
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.

SN74ALS29863, SN74ALS29864 9-BIT BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

D2915. JANUARY 1986—REVISED MAY 1986

- Functionally Equivalent to AM29863 and AM29864
- Choice of True or Inverting Logic
- Power-Up High-Impedance State
- Package Options Include Plastic "Small Outline" Packages, Plastic Chip Carriers, and Standard Plastic DIPs
- Dependable Texas Instruments Quality and Reliability

description

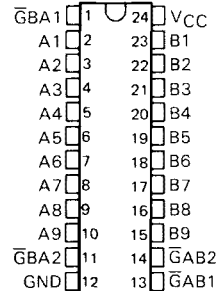
These 9-bit bus transceivers are designed for asynchronous two-way communication between data buses. The control function implementation allows for maximum flexibility in timing.

These devices allow data transmission from the A bus to the B bus or from the B bus to the A bus depending upon the logic levels at the enable inputs ($\overline{\text{GBA1}}$, $\overline{\text{GBA2}}$, $\overline{\text{GAB1}}$, and $\overline{\text{GAB2}}$).

The SN74' family is characterized for operation from 0°C to 70°C.

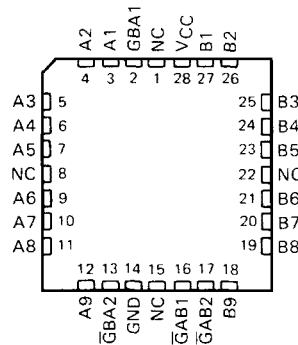
DW OR NT PACKAGE

(TOP VIEW)



FN PACKAGE

(TOP VIEW)



NC No internal connection

FUNCTION TABLE

ENABLE INPUTS				OPERATION	
$\overline{\text{GAB1}}$	$\overline{\text{GAB2}}$	$\overline{\text{GBA1}}$	$\overline{\text{GBA2}}$	'ALS29863	'ALS29864
L	L	L	L	Latch A and B	Latch A and B
L	L	H	X	A to B	A to $\overline{\text{B}}$
L	L	X	H	B to A	B to $\overline{\text{A}}$
H	X	L	L	Isolation	Isolation
X	H	L	L		
H	X	H	X		
X	H	X	H		
X	H	X	H	Isolation	Isolation
X	H	H	X		

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

POST OFFICE BOX 655012 • DALLAS, TEXAS 75265

Copyright © 1986, Texas Instruments Incorporated

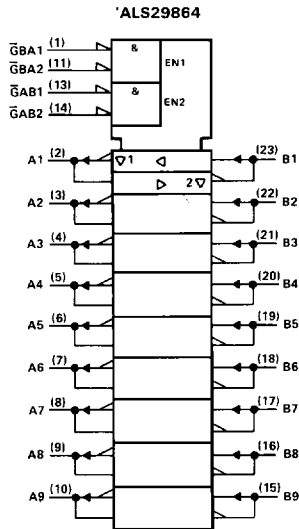
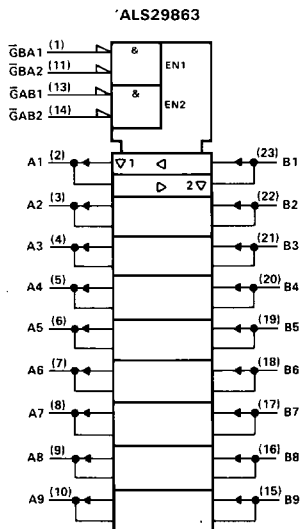
2-995

2

ALS and AS Circuits

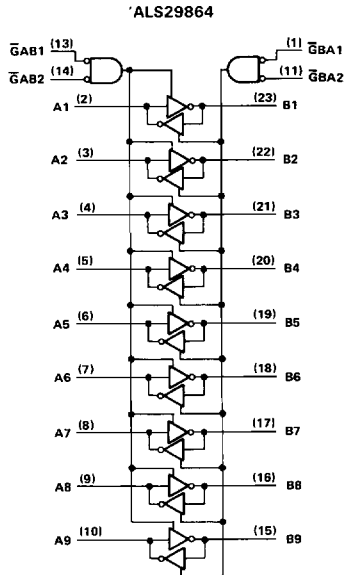
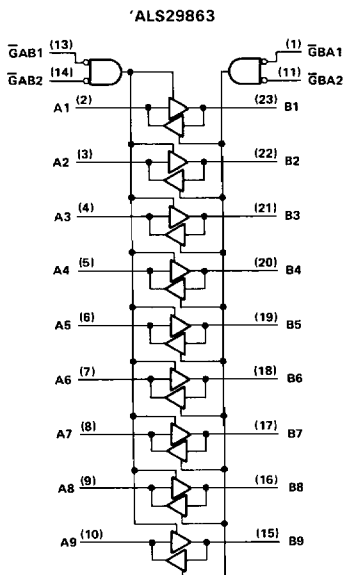
SN74ALS29863, SN74ALS29864 9-BIT BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

logic symbols†



†These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagrams



Pin numbers shown are for DW and NT packages.

SN74ALS29863, SN74ALS29864

9-BIT BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

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

Supply voltage, V_{CC}	7 V
Input voltage: All inputs and I/O ports	5.5 V
Operating free-air temperature range	0°C to 70°C
Storage temperature range	-65°C to 150°C

recommended operating conditions

	MIN	NOM	MAX	UNIT
V_{CC} Supply voltage	4.75	5	5.25	V
V_{IH} High-level input voltage	2			V
V_{IL} Low-level input voltage			0.8	V
I_{OH} High-level output current			-24	mA
I_{OL} Low-level output current			48	mA
T_A Operating free-air temperature	0		70	°C

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

PARAMETER	TEST CONDITIONS	MIN	TYP†	MAX	UNIT
V_{IK}	$V_{CC} = 4.75 \text{ V}$, $I_I = -18 \text{ mA}$			-1.2	V
V_{OH}	$V_{CC} = 4.75 \text{ V}$, $I_{OH} = -15 \text{ mA}$	2.4			V
	$V_{CC} = 4.75 \text{ V}$, $I_{OH} = -24 \text{ mA}$	2			
V_{OL}	$V_{CC} = 4.75 \text{ V}$, $I_{OL} = 48 \text{ mA}$	0.35	0.5		V
I_I	$V_{CC} = 5.25 \text{ V}$, $V_I = 5.5 \text{ V}$			0.1	mA
I_{IH} Control inputs A or B ports‡	$V_{CC} = 5.25 \text{ V}$, $V_I = 2.7 \text{ V}$			20	μA
				20	
I_{IL} Control inputs A or B ports‡	$V_{CC} = 5.25 \text{ V}$, $V_I = 0.4 \text{ V}$			-0.1	mA
				-0.1	
$I_{OS}^{\S}$	$V_{CC} = 5.25 \text{ V}$, $V_O = 0 \text{ V}$	-75		-250	mA
I_{CC} 'ALS29863 'ALS29864	$V_{CC} = 5.25 \text{ V}$		40	65	mA
			40	65	

† All typical values are at $V_{CC} = 5 \text{ V}$, $T_A = 25^\circ\text{C}$.

‡ For I/O ports, the parameters I_{IH} and I_{IL} include the off-state output current.

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

2

ALS and AS Circuits

SN74ALS29863, SN74ALS29864 **9-BIT BUS TRANSCEIVERS WITH 3-STATE OUTPUTS**

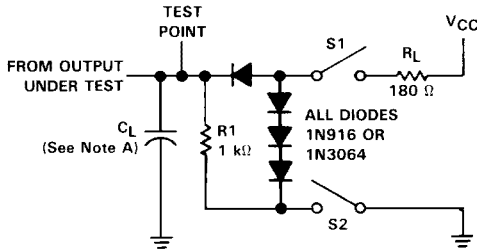
SN74ALS29863 switching characteristics

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS See Figure 1	V _{CC} = 5 V, T _A = 25°C			V _{CC} = 4.75 V to 5.25 V, T _A = 0°C to 70°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t _{PLH}	A or B	B or A	C _L = 300 pF		7.5	11		15	ns
t _{PHL}					11	16		18	
t _{PLH}			C _L = 50 pF		3.5	6		8	
t _{PHL}					6.5	8		10	
t _{PZH}	$\bar{G}$ AB or $\bar{G}$ BA	A or B	C _L = 300 pF		13	17		20	ns
t _{PZL}					16	21		23	
t _{PZH}			C _L = 50 pF		6.5	12		15	
t _{PZL}					9.5	12		15	
t _{PHZ}	$\bar{G}$ AB or $\bar{G}$ BA	A or B	C _L = 50 pF		10	16		17	ns
t _{PLZ}					4	9		12	
t _{PHZ}			C _L = 5 pF		4.5	8		9	
t _{PLZ}					4.5	8		9	

SN74ALS29864 switching characteristics

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS See Figure 1	V _{CC} = 5 V, T _A = 25°C			V _{CC} = 4.75 V to 5.25 V, T _A = 0°C to 70°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t _{PLH}	A or B	B or A	C _L = 300 pF		8	11		14	ns
t _{PHL}					10	12.9		14	
t _{PLH}			C _L = 50 pF		5	7		8	
t _{PHL}					3	5.9		7.5	
t _{PZH}	$\bar{G}$ AB or $\bar{G}$ BA	A or B	C _L = 300 pF		11	17		20	ns
t _{PZL}					19	23		24	
t _{PZH}			C _L = 50 pF		6.5	12		15	
t _{PZL}					9.5	12		15	
t _{PHZ}	$\bar{G}$ AB or $\bar{G}$ BA	A or B	C _L = 50 pF		10	16		17	ns
t _{PLZ}					4	9		12	
t _{PHZ}			C _L = 5 pF		6	8		9	
t _{PLZ}					3.5	8		9	

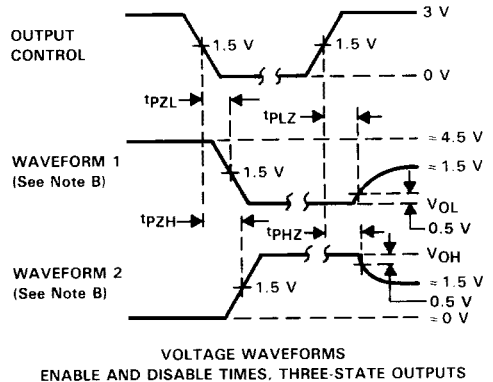
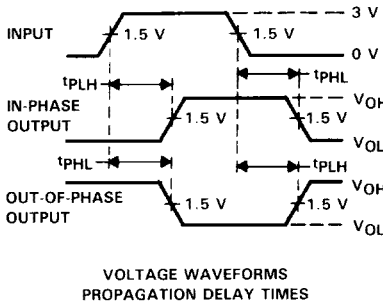
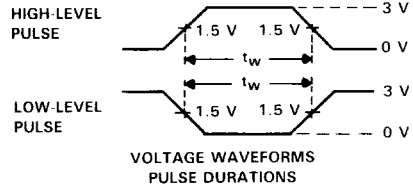
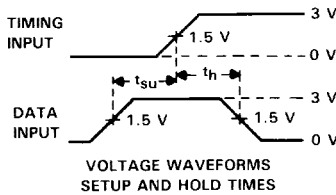
PARAMETER MEASUREMENT INFORMATION



SWITCH POSITION TABLE

TEST	S1	S2
tPLH	Closed	Closed
tPHL	Closed	Closed
tpZH	Open	Closed
tpZL	Closed	Open
tpHZ	Closed	Closed
tpLZ	Closed	Closed

LOAD CIRCUIT



- NOTES: A. C_L includes probe and jig capacitance.
 B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
 C. All input pulses are supplied by generators having the following characteristics: PRR ≤ 10 MHz, $Z_O = 50 \Omega$, $t_r \leq 2.5$ ns, $t_f \leq 2.5$ ns.

FIGURE 1

