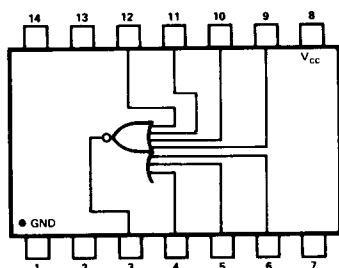


NOR GATES

SP314A	Single 7-Input
SP317A	Dual 4-Input Expandable
SP370A	Triple 3-Input
SP380A	Quad 2-Input

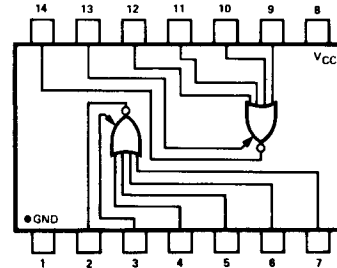
PIN CONFIGURATION

7-INPUT



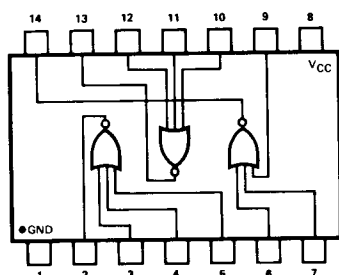
SP314A

DUAL 4-INPUT EXPANDABLE



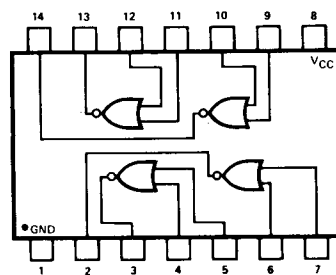
SP317A

TRIPLE 3-INPUT



SP370A

QUAD 2-INPUT



SP380A

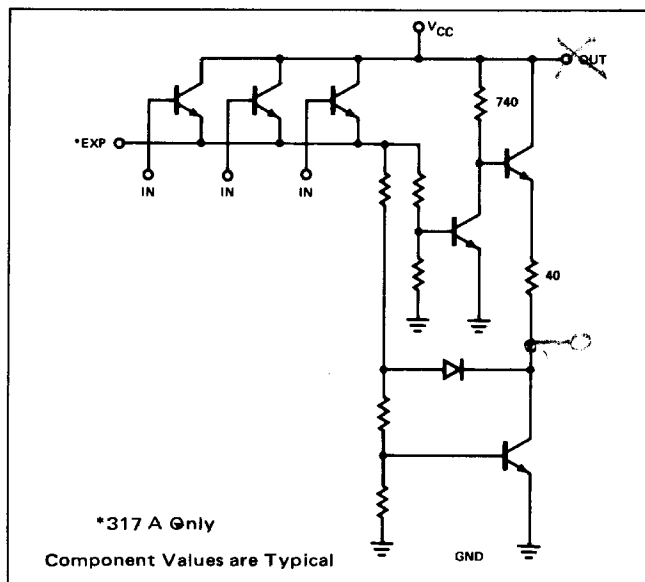
ELECTRICAL CHARACTERISTICS (Notes 1, 2, 3, 5 and 7)

Standard Conditions: $V_{CC} = 5.0V$, $T_A = \text{Operating Temp. Range (Unless Noted)}$

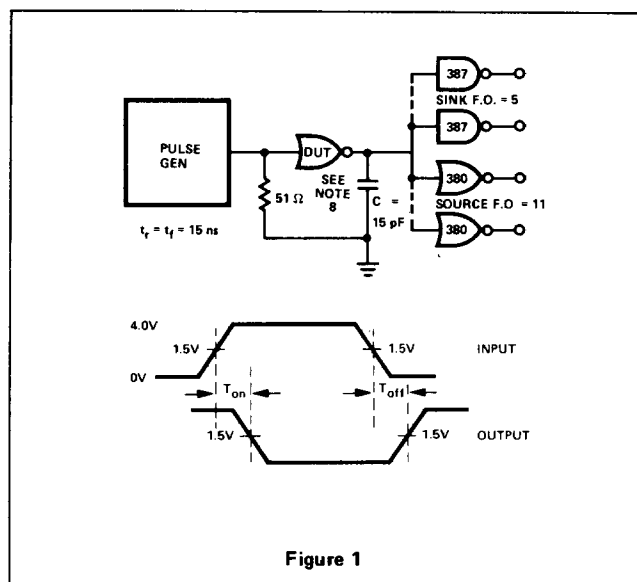
CHARACTERISTIC	TEST CONDITIONS	MIN.	TYP	MAX.	UNITS
Noise Immunity for "1" for "0"	See Note 6	1100 600	1700 1000		mV mV
Output Voltage "1" Level	$I_{out} = -2mA$, $V_{in} = 1.2V$	3.8			V
"0" Level	$I_{out} = 12.5mA$, $V_{in} = 2.7V$ $I_{out} = 7.5mA$, $V_{in} = 2.7V$			0.6 0.4	V V
Input Current - input high	$V_{in} = 2.7V$			180	μA
Power Supply Current output high	$V_{in} = 0V$, $T_A = 25^\circ C$			0.3	mA/gate
output low	$V_{in} = 4.0V$, $T_A = 25^\circ C$		13.4	18.1	mA/gate
Turn on Delay	See Test Figure 1, $T_A = 25^\circ C$		25	60	ns
Turn off Delay	See Test Figure 1, $T_A = 25^\circ C$		50	80	ns
Fan-Out -To sink loads (2.5mA/load) -To source loads (180 μA /load)				5 11	
Expander Voltage (317 only)	$V_{in} = 2.7V$	1.85			V

Typical Values are for $T_A = 25^\circ C$. See Page 3 for Notes.

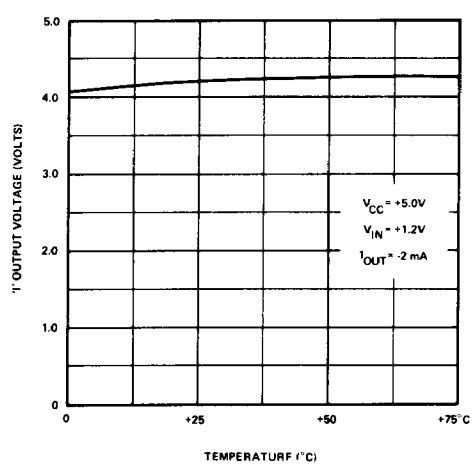
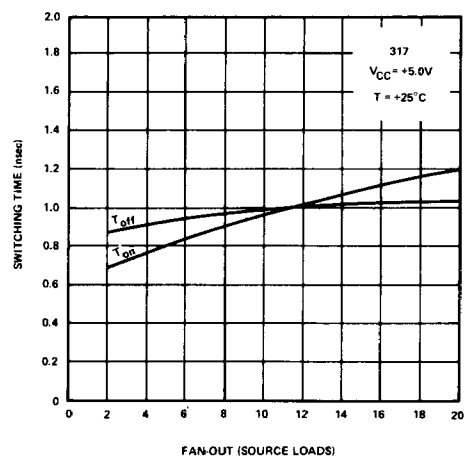
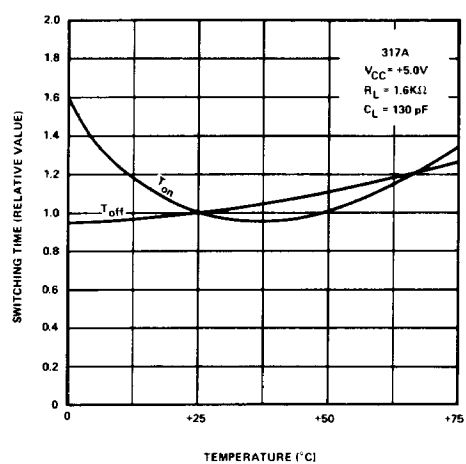
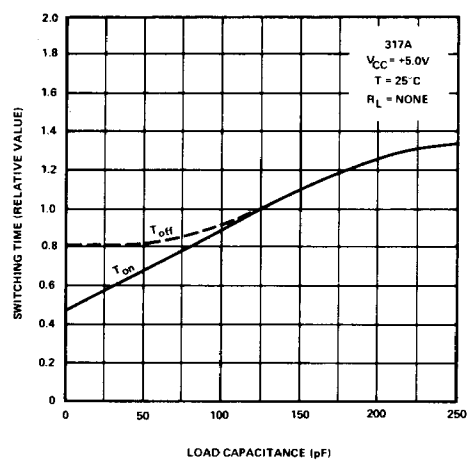
SCHEMATIC DIAGRAM



TEST CIRCUIT AND WAVEFORM



The following curves are normalized, when applicable, to the standard data sheet conditions.



The following curves are normalized, when applicable, to the standard data sheet conditions.

