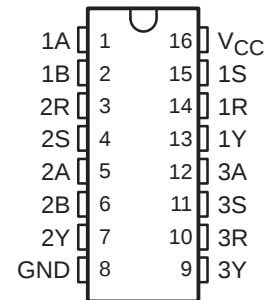


- Meets or Exceeds the Requirements of IBM™ System 360 Input/Output Interface Specification
- Operates From Single 5-V Supply
- TTL Compatible
- Built-In Input Threshold Hysteresis
- High Speed . . . Typical Propagation Delay Time = 20 ns
- Independent Channel Strobes
- Input Gating Increases Application Flexibility
- Designed for Use With Dual Line Driver SN75123
- Designed to Be Interchangeable With Signetics N8T24

D OR N PACKAGE
(TOP VIEW)



description

The SN75124 triple line receiver is specifically designed to meet the input/output interface specifications for IBM System 360. It is also compatible with standard TTL logic and supply voltage levels.

The SN75124 has receiver inputs with built-in hysteresis to provide increased noise margin for single-ended systems. An open line affects the receiver input as does a low-level input voltage, and the receiver input can withstand a level of -0.15 V with power on or off. The other inputs are in TTL configuration. The S input must be high to enable the receiver input. Two of the line receivers have A and B inputs that, if both are high, hold the output low. The third receiver has only an A input that, if high, holds the output low.

See the SN751730 for new IBM 360/370 interface designs.

The SN75124 is characterized for operation from 0°C to 70°C .

FUNCTION TABLE

INPUTS				OUTPUT Y
A	B [†]	R	S	
H	H	X	X	L
X	X	L	H	L
L	X	H	X	H
L	X	X	L	H
X	L	H	X	H
X	L	X	L	H

[†] B input and last two lines of the function table are applicable to receivers 1 and 2 only.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

IBM is a trademark of International Business Machines Corp.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



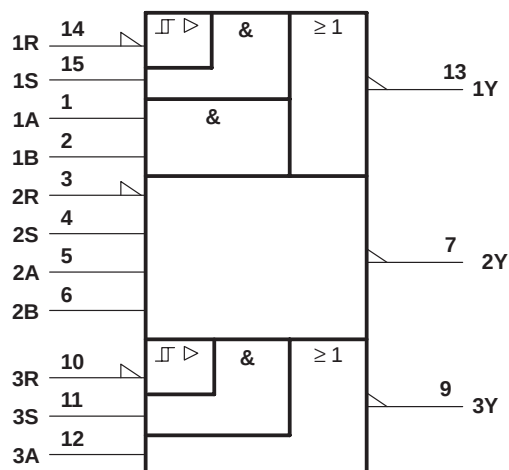
POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

Copyright © 1995, Texas Instruments Incorporated

SN75124 TRIPLE LINE RECEIVER

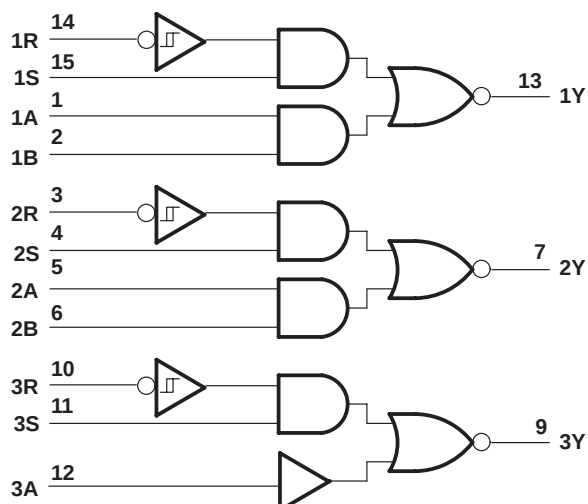
SLLS058B – SEPTEMBER 1973 – REVISED MAY 1995

logic symbol†

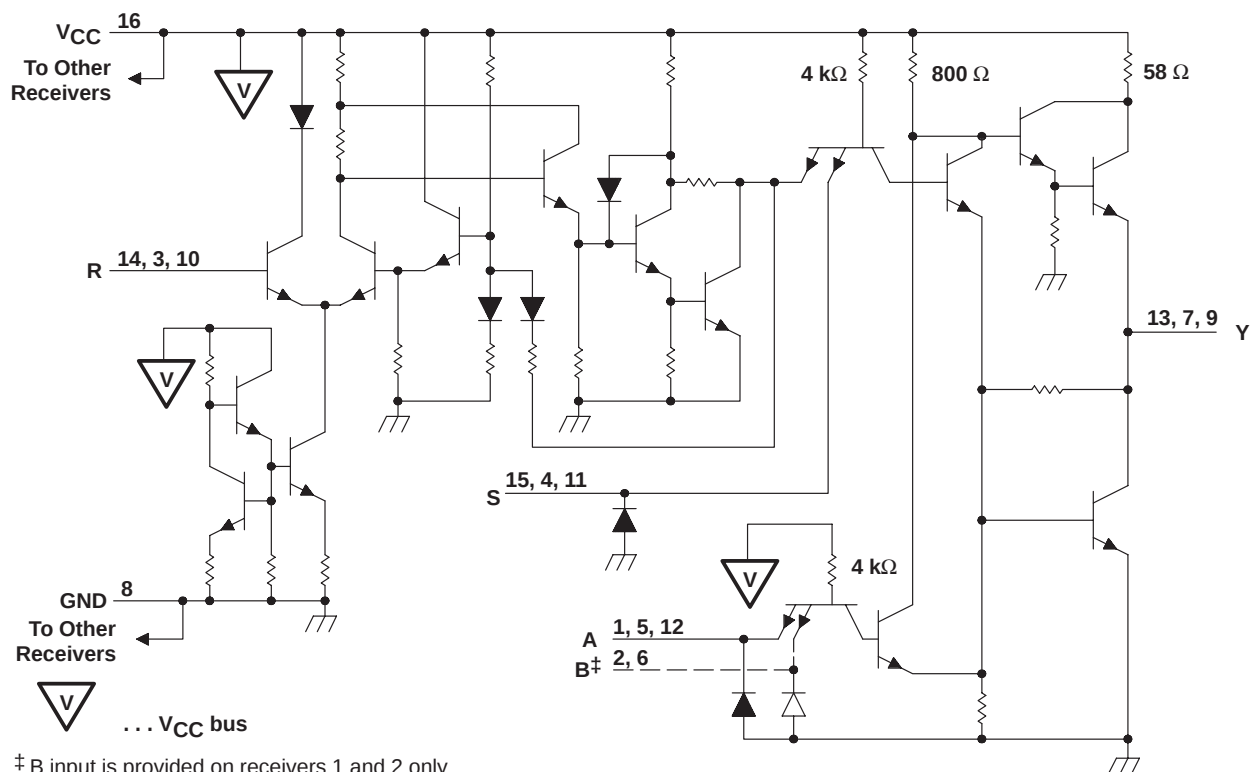


† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



schematic (each receiver)



‡ B input is provided on receivers 1 and 2 only.
Resistor values shown are nominal.

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage, V_I : R input with V_{CC} applied	7 V
R input with V_{CC} not applied	6 V
A, B, or S input	5.5 V
Output voltage, V_O	7 V
Output current, I_O	± 100 mA
Continuous total dissipation	See Dissipation Rating Table
Operating free-air temperature range, T_A	0°C to 70°C
Storage temperature range, T_{stg}	-65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds	260°C

NOTE 1: Voltage values are with respect to network ground terminal

PACKAGE	T _A ≤ 25°C POWER RATING	DERATING FACTOR ABOVE T _A = 25°C	T _A = 70°C POWER RATING
D	950 mW	7.6 mW/°C	608 mW
N	1150 mW	9.2 mW/°C	736 mW

		MIN	NOM	MAX	UNIT
Supply voltage, V_{CC}		4.75	5	5.25	V
High-level input voltage, V_{IH}	A, B, or S	2			V
	R	1.7			
Low-level input voltage, V_{IL}	A, B, or S	0.8			V
	R	0.7			
High-level output current, I_{OH}		−800			μA
Low-level output current, I_{OL}		16			mA
Operating free-air temperature, T_A		0	70		°C

SN75124
TRIPLE LINE RECEIVER

SLLS058B – SEPTEMBER 1973 – REVISED MAY 1995

electrical characteristics over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted)

PARAMETER			TEST CONDITIONS	MIN	TYP	MAX	UNIT
V _{hys}	Hysteresis voltage (V _{IT+} – V _{IT–})	R	V _{CC} = 5 V, T _A = 25°C	0.2	0.5		V
V _{IK}	Input clamp voltage	A, B, or S	V _{CC} = 5 V, I _I = 12 mA			–1.5	V
V _{I(BR)}	Input breakdown voltage	A, B, or S	V _{CC} = 5 V, I _I = 10 mA	5.5			V
V _{OH}	High-level output voltage		V _{IH} = V _{IHmin} , I _{OH} = –800 μA, V _{IL} = V _{ILmax} , See Note 2	2.6			V
V _{OL}	Low-level output voltage		V _{IH} = V _{IHmin} , I _{OL} = 16 mA, V _{IL} = V _{ILmax} , See Note 2			0.4	V
I _I	Input current at maximum input voltage	R	V _I = 7 V			5	mA
			V _I = 6 V, V _{CC} = 0			5	
I _{IH}	High-level input current	A, B, or S	V _I = 4.5 V			40	μA
		R	V _I = 3.11 V			170	
I _{IL}	Low-level input current	A, B, or S	V _I = 0.4 V, V _{IR} = 0.8 V	–0.1		–1.6	mA
I _{OS}	Short-circuit output current†			–50		–100	mA
I _{CC}	Supply current		All inputs = 0.8 V			72	mA
			All inputs = 2 V			100	

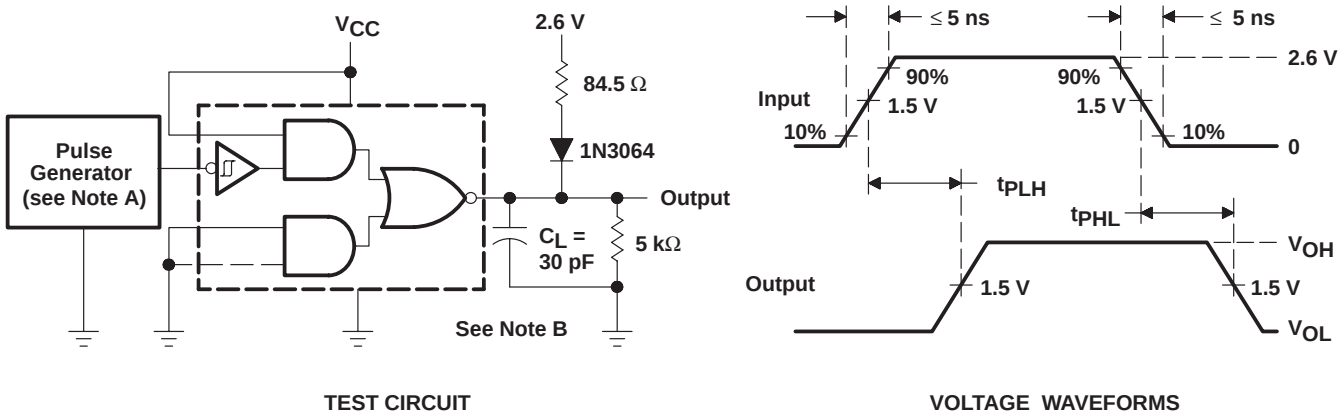
† Not more than one output should be shorted at a time, and duration of the short circuit should not exceed one second.

NOTE 2: The output voltage and current limits are characterized for any appropriate combination of high and low inputs specified by the function table for the desired output.

switching characteristics, V_{CC} = 5 V, T_A = 25°C

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
t _{PLH}	Propagation delay time, low-to-high-level output from R input	See Figure 1		20	30	ns
t _{PHL}	Propagation delay time, high-to-low-level output from R input			20	30	

PARAMETER MEASUREMENT INFORMATION



NOTES: A. The pulse generator has the following characteristics: Z_O ≈ 50 Ω, PRR ≤ 5 MHz, duty cycle = 50%.
B. C_L includes probe and jig capacitance.

Figure 1. Test Circuit and Voltage Waveforms

TYPICAL CHARACTERISTICS

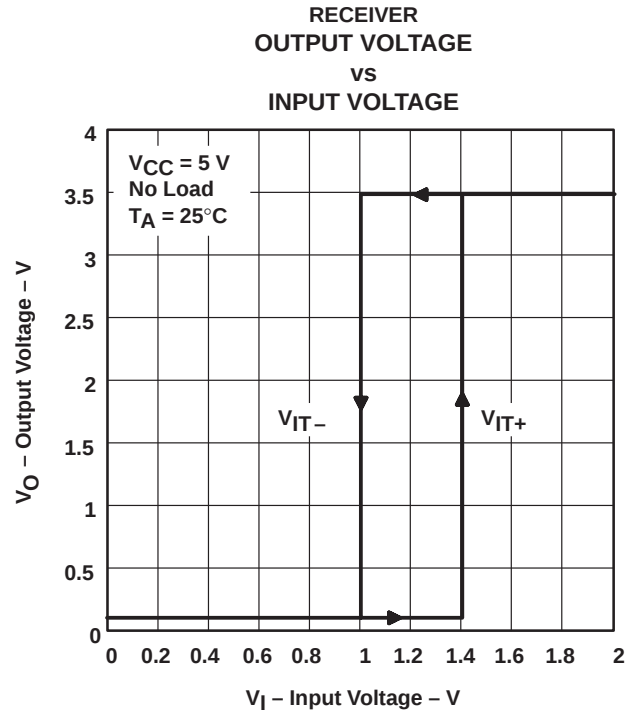


Figure 2

APPLICATION INFORMATION

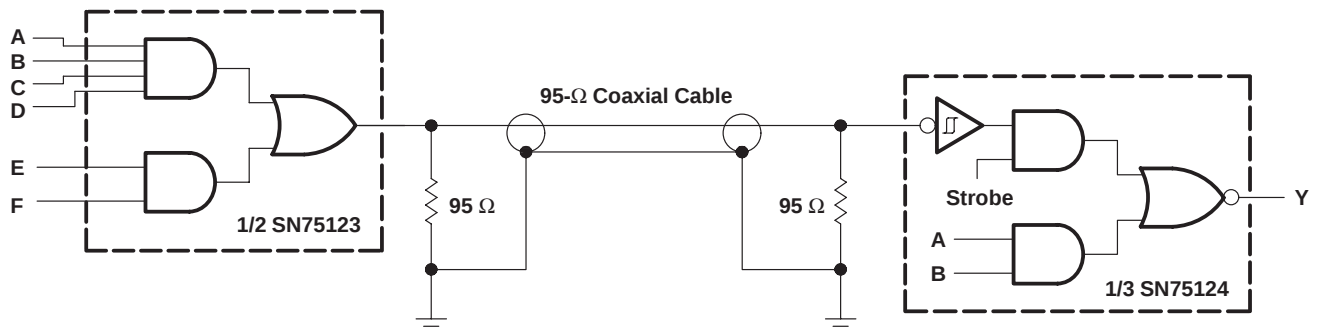


Figure 3. Unbalanced Line Communication Using SN75123 and SN75124

IMPORTANT NOTICE

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgement, including those pertaining to warranty, patent infringement, and limitation of liability.

TI warrants performance of its semiconductor products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF TI PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.



[>> Semiconductor Home](#) > [Products](#) > [Analog & Mixed-Signal](#) > [Interface Products](#) > [Transmitters and Receivers](#) >

SN75124, TRIPLE LINE RECEIVER

Device Status: Active

- > [Description](#)
- > [Features](#)
- > [Datasheets](#)
- > [Pricing/Samples/Availability](#)
- > [Application Notes](#)
- > [Related Documents](#)
- > [Development Tools](#)
- > [Applications](#)

Description

The SN75124 triple line receiver is specifically designed to meet the input/output interface specifications for IBM System 360. It is also compatible with standard TTL logic and supply voltage levels.

The SN75124 has receiver inputs with built-in hysteresis to provide increased noise margin for single-ended systems. An open line affects the receiver input as does a low-level input voltage, and the receiver input can withstand a level of -0.15 V with power on or off. The other inputs are in TTL configuration. The S input must be high to enable the receiver input. Two of the line receivers have A and B inputs that, if both are high, hold the output low. The third receiver has only an A input that, if high, holds the output low.

See the SN751730 for new IBM 360/370 interface designs.

The SN75124 is characterized for operation from 0°C to 70°C.

Features

- Meets or Exceeds the Requirements of IBMTM System 360 Input/Output Interface Specification
- Operates From Single 5-V Supply
- TTL Compatible
- Built-In Input Threshold Hysteresis
- High Speed . . . Typical Propagation Delay Time = 20 ns
- Independent Channel Strobes
- Input Gating Increases Application Flexibility

- Designed for Use With Dual Line Driver SN75123
- Designed to Be Interchangeable With Signetics N8T24

IBM is a trademark of International Business Machines Corp.

To view the following documents, [Acrobat Reader 3.x](#) is required.

To download a document to your hard drive, right-click on the link and choose 'Save'.

Datasheets

Full datasheet in Acrobat PDF: [slls058b.pdf](#) (106 KB)

Full datasheet in Zipped PostScript: [slls058b.psz](#) (94 KB)

Pricing/Samples/Availability

Orderable Device	Package	Pins	Temp (°C)	Status	Price/unit USD (100-999)	Pack Qty	Availability / Samples
SN75124D	D	16	0 TO 70	OBSOLETE			
SN75124N	N	16	0 TO 70	ACTIVE	2.00	25	Check stock or order
SN75124NS	NS	16	0 TO 70	ACTIVE			Check stock or order

Application Reports

- [422 AND 485 OVERVIEW AND SYSTEM CONFIGURATIONS](#) (SLLA070 - Updated: 02/15/2000)
- [ANALOG APPLICATIONS JOURNAL, FEBRUARY 2000](#) (SLYT012A - Updated: 03/23/2000)
- [ANALOG APPLICATIONS JOURNAL, NOVEMBER 1999](#) (SLYT010A - Updated: 03/23/2000)
- [COMPARING BUS SOLUTIONS](#) (SLLA067 - Updated: 03/06/2000)
- [ELECTROSTATIC DISCHARGE APPLICATION NOTE](#) (SSYA008 - Updated: 05/05/1999)
- [JITTER ANALYSIS](#) (SLLA075 - Updated: 03/31/2000)
- [SKEW DEFINITIONS](#) (SLLA060 - Updated: 08/13/1999)
- [THERMAL CHARACTERISTICS OF LINEAR AND LOGIC PACKAGES USING JEDEC PCB DESIGNS](#) (SZZA017A - Updated: 09/15/1999)

Related Documents

- [A STATISTICAL SURVEY OF COMMON-MODE NOISE](#) (SLLA057, 131 KB - Updated: 12/23/1999)

Table Data Updated on: 6/2/2000

[Search](#)
[Tech Support](#)
[Comments](#)
[Site Map](#)
[TI&ME](#)
[Home](#)

(c) Copyright 2000 Texas Instruments Incorporated. All rights reserved.

[Trademarks](#), [Important Notice!](#), [Privacy Policy](#)