

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceed the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

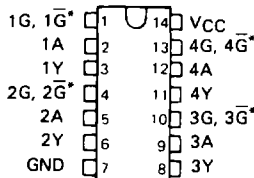
The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

SN54125, SN54126, SN54LS125A, SN54LS126A, SN74125, SN74126, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS

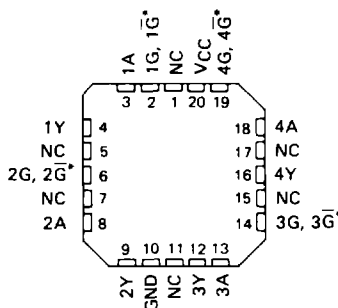
DECEMBER 1983 — REVISED MARCH 1988

- Quad Bus Buffers
- 3-State Outputs
- Separate Control for Each Channel

SN54125, SN54126, SN54LS125A,
SN54LS126A . . . J OR W PACKAGE
SN74125, SN74126 . . . N PACKAGE
SN74LS125A, SN74LS126A . . . D OR N PACKAGE
(TOP VIEW)



SN54LS125A, SN54LS126A . . . FK PACKAGE
(TOP VIEW)

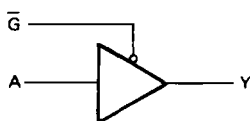


description

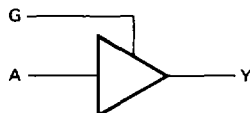
These bus buffers feature three-state outputs that, when enabled, have the low impedance characteristics of a TTL output with additional drive capability at high logic levels to permit driving heavily loaded bus lines without external pull-up resistors, when disabled, both output transistors are turned off presenting a high-impedance state to the bus so the output will act neither as a significant load nor as a driver. The '125 and 'LS125A outputs are disabled when \bar{G} is high. The '126 and 'LS126A outputs are disabled when G is low.

logic diagram (each gate)

'125, 'LS125A

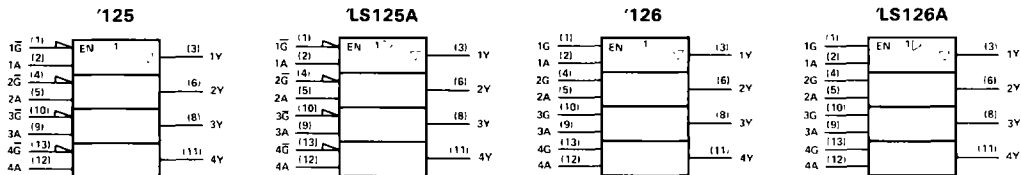


'126, 'LS126A



positive logic $Y = A$

logic symbols†



†These symbols are in accordance with ANSI/IEEE Std. 91-1984 and IEC Publication 617-12. Pin numbers shown are for D, J, N, and W packages.

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TTL Devices

PRODUCTION DATA documents contain information 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.

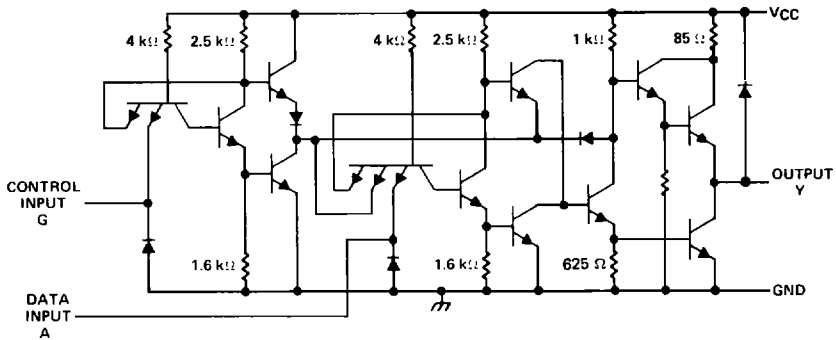
TEXAS
INSTRUMENTS

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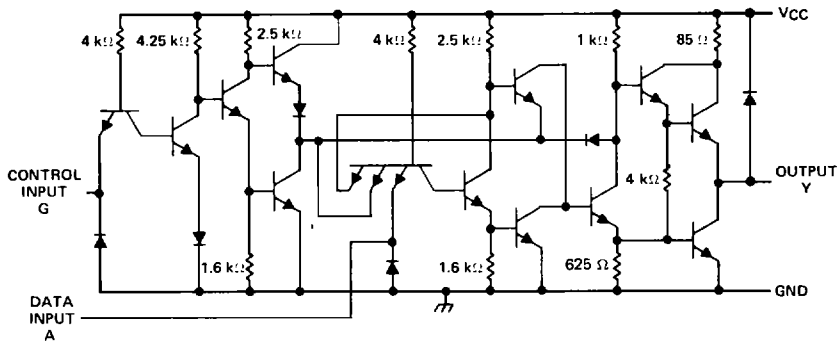
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SN54125, SN54126, SN74125, SN74126
QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS

schematics (each gate)



'125 CIRCUITS



'126 CIRCUITS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

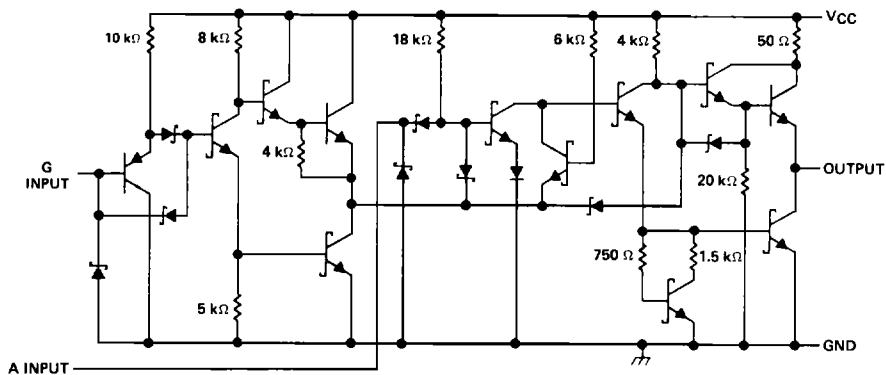
Supply voltage, V_{CC} (See Note 1)	7 V
Input voltage	5.5 V
Operating free-air temperature range: SN54'	-55°C to 125°C
SN74'	0°C to 70°C
Storage temperature range	-65°C to 150°C

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

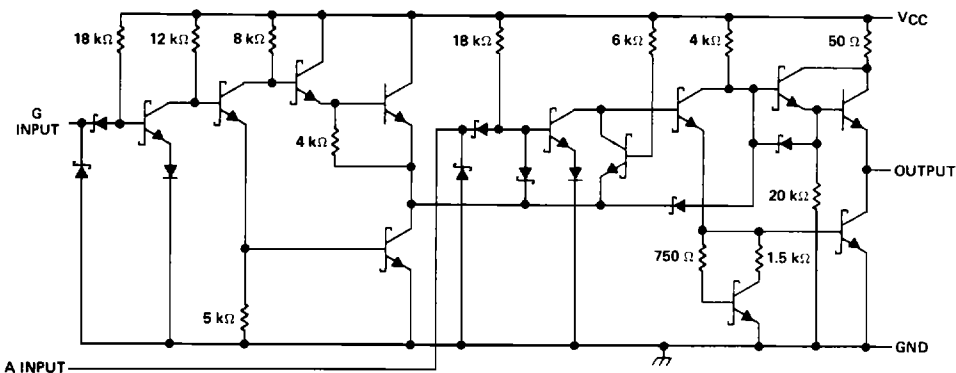
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TTL Devices

**SN54LS125A, SN54LS126A, SN74LS125A, SN74LS126A
QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS**

schematics (each gate)



'LS125A CIRCUITS



'LS126A CIRCUITS

Resistor values shown are nominal.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage	7 V
Operating free-air temperature range: SN54'	-55 °C to 125 °C
SN74'	0 °C to 70 °C
Storage temperature range	-65 °C to 150 °C

NOTE 1 Voltage values are with respect to network ground terminals

SN54125, SN54126, SN74125, SN74126

QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS

recommended operating conditions

	SN54125, SN54126			SN74125, SN74126			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V _{IH} High-level input voltage	2			2			V
V _{IL} Low-level input voltage	0.8			0.8			V
I _{OH} High-level output current	-2			-5.2			mA
I _{OL} Low-level output current	16			16			mA
T _A Operating free-air temperature	-55 125			0 70			°C

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS †			SN54125, SN54126			SN74125, SN74126			UNIT
				MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
V _{IK}	V _{CC} = MIN, I _I = -12 mA			-1.5			-1.5			V
V _{OH}	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = 0.8 V	I _{OH} = -2 mA		2.4	3.3					V
		I _{OH} = -5.2 mA					2.4	3.1		
V _{OL}	V _{CC} = MIN, V _{IH} = 2 V, I _{OL} = 16 mA	V _{IL} = 0.8 V		0.4			0.4			V
I _{OZ}	V _{CC} = MAX, V _{IH} = 2 V, V _{IL} = 0.8 V	V _O = 2.4 V		40			40			μA
		V _O = 0.4 V		-40			-40			
I _I	V _{CC} = MAX, V _I = 5.5 V			1			1			mA
I _{IH}	V _{CC} = MAX, V _I = 2.4 V			40			40			μA
I _{IL}	V _{CC} = MAX, V _I = 0.4 V			-1.6			-1.6			mA
I _{OS} §	V _{CC} = MAX			-30	-70		-28	-70		mA
I _{CC}	V _{CC} = MAX, (see Note 2)	125		32	54		32	54		mA
		126		36	62		36	62		

† 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.

NOTE 2: Data inputs = 0 V; output control = 4.5 V for '125 and 0 V for '126.

switching characteristics, V_{CC} = 5 V, T_A = 25°C (see note 3)

PARAMETER	TEST CONDITIONS		SN54/74125			SN54/74126			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
t _{PLH}	R _L = 400 Ω, C _L = 50 pF			8	13		8	13	ns
t _{PHL}				12	18		12	18	ns
t _{PZH}				11	17		11	18	ns
t _{PZL}				16	25		16	25	ns
t _{PHZ}	R _L = 400 Ω, C _L = 5 pF			5	8		10	16	ns
t _{PLZ}				7	12		12	18	ns

NOTE 3: Load circuits and voltage waveforms are shown in Section 1

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TTL Devices

SN54LS125A, SN54LS126A, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS

recommended operating conditions

	SN54LS125A SN54LS126A			SN74LS125A SN74LS126A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V _{IH} High-level input voltage	2			2			V
V _{IL} Low-level input voltage	0.7			0.8			V
I _{OH} High-level output current	-1			-2.6			mA
I _{OL} Low-level output current	12			24			mA
T _A Operating free-air temperature	-55			125			°C

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS†		SN54LS125A SN54LS126A		SN74LS125A SN74LS126A		UNIT	
			MIN	TYP‡	MAX	MIN		TYP‡
V _{IK}	V _{CC} = MIN.	I _I = -18 mA	-1.5		-1.5		V	
V _{OH}	V _{CC} = MIN. V _{IH} = 2 V	V _{IL} = 0.7 V I _{OH} = -1 mA	2.4		2.4		V	
V _{OL}	V _{CC} = MIN. V _{IH} = 2 V	V _{IL} = 0.7 V, I _{OL} = 12 mA	0.25		0.4		V	
		V _{IL} = 0.8 V, I _{OL} = 24 mA			0.35 0.5			
I _{OZ}	V _{CC} = MAX. V _{IH} = 2 V	V _{IL} = 0.7 V	V _O = 2.4 V	20				μA
			V _O = 0.4 V	-20				
		V _{IL} = 0.8 V	V _O = 2.4 V	20				
			V _O = 0.4 V	-20				
I _I	V _{CC} = MAX.	V _I = 7 V	0.1		0.1		mA	
I _{IH}	V _{CC} = MAX.	V _I = 2.7 V	20		20		μA	
I _{IL}	V _{CC} = MAX. V _I = 0.4 V	‡LS125A-G inputs		-0.2		-0.2		mA
		‡LS125A-A inputs, †LS126A All inputs		-0.4		-0.4		mA
I _{OS} §	V _{CC} = MAX.		-40	-225	-40	-225	mA	
I _{CC}	V _{CC} = MAX. (see Note 2)	‡LS125A		11	20	11	20	mA
		‡LS126A		12	22	12	22	

† 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 duration of the short circuit should not exceed one second

NOTE 2 Data inputs = 0 V, Output controls = 4.5 V for †LS125A and 0 V for †LS126A

switching characteristics, V_{CC} = 5 V, T_A = 25 °C (see note 3)

PARAMETER	TEST CONDITIONS		SN54/74LS125A		SN54/74LS126A		UNIT
			MIN	TYP	MAX	MIN	
t _{PLH}	R _L = 667 Ω,	C _L = 45 pF	9	15	9	15	ns
t _{PHL}			7	18	8	18	ns
t _{PZH}			12	20	16	25	ns
t _{PZL}			15	25	21	35	ns
t _{PHZ}			R _L = 667 Ω,	C _L = 5 pF	20		25
t _{PLZ}	20				25		ns

NOTE 3 Load circuits and voltage waveforms are shown in Section 1