

RETRIGGERABLE ONE-SHOT

8T22

PRODUCT AVAILABLE IN 0°C TO +75°C TEMP. RANGE ONLY.

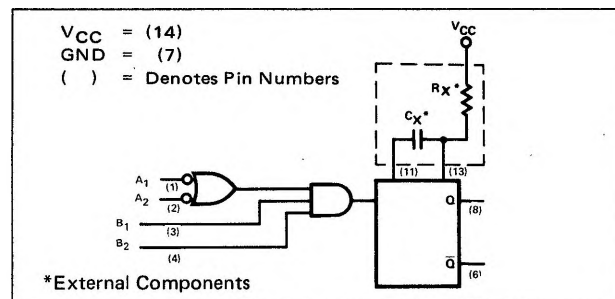
DIGITAL 8000 SERIES TTL/MSI

DESCRIPTION

The Signetics N8T22A is a direct pin-for-pin replacement for the 9601 retriggerable one-shot. Triggering can be performed on either the leading or falling edge of the input signal through selection of the proper input terminal.

The inputs are level-sensitive making triggering independent of signal transition times. Output pulse width is determined by external timing components (R_X and C_X) with each trigger pulse initiating a complete new timing cycle.

LOGIC DIAGRAM



ELECTRICAL CHARACTERISTICS (Over Recommended Operating Temperature And Voltage)

CHARACTERISTICS	LIMITS				TEST CONDITIONS
	MIN.	TYP.	MAX.	UNITS	
"1" Output Voltage	2.4	3.4		V	$I_{out} = -960\mu A$
"0" Output Voltage		0.2	0.45	V	$I_{out} = 12.8mA$
Input HIGH Voltage	1.9			V	
Input LOW Voltage			0.9	V	
"0" Input Current			1.6	mA	$V_{in} = 0.45V$
"1" Input Current			60	μA	$V_{in} = 4.5V$
Timing Resistor	5.0		50	k Ω	
C_{Stray} - Maximum allowable wiring capacitance			50	pF	P13 to Ground

$T_A = 25^\circ C$ and $V_{CC} = 5.0V$

CHARACTERISTICS	LIMITS				TEST CONDITIONS
	MIN.	TYP.	MAX.	UNITS	
Propagation Delay					
Negative Trigger Input to True Output (t_{pd+})		25	40	ns	$R_X = 5.0k\Omega, C_X = 0$ $C_L = 15pF$
Negative Trigger Input to False Output (t_{pd-})		25	40	ns	$R_X = 5.0k\Omega, C_X = 0$ $C_L = 15pF$
Min. True Output Pulse Width		45	65	ns	$R_X = 5.0k\Omega, C_X = 0$ $C_L = 15pF$
Pulse Width Variation	3.08	3.42	3.76	μs	$R_X = 10k\Omega, C_X = 1000pF$
Short Circuit Current	-10		-40	mA	$V_{out} = 0V$
Power Supply Current			25	mA	$V_{CC} = 5.25V$

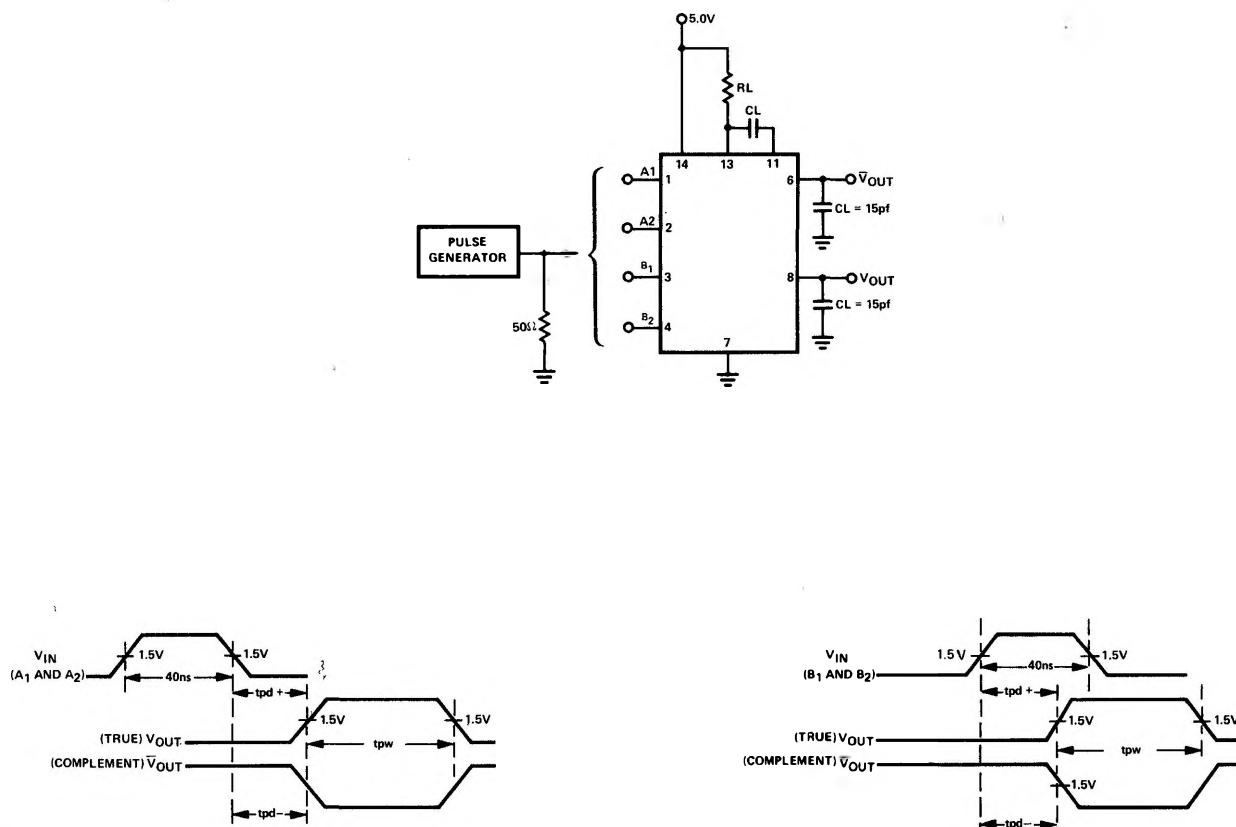
SIGNETICS DIGITAL 8000 SERIES TTL/MSI — 8T22

NOTES:

1. Positive current is defined as into the pin referenced.
2. Unless otherwise noted, 10k Ω resistor placed between Pin 13 and V_{CC} (R_X).
3. Manufacturer reserves the right to make design and process changes and improvements.

AC TEST FIGURE AND WAVEFORMS

TRIGGER INPUT/OUTPUT AND PULSE WIDTH



WAVEFORM A.

WAVEFORM B.

NOTES:

1. Pulse Generator has the following characteristics:
 $t_r = t_f = 10\text{ns}$ (10% to 90%), AMP. = 3V.
 C_L includes probe and jig capacitance.
2. For $tpd+$, $tpd-$ and tpw (min.)
 $R_X = 5k\Omega \pm 1\%$, $C_X = \text{OPEN}$, PRR = 1MHz.
3. For Δtpw : $R_X = 10k\Omega \pm 1\%$, $C_X = 1000\text{pF} \pm 1\%$,
 PRR = 200kHz.