SDAS096C - JANUARY 1986 - REVISED JANUARY 1995

- Functionally Equivalent to AMD's AM29863
- Power-Up High-Impedance State
- Package Options Include Plastic Small-Outline (DW) Packages and Standard Plastic (NT) 300-mil DIPs

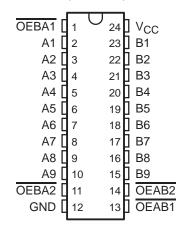
description

This 9-bit transceiver is designed asynchronous two-way communication between data buses. The control-function implementation allows for maximum flexibility in timing.

This device allows data transmission from the A bus to the B bus or from the B bus to the A bus, depending on the logic levels at the output-enable (OEAB1, OEAB2, OEBA1, and OEBA2) inputs.

The SN74ALS29863 is characterized for operation from 0°C to 70°C.

DW OR NT PACKAGE (TOP VIEW)



FUNCTION TABLE

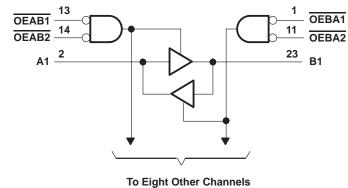
	INP	UTS		ODEDATION
OEAB1	OEAB2	OEBA1	OEBA2	OPERATION
L	L	L	L	Latch A and B
L	L	Н	Χ	A 40 D
L	L	Χ	Н	A to B
Н	Χ	L	L	D. I. A
Х	Н	L	L	B to A
Н	Χ	Н	Χ	
Н	Χ	Χ	Н	Isolation
Х	Н	Χ	Н	1501411011
Х	Н	Н	Χ	

logic symbol†

IEC Publication 617-12.

& OEBA1 EN1 11 OEBA2 13 OEAB1 EN2 14 OEAB2 23 В1 **▽ 1** ◁ 2 ▽ 3 22 B2 Α2 4 21 А3 В3 5 20 **B**4 Α4 19 Α5 **B5** 7 18 **B6** A6 17 Α7 **B7** 16 **A8 B8** 15 10 В9 A9

logic diagram (positive logic)



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and

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

Supply voltage, V _{CC}		7 V
Input voltage, V _I (all inputs and I/O ports)		5.5 V
Operating free-air temperature range, TA		0°C to 70°C
Storage temperature range	65	5°C to 150°C

[‡] Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

recommended operating conditions

		MIN	NOM	MAX	UNIT
Vcc	Supply voltage	4.75	5	5.25	V
VIH	High-level input voltage	2			V
V _{IL}	Low-level input voltage			8.0	V
lOH	High-level output current			-24	mA
loL	Low-level output current			48	mA
TA	Operating free-air temperature	0		70	°C

SDAS096C - JANUARY 1986 - REVISED JANUARY 1995

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

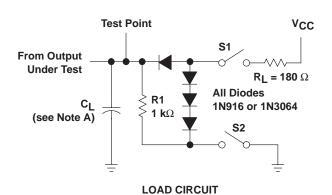
PARAMETER		TEST CO	TEST CONDITIONS				UNIT
٧ıĸ		$V_{CC} = 4.75 V$,	$I_{I} = -18 \text{ mA}$			-1.2	V
.,		V 475 V	$I_{OH} = -15 \text{ mA}$	2.4			.,
VOH		$V_{CC} = 4.75 \text{ V}$	$I_{OH} = -24 \text{ mA}$	2			V
VOL		$V_{CC} = 4.75 V$,	$I_{OL} = 48 \text{ mA}$		0.35	0.5	V
II		$V_{CC} = 5.25 V$,	V _I = 5.5 V			0.1	mA
	Control inputs	V 5.05.V				20	
lН	A or B ports‡	$V_{CC} = 5.25 \text{ V},$	V _I = 2.7 V			20	μΑ
	Control inputs		V 0.43V			-0.1	
ΊL	A or B ports‡	$V_{CC} = 5.25 \text{ V},$	V _I = 0.4 V			-0.1	mA
IOS§		$V_{CC} = 5.25 \text{ V},$	V _O = 0	-75		-250	mA
ICC		$V_{CC} = 5.25 \text{ V}$			40	65	mA

switching characteristics (see Figure 1)

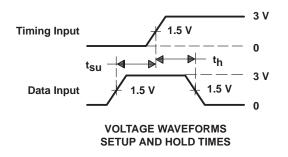
DARAMETER	FROM	то	TEGT COMPITIONS	V _{CC} = 4.75 \	UNIT		
PARAMETER	(INPUT)	(OUTPUT)	TEST CONDITIONS	MIN	MAX	UNIT	
t _{PLH}	A - : : D				15		
t _{PHL}	A or B	B or A	C _L = 300 pF		15	ns	
t _{PLH}	A D	D A			8		
t _{PHL}	A or B	B or A	$C_L = 50 pF$		8	ns	
^t PZH	OFAD - OFDA	A - :: D	0 000 = 5		20	ns	
tpZL	OEAB or OEBA	A or B	C _L = 300 pF		23		
^t PZH	<u> </u>	. 5	0 50 5		15	ns	
t _{PZL}	OEAB or OEBA	A or B	$C_L = 50 pF$		15		
^t PHZ	OEAB or OEBA	A - : : D	0 50 - 5		17		
tpLZ	OEAB or OEBA	A or B	$C_L = 50 pF$		12	ns	
^t PHZ	OEAB or OEBA	A on D	C: -5 pF		9	20	
t _{PLZ}	OEAB or OEBA A or B C _L = 5 pF		CL = 5 pr		9	ns	

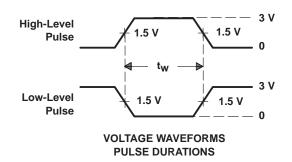
[†] All typical values are at V_{CC} = 5 V, T_A = 25°C. ‡ For I/O ports, the parameters I_{IH} and I_{IL} include the off-state output current. § Not more than one output should be shorted at a time and duration of the short circuit should not exceed one second.

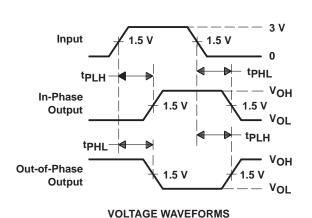
PARAMETER MEASUREMENT INFORMATION



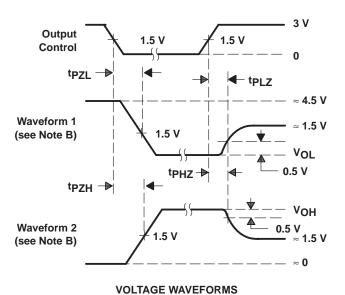
SWITCH POSITION TABLE								
TEST	S1	S2						
tPLH tPHL tPZH tPZL tPHZ tPHZ	Closed Closed Open Closed Closed Closed	Closed Closed Closed Open Closed Closed						







PROPAGATION DELAY TIMES



ENABLE AND DISABLE TIMES, 3-STATE OUTPUTS

- 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 \leq 10 MHz, $Z_O = 50~\Omega$, $t_f \leq 2.5$ ns.

Figure 1. Load Circuit and Voltage Waveforms



11-Nov-2025 www.ti.com

PACKAGING INFORMATION

Orderable part number	Status	Material type	Package Pins	Package qty Carrier	RoHS	Lead finish/ Ball material	MSL rating/ Peak reflow	Op temp (°C)	Part marking (6)
						(4)	(5)		
SN74ALS29863DW	Active	Production	SOIC (DW) 24	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS29863
SN74ALS29863DW.A	Active	Production	SOIC (DW) 24	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	0 to 70	ALS29863

⁽¹⁾ Status: For more details on status, see our product life cycle.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

Important Information and Disclaimer: The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

⁽²⁾ Material type: When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

⁽³⁾ RoHS values: Yes, No. RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

⁽⁴⁾ Lead finish/Ball material: Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

⁽⁵⁾ MSL rating/Peak reflow: The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

⁽⁶⁾ Part marking: There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

PACKAGE MATERIALS INFORMATION

www.ti.com 23-May-2025

TUBE

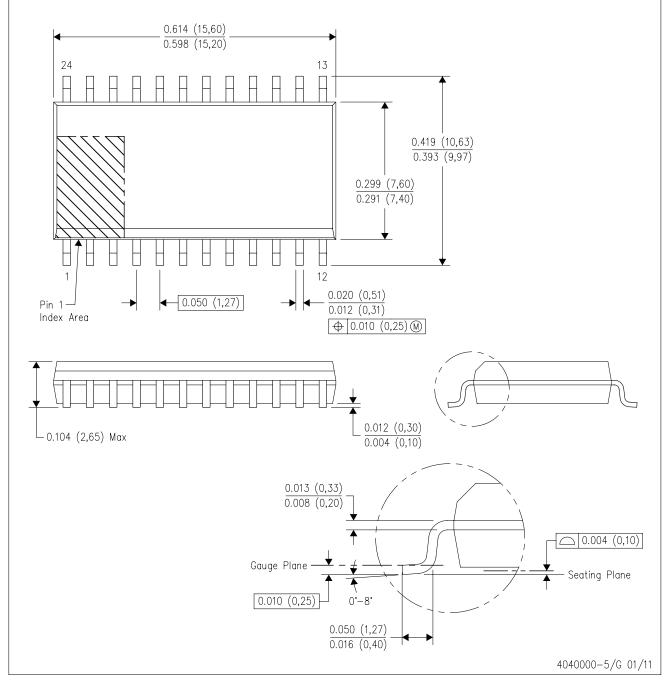


*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (µm)	B (mm)
SN74ALS29863DW	DW	SOIC	24	25	506.98	12.7	4826	6.6
SN74ALS29863DW.A	DW	SOIC	24	25	506.98	12.7	4826	6.6

DW (R-PDSO-G24)

PLASTIC SMALL OUTLINE



NOTES: A. All linear dimensions are in inches (millimeters). Dimensioning and tolerancing per ASME Y14.5M-1994.

- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
- D. Falls within JEDEC MS-013 variation AD.



IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you fully indemnify TI and its representatives against any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale, TI's General Quality Guidelines, or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products. Unless TI explicitly designates a product as custom or customer-specified, TI products are standard, catalog, general purpose devices.

TI objects to and rejects any additional or different terms you may propose.

Copyright © 2025, Texas Instruments Incorporated

Last updated 10/2025