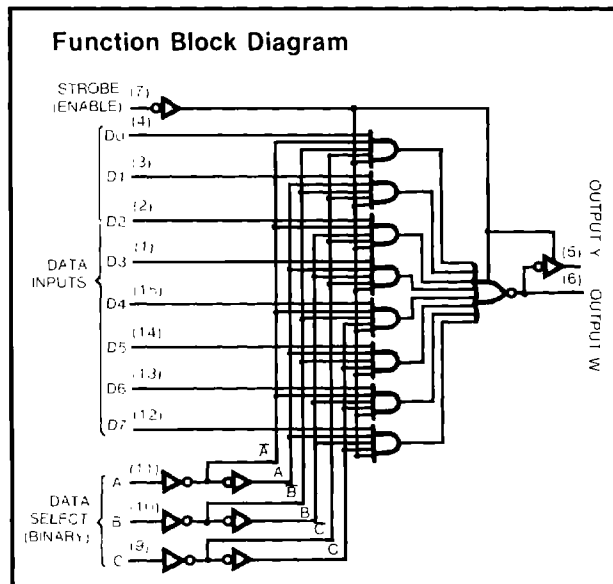
totem pole outputs.

GD54/74LS 251 has the same functions and pin connections as GD54/74LS151 but the latter is provided with active pull-up resistors outputs.

Function Table

INPUTS			STROBE	OUTPUTS	
C	B	A		Y	W
X	X	X	H	Z	Z
L	L	L	L	D0	$\overline{D0}$
L	L	H	L	D1	$\overline{D1}$
L	H	L	L	D2	$\overline{D2}$
L	H	H	L	D3	$\overline{D3}$
H	L	L	L	D4	$\overline{D4}$
H	L	H	L	D5	$\overline{D5}$
H	H	L	L	D6	$\overline{D6}$
H	H	H	L	D7	$\overline{D7}$

H=high logic level, L=low logic level
 X=irrelevant, Z=high impedance (off)
 D0-D7 = the level of the respective D input



Switching Characteristics, $V_{CC} = 5V$, $T_A = 25^\circ C$

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITION#	MIN	TYP	MAX	UNIT
t_{PLH}	A,B or C(4 levels)	Y	$C_L = 15pF$ $R_L = 2k\Omega$	29	45	ns	
t_{PHL}				28	45		
t_{PLH}	A,B, or C (3 levels)	W		20	33	ns	
t_{PHL}				21	33		
t_{PLH}	Any D	Y		17	28	ns	
t_{PHL}				18	28		
t_{PLH}	Any D	W		10	15	ns	
t_{PHL}				9	15		
t_{PZH}	Strobe	Y		30	45	ns	
t_{PZL}				26	40		
t_{PZH}	Strobe	W		17	27	ns	
t_{PZL}				24	40		
t_{PHZ}	Strobe	Y	$C_L = 5pF$ $R_L = 2k\Omega$	30	45	ns	
t_{PLZ}				15	25		
t_{PHZ}	Strobe	W		37	55	ns	
t_{PLZ}				15	25		

- * t_{PLH} =propagation delay time low-to-high-level output
- * t_{PHL} =propagation delay time high-to-low-level output
- * t_{PZH} =output enable time to high level
- * t_{PZL} =output enable time to low level
- * t_{PHZ} =output disable time from high level
- * t_{PLZ} =output disable time from low level

#For load circuit and voltage waveforms, see page 3-11