8T10 B,F,W

DESCRIPTION

The 8T10 is a high speed Quad D flip-flop with tri-state outputs for use in bus-organized systems. The high current sink capability permits up to 20 standard loads to be interconnected on a single bus. The outputs present a high impedance to the bus when disabled (Control Input "1") and active drive when enabled (Control Inputs "0").

All four D-type flip-flops operate from a common clock with data being transferred on the low-to-high transition of the pulse.

A common clear input resets all flip-flops upon application of a logic "1" level.

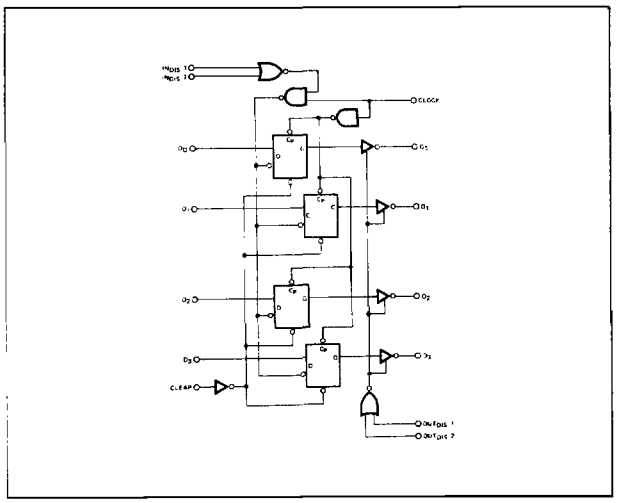
Data will be stored if either one or both inputs to the Input Disable NOR gate is a logic "1".

TRUTH TABLE

D_n	IN_{DIS}	OUT_{DIS}	O_{n+1}
0	0	0	0
1	0	0	1
X	1	0	O_n
X	X	1	High Z

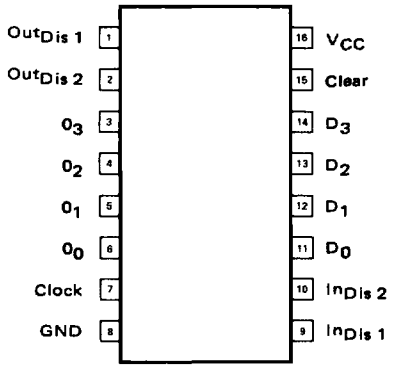
O_n refers to the output state before a clock pulse.
O_n + 1 refers to the output state after a clock pulse.

LOGIC DIAGRAM



PIN CONFIGURATION

B,F,W PACKAGE



T_A = 25° C and V_{CC} = 5.0V

PARAMETER	LIMITS			UNITS
	MIN.	TYP.	MAX.	
Propagation Delay (t_{on}, t_{off})				
Clock to Output				
C_L = 30pf		18	25	ns
C_L = 300pf		24	35	ns
Disable to Output				
High Z to Logic 0, t_{pZL}		20	30	ns
State (C_L = 300pf)				
Logic 0 to High Z, t_{pLZ}		20	30	ns
High Z (C_L = 300pf)				
Clear to Output				
C_L = 30pf		15	22	ns
C_L = 300pf		21	30	ns
Set Up Time, t_{setup}				
Data	+5	−1		ns
Input Disable		−6	0	ns
Hold Time, t_{hold}				
Data		−1	+5	ns
Reset Pulse Width	15			ns
Clock Frequency	35	50		MH_z
Clock Pulse Width				
Positive		8	12	ns
Negative		8	12	ns

1. Measured to 1.5V level of output waveform.
2. Measured to 10% level of output waveform.
3. Refer to AC Test Circuits.

AC TEST CIRCUITS AND WAVEFORMS

PROPAGATION DELAY t_{on}, t_{off} (CLOCK TO OUTPUT)

DATA SETUP TIME, t_{setup}

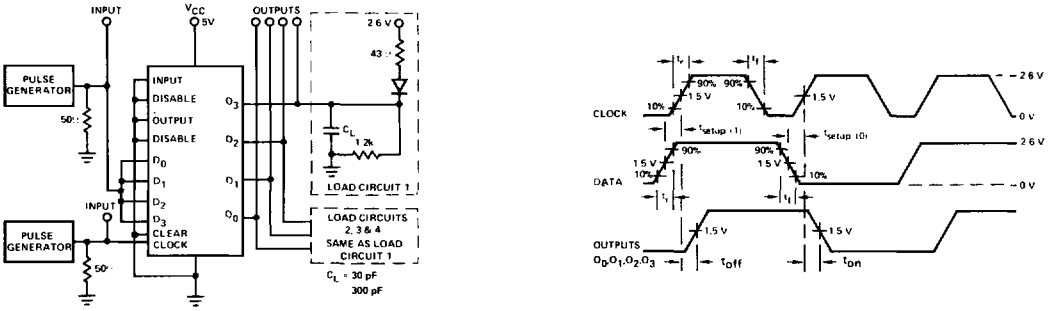


FIGURE 1

PROPAGATION DELAY (CLEAR TO OUTPUT)

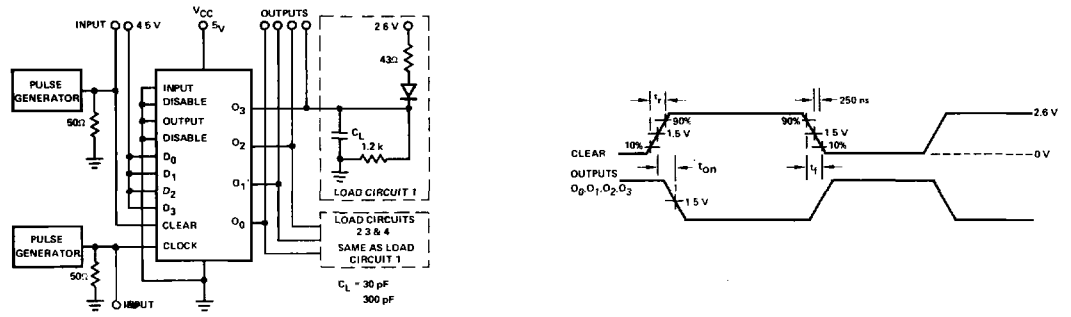


FIGURE 2

PROPAGATION DELAY (DATA HOLD TIME)

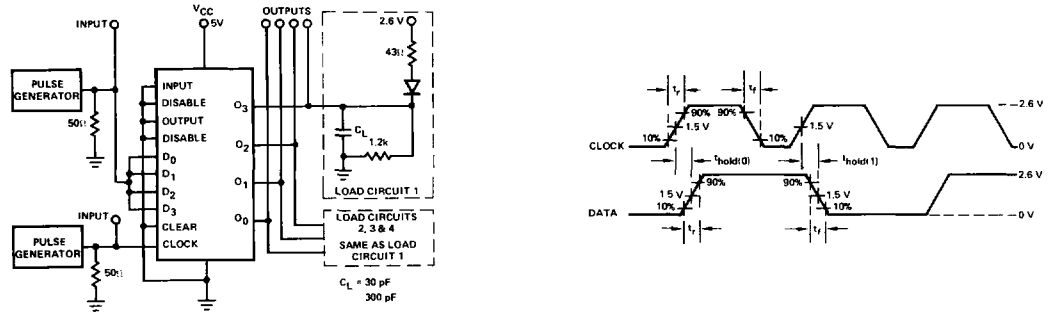


FIGURE 3

AC TEST FIGURES AND WAVEFORMS (Cont'd)

PROPAGATION DELAY (DISABLE TO OUTPUT)

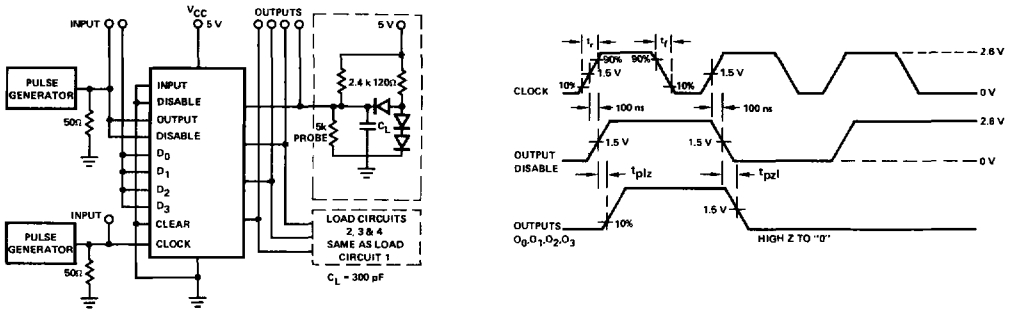
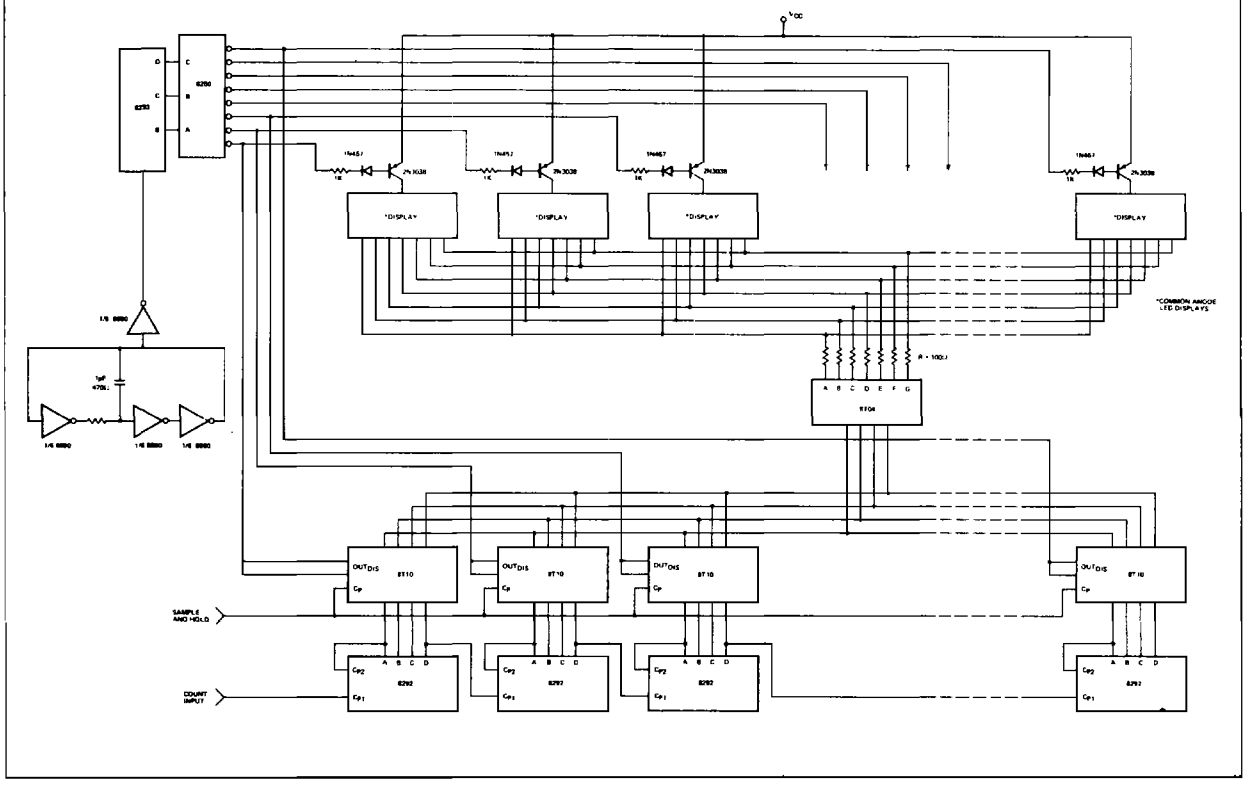


FIGURE 4

TYPICAL APPLICATIONS

MULTIPLEXING EIGHT LED DISPLAYS



TYPICAL APPLICATIONS