

A,F,W PACKAGE

DIGITAL 8000 SERIES TTL/MSI

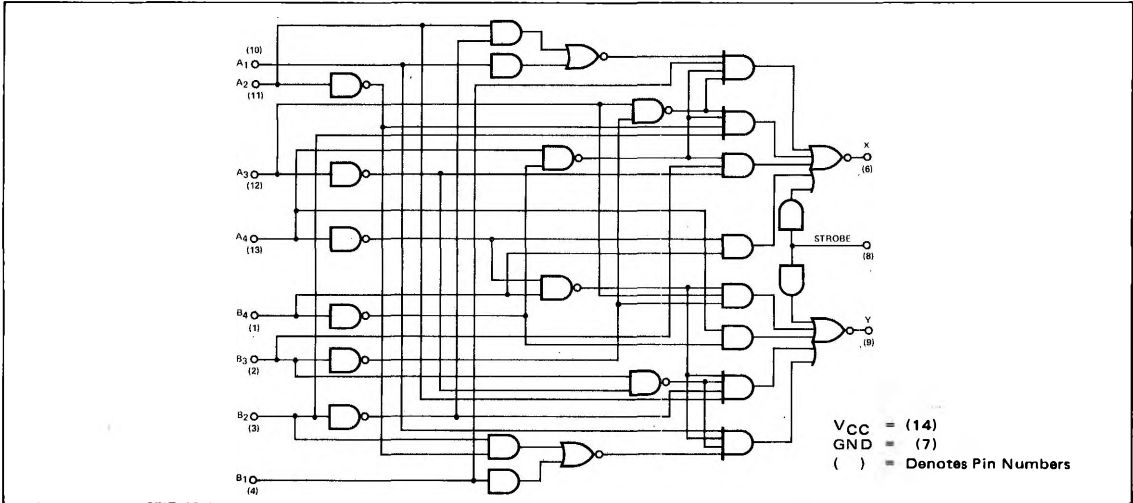
DESCRIPTION

The 8269, a 4 BIT COMPARATOR, is an array of gates designed to perform the numerical comparison of two four-bit binary numbers. The outputs indicate whether the two numbers are equal in value, or which number is the greater. The 8269 is a functional and pin-for-pin replacement for the DM8200.

TRUTH TABLE

INPUT			OUTPUT	
A _n	B _n	STROBE	X	Y
A	> B	0	1	0
A	< B	0	0	1
A	= B	0	1	1
A	≠ B	1	0	0

LOGIC DIAGRAM



ELECTRICAL CHARACTERISTICS (Over Recommended Operating Temperature And Voltage)

CHARACTERISTICS	LIMITS				TEST CONDITIONS	NOTES
	MIN.	TYP.	MAX.	UNITS		
"1" Output Voltage	2.6	3.5		V	$I_{out} = 800\mu A$ $I_{out} = 16mA$ $V_{in} = 4.5V$ $V_{in} = 0.4V$ $V_{CC} = 5.25V$	6
"0" Output Voltage		0.2	0.4	V		7
"1" Input Current			80	μA		
"0" Input Current	-0.1		-3.2	mA	$V_{out} = 0V, V_{CC} = 5.25V$ $I_{in} = 10mA$	8
Power Consumption			278/53	mW/mA		
Short Circuit Output Current	-18		-55	mA		
Input Voltage Rating	5.5			V		

T_A = 25° C and V_{CC} = 5.0V

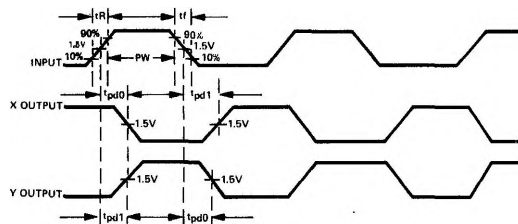
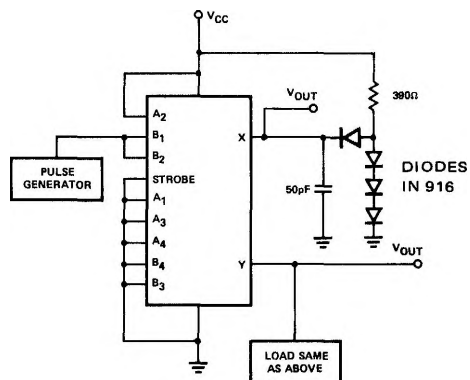
CHARACTERISTICS	LIMITS				TEST CONDITIONS
	MIN.	TYP.	MAX.	UNITS	
Propagation Delay					
tpd1 (Data Input to Output)			40	ns	Test Figure 1
tpd0 (Data Input to Output)			30	ns	Test Figure 1
tpd1 (Strobe to Output)			27	ns	Test Figure 2
tpd0 (Strobe to Output)			18	ns	Test Figure 2

NOTES:

1. All voltage and capacitance measurements are referenced to the ground terminal.
Terminals not specifically referenced are left electrically open.
2. All measurements are taken with ground pin tied to zero volts.
3. Positive current flow is defined as into the terminal referenced.
4. Positive logic definition: "UP" Level = "1", "DOWN" Level = "0"

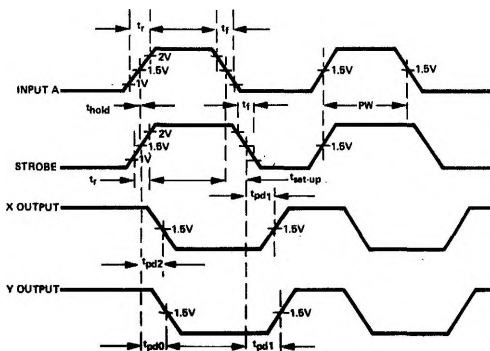
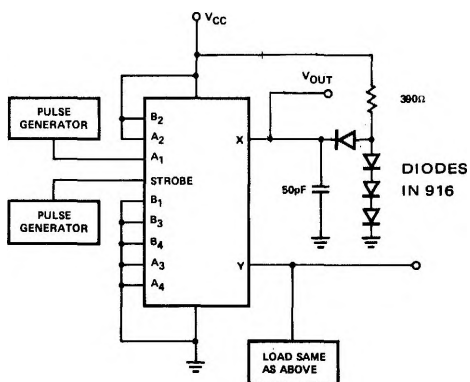
5. Precautionary measures should be taken to ensure current limiting in accordance with Absolute Maximum Ratings should the isolation diodes become forward biased.
6. Output source current is supplied through a resistor to ground.
7. Output sink current is supplied through a resistor to V_{CC} .
8. Not more than one output should be shorted at a time.

AC TEST FIGURE AND WAVEFORMS



INPUT PULSE:
 $f = 1\text{MHz}$
 $PW = 100\text{ns}$
 $t_r = t_f = 10\text{ns} \pm 1\text{ns}$
 $AMP. = 3.0\text{V}$

FIGURE 1



INPUT PULSE:
 INPUT A
 $f = 1\text{MHz}$
 $PW = 100\text{ns}$
 $t_r = t_f = 10\text{ns} \pm 1\text{ns}$
 $AMP. = 3.0\text{V}$

STROBE INPUT
 $f = 1\text{MHz}$
 $t_{\text{hold}} = 0\text{ns}$
 $t_{\text{set-up}} = 10\text{ns}$
 $t_r = t_f = 10\text{ns} \pm 1\text{ns}$

FIGURE 2