

**SN5432, SN54LS32, SN54S32,  
SN7432, SN74LS32, SN74S32**  
**QUADRUPLE 2-INPUT POSITIVE-OR GATES**

DECEMBER 1983 - REVISED MARCH 1988

- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers and Flat Packages, and Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

SN5432, SN54LS32, SN54S32 . . . J OR W PACKAGE  
SN7432 . . . N PACKAGE  
SN74LS32, SN74S32 . . . D OR N PACKAGE

**description**

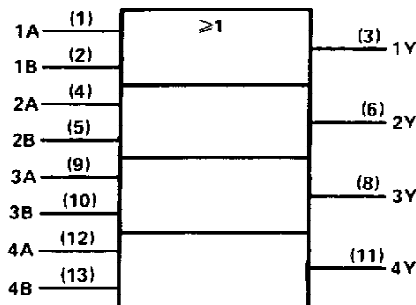
These devices contain four independent 2-input OR gates.

The SN5432, SN54LS32 and SN54S32 are characterized for operation over the full military range of -55°C to 125°C. The SN7432, SN74LS32 and SN74S32 are characterized for operation from 0°C to 70°C.

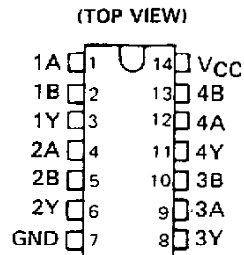
**FUNCTION TABLE (each gate)**

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

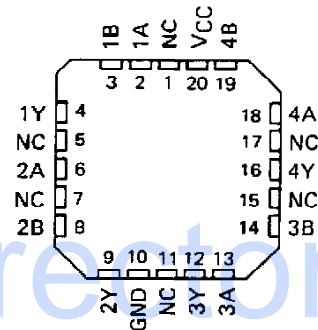
**logic symbol†**



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

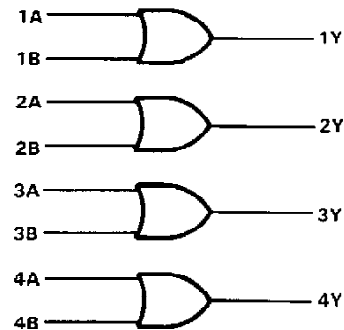


SN54LS32, SN54S32 . . . FK PACKAGE  
(TOP VIEW)



NC - No internal connection

**logic diagram**



**positive logic**

$$Y = A + B \text{ or } Y = \overline{\overline{A} \cdot \overline{B}}$$

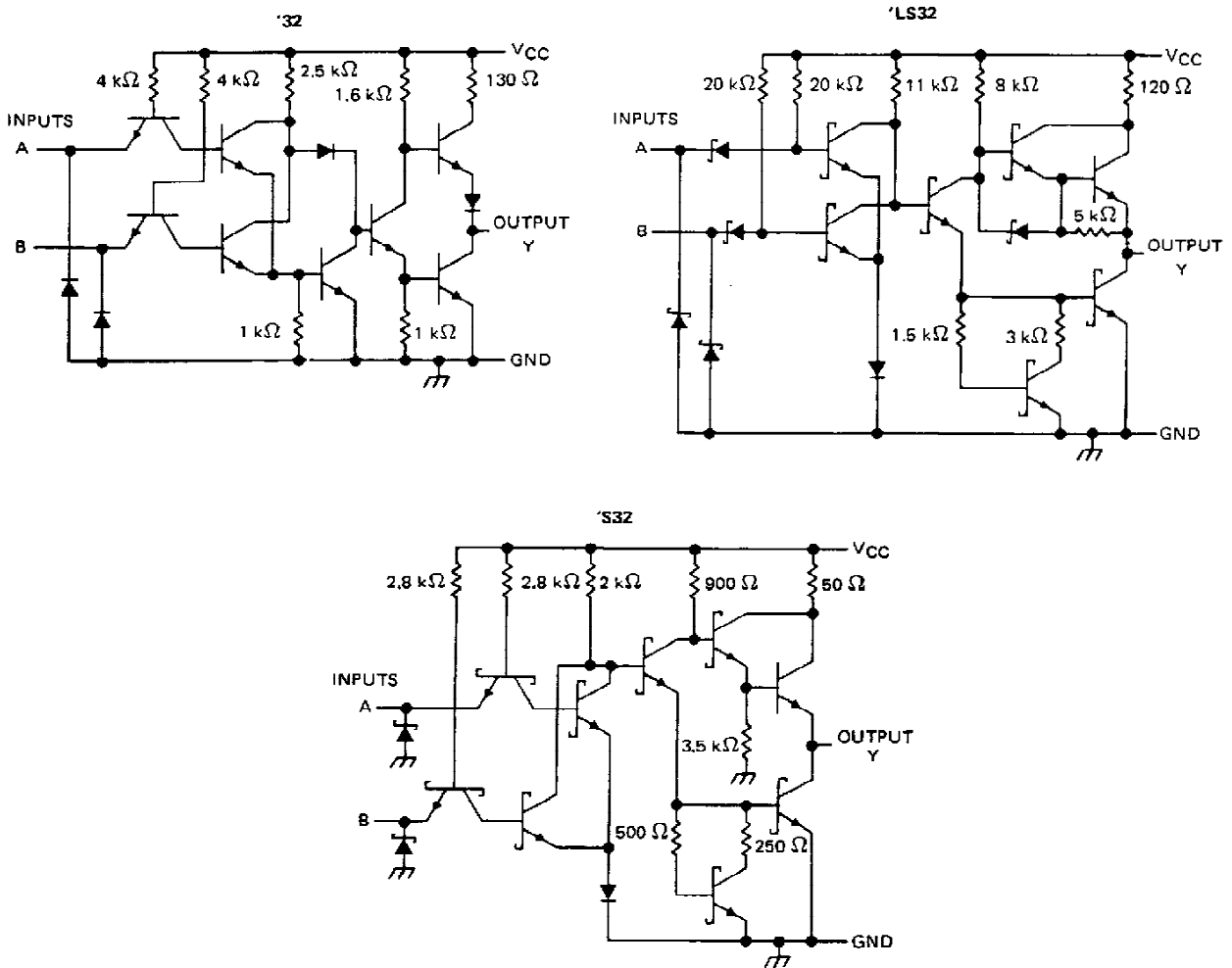
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**SN5432, SN54LS32, SN54S32,  
SN7432, SN74LS32, SN74S32  
QUADRUPLE 2-INPUT POSITIVE-OR GATES**

schematics (each gate)



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: '32, 'S32 .....	5.5 V
'LS32 .....	7 V
Operating free-air temperature: 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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# SN5432, SN7432 QUADRUPLE 2-INPUT POSITIVE-OR GATES

## recommended operating conditions

	SN5432			SN7432			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub> Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V <sub>IH</sub> High-level input voltage	2			2			V
V <sub>IL</sub> Low-level input voltage			0.8			0.8	V
I <sub>OH</sub> High-level output current			-0.8			-0.8	mA
I <sub>OL</sub> Low-level output current			16			16	mA
T <sub>A</sub> Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN5432			SN7432			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = MIN, I <sub>I</sub> = -12 mA			-1.5			-1.5	V
V <sub>OH</sub>	V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, I <sub>OH</sub> = -0.8 mA	2.4	3.4		2.4	3.4		V
V <sub>OL</sub>	V <sub>CC</sub> = MIN, V <sub>IL</sub> = 0.8 V, I <sub>OL</sub> = 16 mA		0.2	0.4		0.2	0.4	V
I <sub>I</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 5.5 V			1			1	mA
I <sub>IH</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.4 V			40			40	μA
I <sub>IL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.4 V			1.6			-1.6	mA
I <sub>OS</sub> §	V <sub>CC</sub> = MAX	-20		-55	-18		-55	mA
I <sub>CCH</sub>	V <sub>CC</sub> = MAX, See Note 2		15	22		15	22	mA
I <sub>CCL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0 V		23	38		23	38	mA

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

‡ All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C.

§ Not more than one output should be shorted at a time.

NOTE 2: One input at 4.5 V, all others at GND.

## switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t <sub>PLH</sub>	A or B	Y	R <sub>L</sub> = 400 Ω, C <sub>L</sub> = 15 pF		10	15	ns
t <sub>PHL</sub>					14	22	ns

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

# SN54LS32, SN74LS32

## QUADRUPLE 2-INPUT POSITIVE-OR GATES

### recommended operating conditions

	SN54LS32			SN74LS32			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub> Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V <sub>IH</sub> High-level input voltage	2			2			V
V <sub>IL</sub> Low-level input voltage			0.7			0.8	V
I <sub>OH</sub> High-level output current			-0.4			-0.4	mA
I <sub>OL</sub> Low-level output current			4			8	mA
T <sub>A</sub> Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN54LS32			SN74LS32			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = MIN, I <sub>I</sub> = -18 mA			-1.5			-1.5	V
V <sub>OH</sub>	V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, I <sub>OH</sub> = -0.4 mA	2.5	3.4		2.7	3.4		V
V <sub>OL</sub>	V <sub>CC</sub> = MIN, V <sub>IL</sub> = MAX, I <sub>OL</sub> = 4 mA		0.25	0.4		0.25	0.4	V
	V <sub>CC</sub> = MIN, V <sub>IL</sub> = MAX, I <sub>OL</sub> = 8 mA					0.35	0.5	
I <sub>I</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 7 V			0.1			0.1	mA
I <sub>IH</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.7 V			20			20	µA
I <sub>IL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.4 V			-0.4			-0.4	mA
I <sub>OS</sub> §	V <sub>CC</sub> = MAX	-20		-100	-20		-100	mA
I <sub>CCH</sub>	V <sub>CC</sub> = MAX, See Note 2		3.1	6.2		3.1	6.2	mA
I <sub>CCL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0 V		4.9	9.8		4.9	9.8	mA

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

‡ All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C.

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

NOTE 2: One input at 4.5 V, all others at GND.

### switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t <sub>PLH</sub>	A or B	Y	R <sub>L</sub> = 2 kΩ, C <sub>L</sub> = 15 pF		14	22	ns
t <sub>PHL</sub>					14	22	ns

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

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# SN54S32, SN74S32 QUADRUPLE 2-INPUT POSITIVE-OR GATES

## recommended operating conditions

	SN54S32			SN74S32			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub> Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V <sub>IH</sub> High-level input voltage	2			2			V
V <sub>IL</sub> Low-level input voltage			0.8			0.8	V
I <sub>OH</sub> High-level output current			-1			-1	mA
I <sub>OL</sub> Low-level output current			20			20	mA
T <sub>A</sub> Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS †	SN54S32			SN74S32			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = MIN, I <sub>I</sub> = -18 mA			-1.2			-1.2	V
V <sub>OH</sub>	V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, I <sub>OH</sub> = -1 mA	2.5	3.4		2.7	3.4		V
V <sub>OL</sub>	V <sub>CC</sub> = MIN, V <sub>IL</sub> = 0.8 V, I <sub>OL</sub> = 20 mA			0.5			0.5	V
I <sub>I</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 5.5 V			1			1	mA
I <sub>IH</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.7 V			50			50	μA
I <sub>IL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.5 V			-2			-2	mA
I <sub>OS</sub> §	V <sub>CC</sub> = MAX	-40		-100	-40		-100	mA
I <sub>CCH</sub>	V <sub>CC</sub> = MAX, See Note 2		18	32		18	32	mA
I <sub>CCL</sub>	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0 V		38	68		38	68	mA

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

‡ All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C.

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

NOTE 2: One input at 4.5 V, all others at GND.

## switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C (see note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t <sub>PLH</sub>	A or B	Y	R <sub>L</sub> = 280 Ω, C <sub>L</sub> = 15 pF		4	7	ns
t <sub>PHL</sub>					4	7	ns
t <sub>PLH</sub>	A or B	Y	R <sub>L</sub> = 280 Ω, C <sub>L</sub> = 50 pF		5		ns
t <sub>PHL</sub>					5		ns

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

  
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**PACKAGING INFORMATION**

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
5962-9557401QCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
5962-9557401QDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
5962-9557401QDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501B2A	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501B2A	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501SCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501SCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501SDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
JM38510/30501SDA	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SN5432J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN5432J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN54LS32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN54LS32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN54S32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN54S32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SN7432N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN7432N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN7432N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7432N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN7432NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN7432NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74LS32D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DBR	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DBR	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DBRE4	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DBRE4	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DG4	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DG4	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
						no Sb/Br)		
SN74LS32DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DRG4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32DRG4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32J	OBSOLETE	CDIP	J	14		TBD	Call TI	Call TI
SN74LS32J	OBSOLETE	CDIP	J	14		TBD	Call TI	Call TI
SN74LS32N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74LS32N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74LS32N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN74LS32N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN74LS32NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74LS32NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74LS32NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32NSRG4	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LS32NSRG4	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32D	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DE4	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DE4	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DRE4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32DRE4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74S32N	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74S32N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN74S32N3	OBSOLETE	PDIP	N	14		TBD	Call TI	Call TI
SN74S32NE4	ACTIVE	PDIP	N	14	25	Pb-Free	CU NIPDAU	Level-NC-NC-NC



Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
						(RoHS)		
SN74S32NE4	ACTIVE	PDIP	N	14	25	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC
SN74S32NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32NSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32NSRE4	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74S32NSRE4	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SNJ5432J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ5432J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ5432W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ5432W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32FK	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32FK	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54LS32W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32FK	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32FK	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32J	ACTIVE	CDIP	J	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC
SNJ54S32W	ACTIVE	CFP	W	14	1	TBD	Call TI	Level-NC-NC-NC

<sup>(1)</sup> The marketing status values are defined as follows:

**ACTIVE:** Product device recommended for new designs.

**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.

**OBSOLETE:** TI has discontinued the production of the device.

<sup>(2)</sup> Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS) or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

**TBD:** The Pb-Free/Green conversion plan has not been defined.

**Pb-Free (RoHS):** TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

**Green (RoHS & no Sb/Br):** TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

<sup>(3)</sup> MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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# J (R-GDIP-T\*\*)

14 LEADS SHOWN

# CERAMIC DUAL IN-LINE PACKAGE



DIM \ PINS **	14	16	18	20
A	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC	0.300 (7,62) BSC
B MAX	0.785 (19,94)	.840 (21,34)	0.960 (24,38)	1.060 (26,92)
B MIN	—	—	—	—
C MAX	0.300 (7,62)	0.300 (7,62)	0.310 (7,87)	0.300 (7,62)
C MIN	0.245 (6,22)	0.245 (6,22)	0.220 (5,59)	0.245 (6,22)



4040083/F 03/03

- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package is hermetically sealed with a ceramic lid using glass frit.
  - Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
  - Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.



FK (S-CQCC-N\*\*)

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. This package can be hermetically sealed with a metal lid.
  - D. The terminals are gold plated.
  - E. Falls within JEDEC MS-004

N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - D The 20 pin end lead shoulder width is a vendor option, either half or full width.

4040049/E 12/2002

D (R-PDSO-G14)

PLASTIC SMALL-OUTLINE PACKAGE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - 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-012 variation AB.

## MECHANICAL DATA

**NS (R-PDSO-G\*\*)**

**PLASTIC SMALL-OUTLINE PACKAGE**

**14-PINS SHOWN**



- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.



DB (R-PDSO-G\*\*)

PLASTIC SMALL-OUTLINE

28 PINS SHOWN



- NOTES: A. All linear dimensions are in millimeters.  
 B. This drawing is subject to change without notice.  
 C. Body dimensions do not include mold flash or protrusion not to exceed 0,15.  
 D. Falls within JEDEC MO-150

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Power Mgmt	<a href="http://power.ti.com">power.ti.com</a>	Optical Networking	<a href="http://www.ti.com/opticalnetwork">www.ti.com/opticalnetwork</a>
Microcontrollers	<a href="http://microcontroller.ti.com">microcontroller.ti.com</a>	Security	<a href="http://www.ti.com/security">www.ti.com/security</a>
		Telephony	<a href="http://www.ti.com/telephony">www.ti.com/telephony</a>
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View RoHS Compliant Devices

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**SN74LS32**, Status: ACTIVE  
Quad 2-input positive-OR gates



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<input type="checkbox"/> Features	<input type="checkbox"/> Samples	<input type="checkbox"/> Technical Documents
<input type="checkbox"/> Quality & Pb-Free Data	<input type="checkbox"/> Pricing/Packaging	<input type="checkbox"/> Applications Notes
<input type="checkbox"/> Related Products	<input type="checkbox"/> Inventory	<input type="checkbox"/> Simulation Models
<input type="checkbox"/> Tools & Software	<input type="checkbox"/> Symbols/Footprints	<input type="checkbox"/> Reference Designs



**Refine Your Selection**

- Logic: OR Gates

**Support**

- KnowledgeBase
- Contact Technical Support
- TI Cross Reference
- Training
- Part Marking Lookup
- Part Number Nomenclature

**Datasheet**



Download Datasheet

**Quadruple 2-Input Positive-OR Gates** (sn74ls32.pdf, 674 KB)  
01 Mar 1988 [Download](#)

	SN54LS32	SN74LS32
<b>Voltage Nodes(V)</b>	5	5
<b>Output Level</b>	TTL	TTL
<b>Static Current</b>		8
	<a href="#">Samples</a>	<a href="#">Samples</a>
	<a href="#">Inventory</a>	<a href="#">Inventory</a>

**Product Information**

Features [Save this to your personal library](#)

Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers and Flat Packages, and Plastic and Ceramic DIPs  
Dependable Texas Instruments Quality and Reliability

Description

These devices contain four independent 2-input OR gates.

The SN5432, SN54LS32 and SN54S32 are characterized for operation over the full military range of -55°C to 125°C. The SN7432, SN74LS32 and SN74S32 are characterized for operation from 0°C to 70°C.



**Pricing/Packaging/CAD Design Tools/Samples**

			Price	Packaging			CAD Design Tools	Samples
Device	Status	Temp (°C)	Budget Price (\$US)   QTY	Industry Standard (TI Pkg)   Pins	Top Side Marking	Standard Pack Quantity	Footprints	Samples
SN74LS32D	ACTIVE	0 to 70	0.26   1KU	SOIC (D)   14	<a href="#">View</a>	50	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32DBR	ACTIVE	0 to 70	0.26   1KU	SSOP (DB)   14	<a href="#">View</a>	2000	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32DBRE4	ACTIVE	0 to 70	0.26   1KU	SSOP (DB)   14	<a href="#">View</a>	2000	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32DG4	ACTIVE	0 to 70	0.29   1KU	SOIC (D)   14	<a href="#">View</a>	50	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32DR	ACTIVE	0 to 70	0.26   1KU	SOIC (D)   14	<a href="#">View</a>	2500	<input type="checkbox"/>	Contact TI Distributor or Sales Office
SN74LS32DRG4	ACTIVE	0 to 70	0.29   1KU	SOIC (D)   14	<a href="#">View</a>	2500	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32J	OBSOLETE	0 to 70		CDIP (J)   14			<input type="checkbox"/>	Not Available
SN74LS32N	ACTIVE	0 to 70	0.26   1KU	PDIP (N)   14	<a href="#">View</a>	25	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32N3	OBSOLETE	0 to 70		PDIP (N)   14	<a href="#">View</a>		<input type="checkbox"/>	Not Available
SN74LS32NE4	ACTIVE	0 to 70	0.26   1KU	PDIP (N)   14	<a href="#">View</a>	25	<input type="checkbox"/>	<a href="#">Request Free Samples</a>
SN74LS32NSR	ACTIVE	0 to 70	0.26   1KU	SO (NS)   14	<a href="#">View</a>	2000	<input type="checkbox"/>	<a href="#">Purchase Samples</a>
SN74LS32NSRG4	ACTIVE	0 to 70	0.29   1KU	SO (NS)   14	<a href="#">View</a>	2000	<input type="checkbox"/>	<a href="#">Purchase Samples</a>

**Inventory**

	TI Inventory Status			Reported Distributor Inventory			
<b>SN74LS32D</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	<b>In Stock</b>	<b>In Progress QTY   Date</b>	<b>Lead Time</b>	<b>Region</b>	<b>Company</b>	<b>In Stock</b>	<b>Purchase</b>
	0*	450   29 Dec	10 Weeks	Americas	Avnet	738	<input type="text"/>
		450   19 Jan			Newark InOne	>1k	<input type="text"/>
		>10k   27 Feb		Europe	Abacus Polar	>1k	<input type="text"/>
					Arrow Southern Europe	238	<input type="text"/>
					Avnet-SILICA	>1k	<input type="text"/>
					EBV Elektronik	100	<input type="text"/>
<b>SN74LS32DBR</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	<b>In Stock</b>	<b>In Progress QTY   Date</b>	<b>Lead Time</b>	<b>Region</b>	<b>Company</b>	<b>In Stock</b>	<b>Purchase</b>
	0*	4000   8 Dec	8 Weeks	Americas	Avnet	>1k	<input type="text"/>
		>10k   9 Feb					
<b>SN74LS32DBRE4</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	<b>In Stock</b>	<b>In Progress QTY   Date</b>	<b>Lead Time</b>	<b>Region</b>	<b>Company</b>	<b>In Stock</b>	<b>Purchase</b>
	0*	4000   8 Dec	8 Weeks	None Reported <a href="#">View Distributors</a>			
		>10k   9 Feb					
<b>SN74LS32DG4</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	<b>In Stock</b>	<b>In Progress QTY   Date</b>	<b>Lead Time</b>	<b>Region</b>	<b>Company</b>	<b>In Stock</b>	<b>Purchase</b>
	0*	>10k   24 Feb	13 Weeks	None Reported <a href="#">View Distributors</a>			
<b>SN74LS32DR</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	<b>In Stock</b>	<b>In Progress QTY   Date</b>	<b>Lead Time</b>	<b>Region</b>	<b>Company</b>	<b>In Stock</b>	<b>Purchase</b>
	0*	>10k   27 Feb	14 Weeks	Americas	DigiKey	562	<input type="text"/>
<b>SN74LS32DRG4</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			

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Choose a Region



	In Stock	In Progress QTY   Date	Lead Time	Region	Company	In Stock	Purchase
	0*	>10k   24 Feb	13 Weeks	None Reported	View Distributors		
<b>SN74LS32N</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	In Stock	In Progress QTY   Date	Lead Time	Region	Company	In Stock	Purchase
	2266*	6241   8 Dec	4 Weeks	Americas	Avnet	>1k	<input type="text"/>
		3234   15 Dec			DigiKey	>1k	<input type="text"/>
		8000   12 Jan			Newark InOne	>1k	<input type="text"/>
				Europe	Abacus Polar	946	<input type="text"/>
					Arrow Northern Europe	>1k	<input type="text"/>
					Arrow Southern Europe	819	<input type="text"/>
					Avnet-SILICA	>1k	<input type="text"/>
					EBV Elektronik	>1k	<input type="text"/>
					Spoerle	>1k	<input type="text"/>
<b>SN74LS32NE4</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	In Stock	In Progress QTY   Date	Lead Time	Region	Company	In Stock	Purchase
	2266*	6241   8 Dec	4 Weeks	None Reported			
		3234   15 Dec		View Distributors			
		8000   12 Jan					
<b>SN74LS32NSR</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	In Stock	In Progress QTY   Date	Lead Time	Region	Company	In Stock	Purchase
	0*	2000   7 Feb	11 Weeks	Europe	Avnet-SILICA	>1k	<input type="text"/>
		8000   14 Feb					
		583   17 Mar					
<b>SN74LS32NSRG4</b>	As of 9:05 AM GMT, 25 Nov 2005			As of 9:05 AM GMT, 25 Nov 2005			
	In Stock	In Progress QTY   Date	Lead Time	Region	Company	In Stock	Purchase
	0*		14 Weeks	None Reported			
				View Distributors			

\* Our information is updated daily, so please check back with us soon if this does not meet your needs. You may also contact your [TI Authorized Distributor](#), including those [listed above](#), for real time stock information.

\*\* Lead time information is not available at this time. However, our information is updated daily so please check back with us soon. Please contact your preferred [TI Authorized Distributor](#) for additional information.

### Quality & Lead (Pb)-Free Data

Product Content					MTBF/FIT Rate	
Device	Eco Plan*	Lead/Ball Finish	MSL Rating/Peak Reflow	Details	Details	
SN74LS32D <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32DBR <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32DBRE4 <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32DG4 <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32DR <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32DRG4 <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32N <input type="checkbox"/>	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32NE4 <input type="checkbox"/>	Pb-Free (RoHS)	CU NIPDAU	Level-NC-NC-NC	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32NSR <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	
SN74LS32NSRG4 <input type="checkbox"/>	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	<a href="#">View</a>	<a href="#">View</a>	

\* The planned eco-friendly classification: Pb-Free (RoHS) or Green (RoHS & no Sb/Br) - please click on the Product Content Details "View" link in the table above for the latest availability information and additional product content details.

If the information you are requesting is not available online at this time, contact one of our [Product Information Centers](#) regarding the availability of this information.

**Quadruple 2-Input Positive-OR Gates** (sn74ls32.pdf, 674 KB)

01 Mar 1988 [Download](#)

Application Notes

**Semiconductor Packing Material Electrostatic Discharge (ESD) Protection** (szza047.htm, 9 KB)

08 Jul 2004 [Abstract](#)

**Shelf-Life Evaluation of Lead-Free Component Finishes** (szza046.htm, 9 KB)

24 May 2004 [Abstract](#)

**Understanding and Interpreting Standard-Logic Data Sheets (Rev. B)** (szza036b.htm, 8 KB)

28 May 2003 [Abstract](#)

**TI IBIS File Creation, Validation, and Distribution Processes** (szza034.htm, 9 KB)

29 Aug 2002 [Abstract](#)

**Designing With Logic (Rev. C)** (sdya009c.htm, 9 KB)

01 Jun 1997 [Abstract](#)

**Designing with the SN54/74LS123 (Rev. A)** (sdla006a.htm, 9 KB)

01 Mar 1997 [Abstract](#)

**Live Insertion** (sdya012.htm, 9 KB)

01 Oct 1996 [Abstract](#)

**Input and Output Characteristics of Digital Integrated Circuits** (sdya010.htm, 9 KB)

01 Oct 1996 [Abstract](#)

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User Guides

**LOGIC Pocket Data Book** (scyd013.pdf, 4835 KB)

05 Dec 2002 [Download](#)

Simulation Models

**IBIS Model**

**IBIS Model of SN74LS32 (Rev. B)** (sdlm006b.ibs, 29 KB)

16 Nov 2004 [ibis](#) / [zip](#)

More Literature

**Logic Selection Guide 2005 (Rev. X)** (sdyu001x.pdf, 6909 KB)

15 Mar 2005 [Download](#)

**Military Semiconductors Selection Guide 2004-2005 (Rev. D)** (sgyc003d.pdf, 964 KB)

10 Aug 2004 [Download](#)

**Logic Cross-Reference (Rev. A)** (scyb017a.pdf, 2938 KB)

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