1. DESCRIPTION

Each circuit functions as a 2-input NAND gate, but because of the Schmitt action,it has different input threshold levels for positive (V_{T+}) and for negative going(V_{T-}) signals.

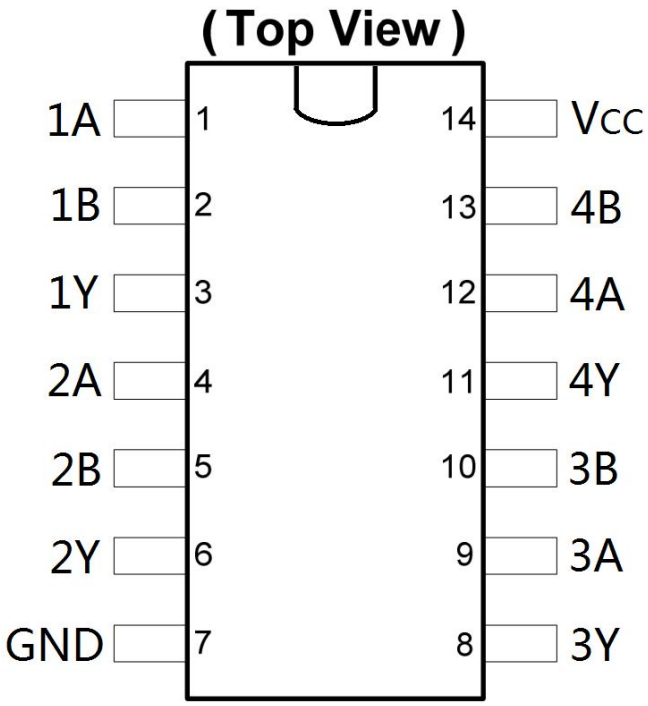
These circuits are temperature-compensated and can be triggered from the slowest of input ramps and still give clear, jitter-free output signals.

The XD74LS132 is characterized for operation from 0℃ to 70℃.

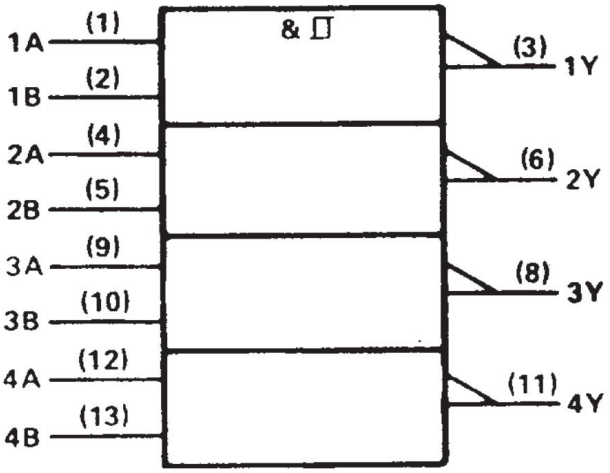
2. FEATURES

- Operation from Very Slow Edges
- Improved Line-Receiving Characteristics
- High Noise Immunity

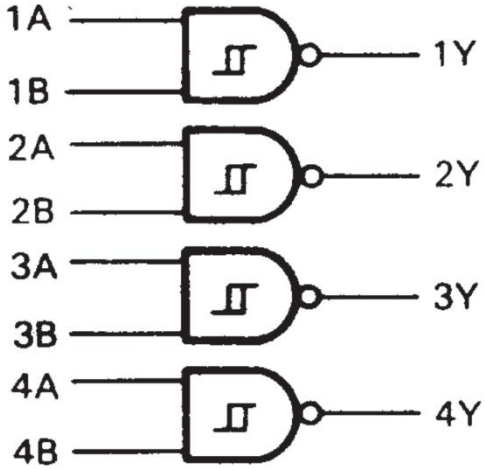
3. PIN CONFIGURATIONS



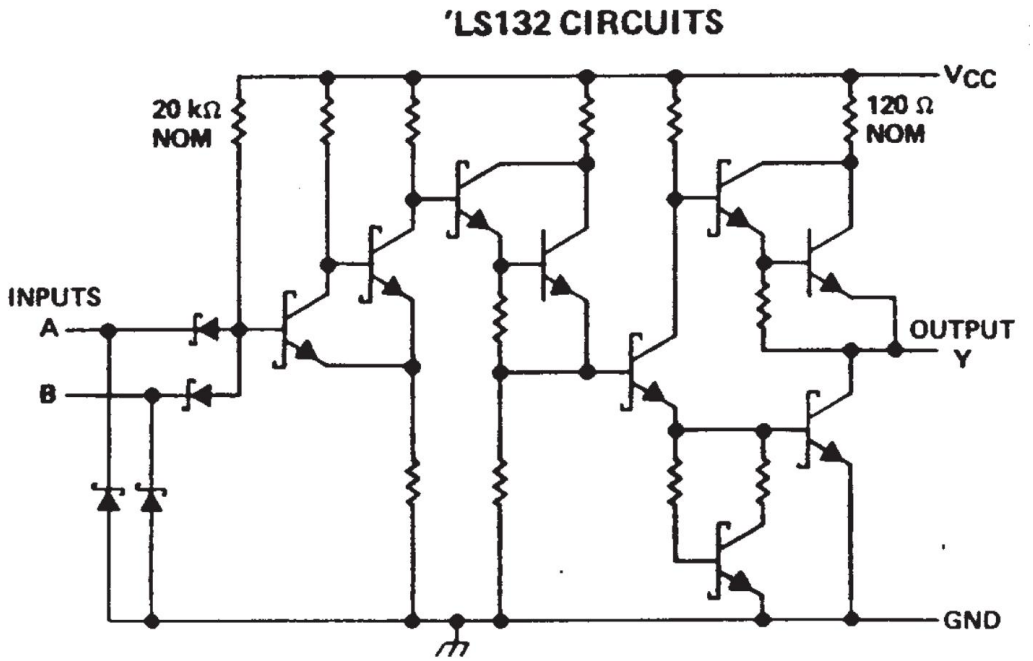
4. LOGIC SYMBOL



5. LOGIC DIAGRAM



6. SCHEMATICS (each gate)



7. ABSOLUTE MAXIMUM RATINGS OVER OPERATING FREE-AIR TEMPERATURE RANGE (UNLESS OTHERWISE NOTES)

Supply voltage, V_{CC} (see Note 1)..... 7V

Input voltage, VI: 74LS132..... 7V

Operating free-air temperature range: DIP package..... 0°C to 70°C

Storage temperature range, Tstg..... −65°C to 150°C

NOTE 1 : Voltage values are with respect to network ground terminals.

8. RECOMMENDED OPERATING CONDITIONS

		XD74LS132			UNIT
		MIN	NOM	MAX	
V_{CC}	Supply voltage	4.75	5	5.25	V
I_{OH}	High-level output current			−0.4	mA
I_{OL}	Low-level output current			8	mA
T_A	Operating free-air temperature	0		70	°C

9. ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING FREE-AIR RANGE (UNLESS OTHERWISE NOTED)

PARAMETER	TEST CONDITIONS†			XD74LS132			UNIT
				MIN	TYP‡	MAX	
V_{T+}	V_{CC} = 5V			1.4	1.6	1.9	
V_{T-}	V_{CC} = 5V			0.5	0.8	1	
V_{hys} (V_{T+} V_{T-})	V_{CC} = 5V			0.4	0.8		
V_{IK}	V_{CC} = MIN,	I_I = −18 mA				−1.5	V
V_{OH}	V_{CC} = MIN,	V_{IL} = MAX,	I_{OH} = −0.4 mA	2.7	3.4		V
V_{OL}	V_{CC} = MIN,	V_{IH} = 2 V	I_{OL} = 4 mA		0.25	0.4	V
			I_{OL} = 8 mA		0.35	0.5	
I_{T+}	V_{CC} = 5V	$V_I = V_{T+}$			-0.14		
I_{T-}	V_{CC} = 5V	$V_I = V_{T-}$			-0.18		
I_I	V_{CC} = MAX,	V_I = 7 V				0.1	mA
I_{IH}	V_{CC} = MAX,	V_I = 2.7 V				20	μA
I_{IL}	V_{CC} = MAX,	V_I = 0.4 V				−0.4	mA
I_{OS}§	V_{CC} = MAX			−20		−100	mA
I_{CCH}	V_{CC} = MAX				5.9	11	mA
I_{CCL}	V_{CC} = MAX				8.2	14	mA

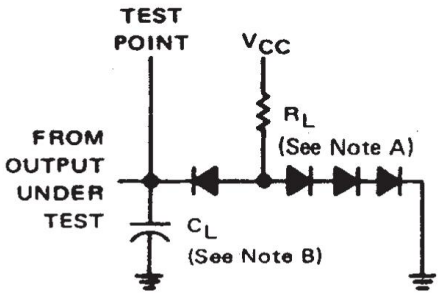
† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at V_{CC} = 5 V, T_A = 25°C.
§ Not more than one output should be shorted at a time, and the duration of the short-circuit should not exceed one second.

10. SWITCHING CHARACTERISTICS,VCC = 5 V, TA = 25℃ (see Figure 1)

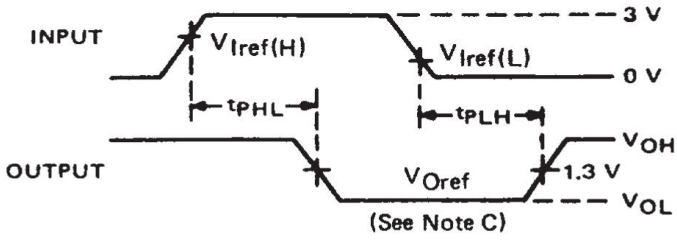
PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS		XD74LS132			UNIT
					MIN	TYP	MAX	
t_{PLH}	Any	Y	RL = 2 kΩ,	CL = 15 pF		15	22	ns
t_{PHL}						15	22	ns

NOTE 2: Load circuits and voltage waveforms are shown in Section 1.

11. PARAMETER MEASUREMENT INFORMATION



LOAD CIRCUIT

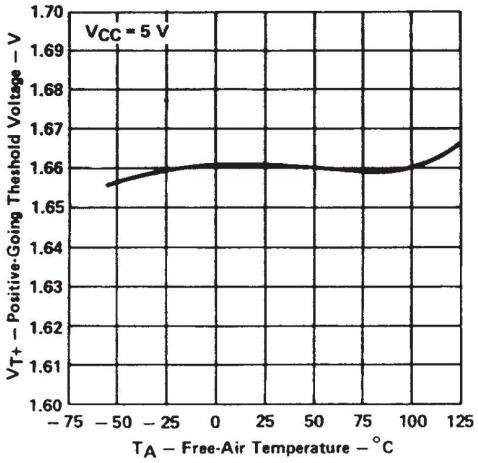


VOLTAGE WAVEFORMS

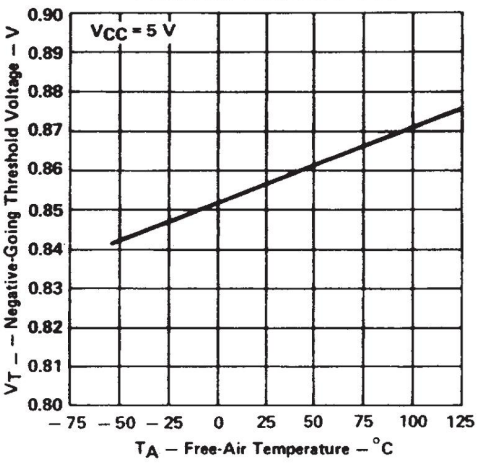
NOTES: A. All diodes are 1N3064 or equivalent.
B. C_L includes probe and jig capacitance.
C. Generator characteristics and reference voltages are:

12. TYPICAL CHARACTERISTICS OF 'LS132 CIRCUITS

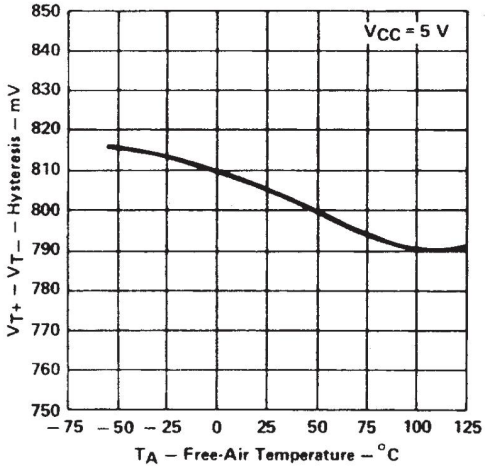
POSITIVE-GOING THRESHOLD VOLTAGE vs FREE-AIR TEMPERATURE



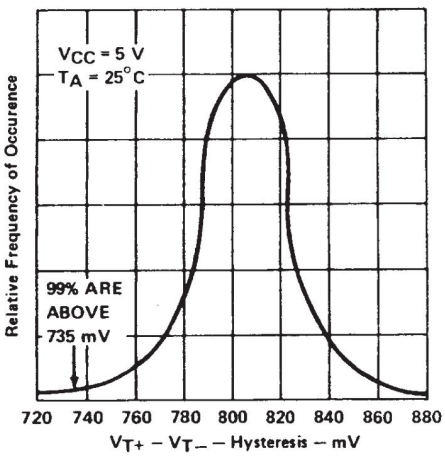
NEGATIVE-GOING THRESHOLD VOLTAGE vs FREE-AIR TEMPERATURE



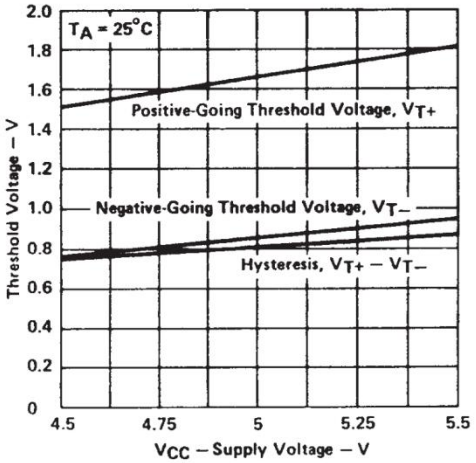
HYSTERESIS vs FREE-AIR TEMPERATURE



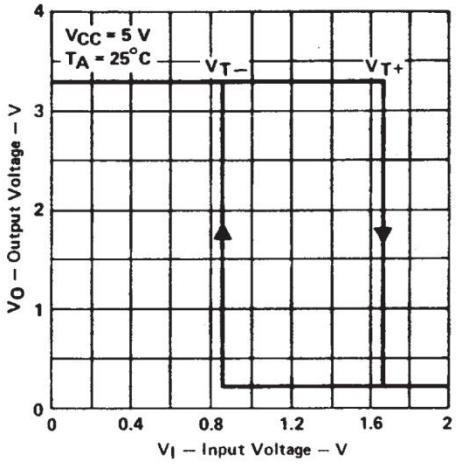
DISTRIBUTION OF UNITS FOR HYSTERESIS



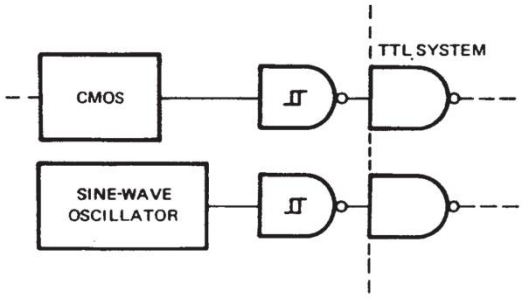
THRESHOLD VOLTAGES AND HYSTERESIS
vs
SUPPLY VOLTAGE



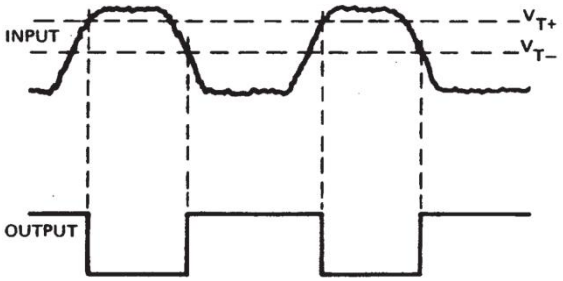
OUTPUT VOLTAGE
vs
INPUT VOLTAGE



13. TYPICAL APPLICATION DATA

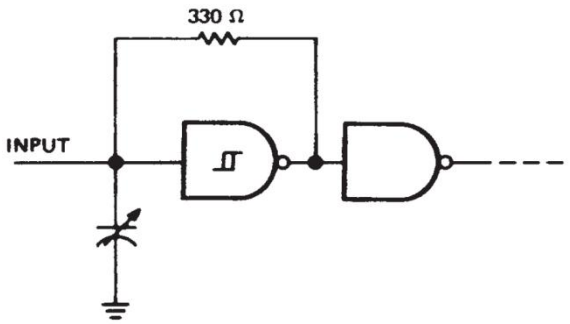


TTL SYSTEM INTERFACE
FOR SLOW INPUT WAVEFORMS

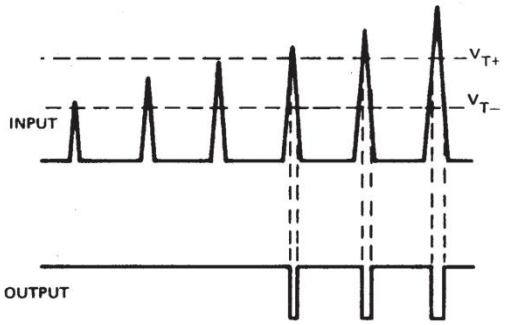


PULSE SHAPER

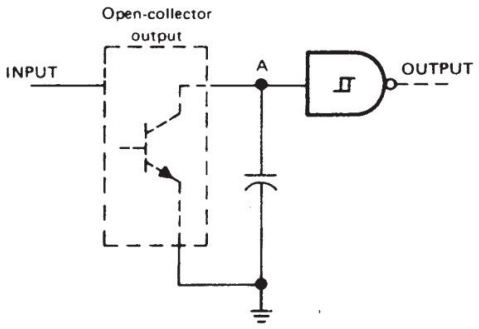
0.1 Hz to 10 MHz

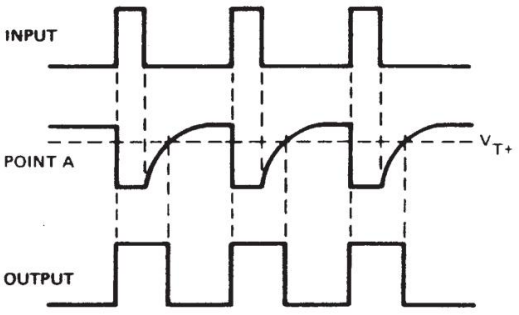


MULTIVIBRATOR



THRESHOLD DETECTOR





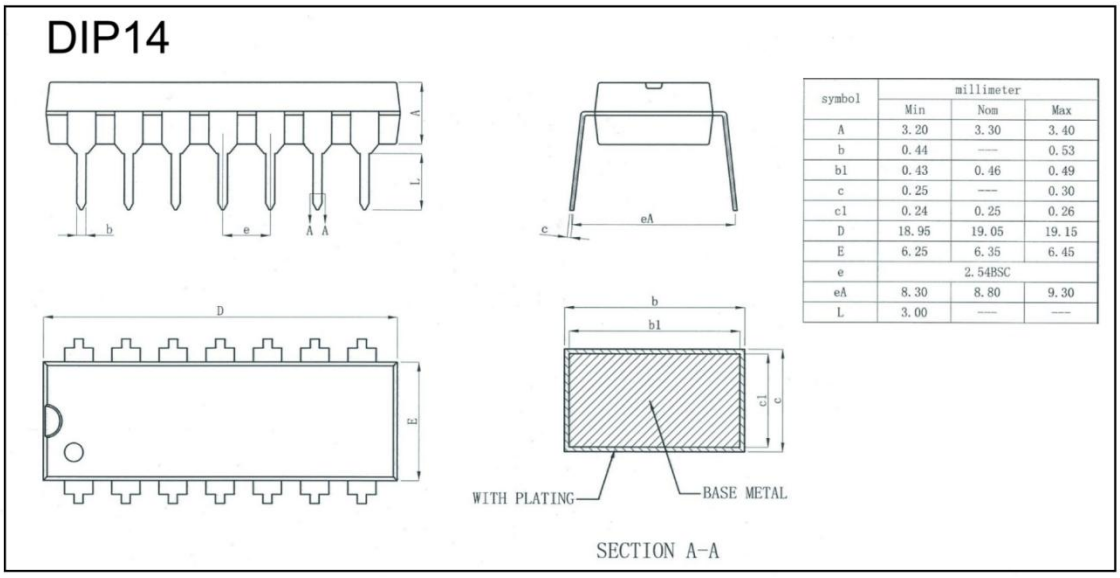
PULSE STRETCHER

14. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XD74LS132	XD74LS132	DIP14	19.05 * 6.35	-0 to 70	MSL3	Tube 25	1000

15. DIMENSIONAL DRAWINGS



symbol	millimeter		
	Min	Nom	Max
A	3.20	3.30	3.40
b	0.44	---	0.53
b1	0.43	0.46	0.49
c	0.25	---	0.30
c1	0.24	0.25	0.26
D	18.95	19.05	19.15
E	6.25	6.35	6.45
e	2.54BSC		
eA	8.30	8.80	9.30
L	3.00	---	---