

# SN54AS1032A, SN74AS1032A QUADRUPLE 2-INPUT POSITIVE-OR BUFFERS/DRIVERS

SDAS072B – DECEMBER 1982 – REVISED JANUARY 1995

- Driver Version of 'AS32
- High Capacitive-Drive Capability
- Package Options Include Plastic Small-Outline (D) Packages, Ceramic Chip Carriers (FK), and Standard Plastic (N) and Ceramic (J) 300-mil DIPs

## description

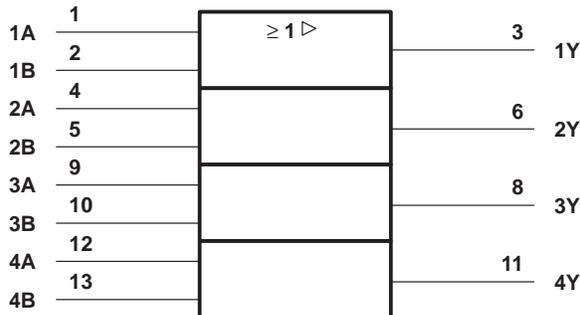
These devices contain four independent 2-input positive-OR buffers/drivers. They perform the Boolean functions  $Y = A + B$  or  $Y = \overline{A} \cdot \overline{B}$  in positive logic.

The SN54AS1032A is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74AS1032A is characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

FUNCTION TABLE  
(each gate)

INPUTS		OUTPUT
A	B	Y
H	X	H
X	H	H
L	L	L

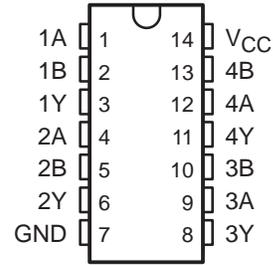
## logic symbol†



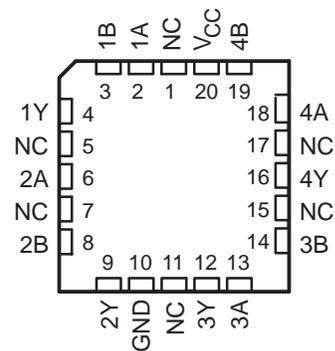
† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

Pin numbers shown are for the D, J, and N packages.

SN54AS1032A . . . J PACKAGE  
SN74AS1032A . . . D OR N PACKAGE  
(TOP VIEW)

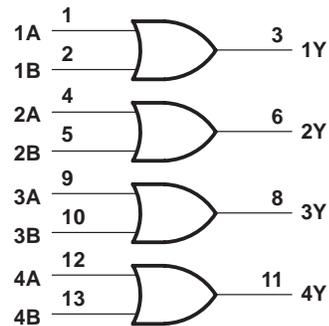


SN54AS1032A . . . FK PACKAGE  
(TOP VIEW)



NC – No internal connection

## logic diagram (positive logic)



# SN54AS1032A, SN74AS1032A QUADRUPLE 2-INPUT POSITIVE-OR BUFFERS/DRIVERS

SDAS072B – DECEMBER 1982 – REVISED JANUARY 1995

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

Supply voltage, $V_{CC}$	7 V
Input voltage, $V_I$	7 V
Operating free-air temperature range, $T_A$ : SN54AS1032A	-55°C to 125°C
SN74AS1032A	0°C to 70°C
Storage temperature range	-65°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‡

	SN54AS1032A			SN74AS1032A			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
$V_{CC}$ Supply voltage	4.5	5	5.5	4.5	5	5.5	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			-40			-48	mA
$I_{OL}$ Low-level output current			40			48	mA
$T_A$ Operating free-air temperature	-55		125	0		70	°C

‡ These high sink- or source-current devices are not recommended for use above 40 MHz.

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

PARAMETER	TEST CONDITIONS	SN54AS1032A		SN74AS1032A		UNIT		
		MIN	TYP§	MAX	MIN		TYP§	MAX
$V_{IK}$	$V_{CC} = 4.5 V$ , $I_I = -18 mA$			-1.2		-1.2	V	
$V_{OH}$	$V_{CC} = 4.5 V$ to $5.5 V$ , $I_{OH} = -2 mA$	$V_{CC} - 2$			$V_{CC} - 2$		V	
	$V_{CC} = 4.5 V$ , $I_{OH} = -3 mA$	2.4	3.2		2.4	3.2		
	$V_{CC} = 4.5 V$ , $I_{OH} = -40 mA$	2						
$V_{OL}$	$V_{CC} = 4.5 V$ , $I_{OH} = -48 mA$				2		V	
	$V_{CC} = 4.5 V$ , $I_{OL} = 40 mA$		0.25	0.5				
	$V_{CC} = 4.5 V$ , $I_{OL} = 48 mA$				0.35	0.5		
$I_I$	$V_{CC} = 5.5 V$ , $V_I = 7 V$			0.1		0.1	mA	
$I_{IH}$	$V_{CC} = 5.5 V$ , $V_I = 2.7 V$			20		20	μA	
$I_{IL}$	$V_{CC} = 5.5 V$ , $V_I = 0.4 V$			-0.5		-0.5	mA	
$I_{O}^{\parallel}$	$V_{CC} = 5.5 V$ , $V_O = 2.25 V$	-50		-200	-50	-200	mA	
$I_{CCH}$	$V_{CC} = 5.5 V$ , $V_I = 4.5 V$		7.7	11.5		7.7	11.5	mA
$I_{CCL}$	$V_{CC} = 5.5 V$ , $V_I = 0$		14.7	24		14.7	24	mA

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

¶ The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current,  $I_{OS}$ .



# SN54AS1032A, SN74AS1032A QUADRUPLE 2-INPUT POSITIVE-OR BUFFERS/DRIVERS

SDAS072B – DECEMBER 1982 – REVISED JANUARY 1995

## switching characteristics (see Figure 1)

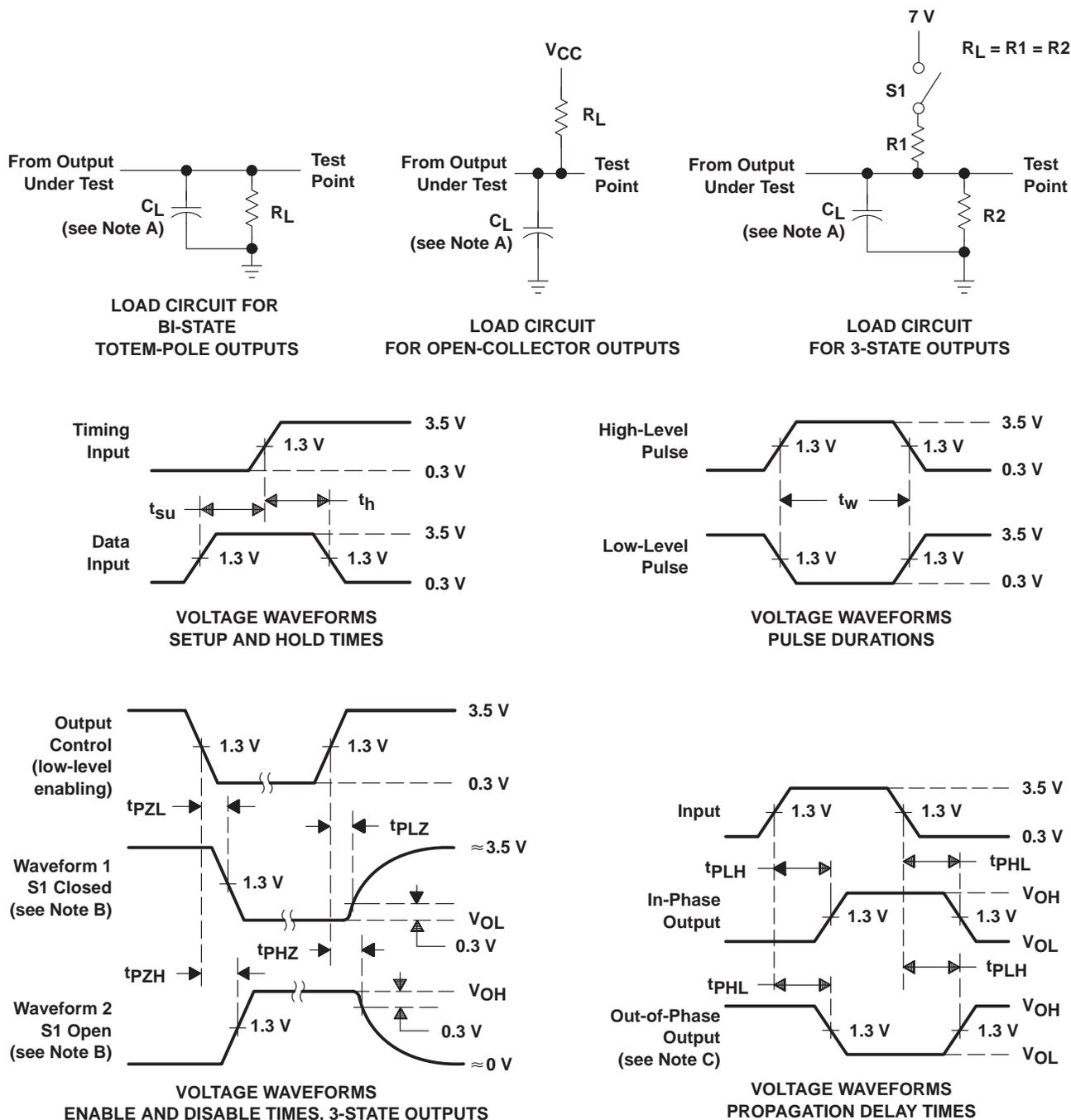
PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V},$ $C_L = 50 \text{ pF},$ $R_L = 500 \Omega,$ $T_A = \text{MIN to MAX}^\dagger$				UNIT
			SN54AS1032A		SN74AS1032A		
			MIN	MAX	MIN	MAX	
$t_{PLH}$	A or B	Y	1	7	1	6.3	ns
$t_{PHL}$			1	7	1	6.3	

<sup>†</sup> For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

# SN54AS1032A, SN74AS1032A QUADRUPLE 2-INPUT POSITIVE-OR BUFFERS/DRIVERS

SDAS072B – DECEMBER 1982 – REVISED JANUARY 1995

## PARAMETER MEASUREMENT INFORMATION SERIES 54ALS/74ALS AND 54AS/74AS DEVICES



- 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. When measuring propagation delay items of 3-state outputs, switch S1 is open.  
 D. All input pulses have the following characteristics:  $PRR \leq 1$  MHz,  $t_r = t_f = 2$  ns, duty cycle = 50%.  
 E. The outputs are measured one at a time with one transition per measurement.

Figure 1. Load Circuits and Voltage Waveforms

## 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.

[Advanced Search](#)
[TI Home](#)
[TI&ME](#)
[Employment](#)
[Tech Support](#)
[Comments](#)
[Site Map](#)
[TI Global](#)
[>> Semiconductor Home](#) > [Products](#) > [Digital Logic](#) > [Gates and Inverters](#) > [NOR Gates](#) >

## SN54AS1032A, Quadruple 2-Input Positive-OR Buffers/Drivers

Device Status: Active

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

Parameter Name	SN54AS1032A
Voltage Nodes (V)	5
Output Level	TTL

## Description

These devices contain four independent 2-input positive-OR buffers/drivers. They perform the Boolean functions  $Y = A + B$  or  in positive logic.

The SN54AS1032A is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74AS1032A is characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

## Features

- Driver Version of 'AS32
- High Capacitive-Drive Capability
- Package Options Include Plastic Small-Outline (D) Packages, Ceramic Chip Carriers (FK), and Standard Plastic (N) and Ceramic (J) 300-mil DIPs

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: [sdas072b.pdf](#) (79 KB)

Full datasheet in Zipped PostScript: [sdas072b.psz](#) (74 KB)

## Pricing/Samples/Availability

<u>Orderable Device</u>	<u>Package</u>	<u>Pins</u>	<u>Temp (°C)</u>	<u>Status</u>	<u>Price/unit USD (100-999)</u>	<u>Pack Qty</u>	<u>DSCC Number</u>	<u>Availability / Samples</u>
5962-88730012A	<u>FK</u>	20	-55 TO 125	OBSOLETE				
5962-8873001CA	<u>J</u>	14	-55 TO 125	ACTIVE	5.51	1		<a href="#">Check stock or order</a>
5962-8873001DA	<u>W</u>	14	-55 TO 125	OBSOLETE				
SN54AS1032AJ	<u>J</u>	14	-55 TO 125	OBSOLETE				
SNJ54AS1032AFK	<u>FK</u>	20	-55 TO 125	OBSOLETE				
SNJ54AS1032AJ	<u>J</u>	14	-55 TO 125	ACTIVE	5.51	1		<a href="#">Check stock or order</a>

## Application Reports

View Application Reports for [Digital Logic](#)

- [Advanced Schottky \(ALS and AS\) Logic Families \(SDAA010 - Updated: 08/01/1995\)](#)
- [Advanced Schottky Load Management \(SDYA016 - Updated: 02/01/1997\)](#)
- [Designing With Logic \(SDYA009C - Updated: 06/01/1997\)](#)
- [Input And Output Characteristics Of Digital Integrated Circuits \(SDYA010 - Updated: 10/01/1996\)](#)
- [Live Insertion \(SDYA012 - Updated: 10/01/1996\)](#)

## Related Documents

- [Documentation Rules \(SAP\) And Ordering Information \(SZZU001B, 4 KB - Updated: 05/06/1999\)](#)
- [Logic Selection Guide Second Half 2000 \(SDYU001N, 5035 KB - Updated: 04/17/2000\)](#)
- [MicroStar Junior BGA Design Summary \(SCET004, 284 KB - Updated: 07/28/2000\)](#)
- [More Power In Less Space - Technical Article \(SCAU001A, 850 KB - Updated: 03/01/1996\)](#)

**Table Data Updated on: 9/1/2000**