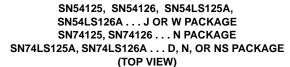
The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

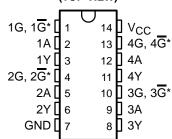
SN54125, SN54126, SN54LS125A, SN54LS126A, SN74125, SN74126, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS SDLS044A – DECEMBER 1983 – REVISED MARCH 2002

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

description

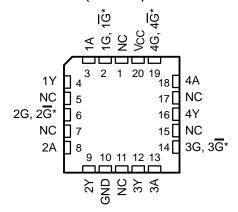
These bus buffers feature three-state outputs that, when enabled, have the low impedance characteristics of a TTL output with additional drive capability at high logic levels to permit driving heavily loaded bus lines without external pullup resistors. When disabled, both output transistors are turned 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 devices' outputs are disabled when \overline{G} is high. The '126 and 'LS126A devices' outputs are disabled when G is low.





*G on '125 and 'LS125A devices; G on 126 and 'LS126A devices

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



*G on '125 and 'LS125A devices; G on 126 and 'LS126A devices NC – No internal connection



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is 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.



Copyright © 2002, Texas Instruments Incorporated On products compliant to MIL-PRF-38535, all parameters are tested unless otherwise noted. On all other products, production processing does not necessarily include testing of all parameters.

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

SDLS044A - DECEMBER 1983 - REVISED MARCH 2002

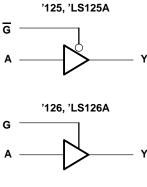
The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

TA	PACI	KAGE [†]	ORDERABLE PART NUMBER	TOP-SIDE MARKING
	PDIP – N	Tube	SN74LS125AN	SN74LS125AN
	PDIP – N	Tube	SN74LS126AN	SN74LS126AN
		Tube	SN74LS125AD	LS125A
0°C to 70°C	SOIC – D	Tape and reel SN74LS125ADR		L5125A
	30IC - D	Tube	SN74LS126AD	LS126A
		Tape and reel	SN74LS126ADR	L3120A
	SOP – NS	Tape and reel	SN74LS125ANSR	74LS125A
	30P - N3	Tape and reel	SN74LS126ANSR	74LS126A
	CDIP – J	Tube	SN54LS125AJ	SN54LS125AJ
–55°C to 125°C	CDIP – J	Tube	SNJ54LS125AJ	SNJ54LS125AJ
-55°C 10 125°C	CFP – W	Tube	SNJ54LS125AW	SNJ54LS125AW
	LCCC – FK	Tube	SNJ54LS125AFK	SNJ54LS125AFK

ORDERING INFORMATION

[†] Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.

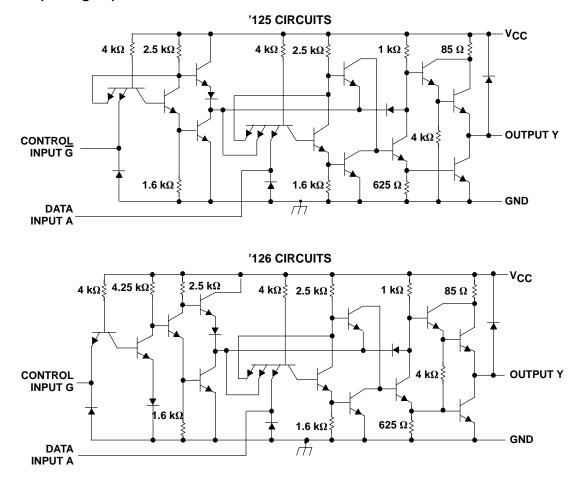
logic diagram (each gate)



Y = A



schematics (each gate)



absolute maximum ratings over operating free-air temperature (unless otherwise noted)[†] ('125 and '126)

Supply voltage, V _{CC} (see Note 1)	7 V
Input voltage, V ₁	5.5 V
Package thermal impedance, θ _{JA} (see Note 2): N package	°C/W
Storage temperature range, T _{stg}	50°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.

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

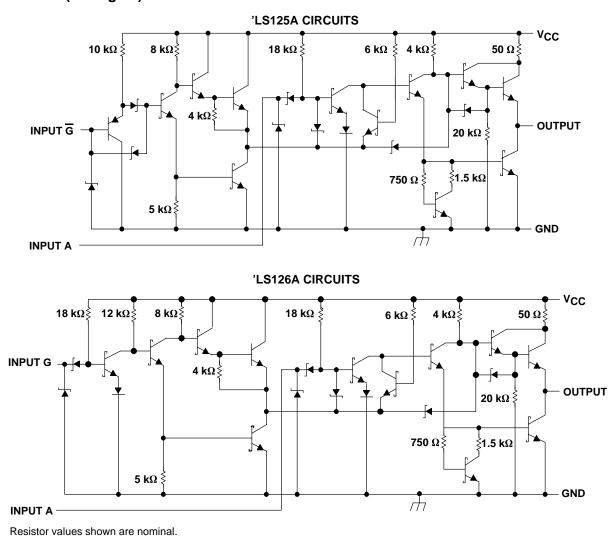
2. The package termal impedance is calculated in accordance with JESD 51-7.



SN54125, SN54126, SN54LS125A, SN54LS126A, SN74125, SN74126, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS SDLS044A – DECEMBER 1983 – REVISED MARCH 2002

The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

schematics (each gate)



absolute maximum ratings over operating free-air temperature (unless otherwise noted)[†] ('LS125A and 'LS126A)

Supply voltage, V _{CC} (see Note 1)	
Input voltage, V ₁	
Package thermal impedance, θ_{JA} (see Note 2): D package	
N package	80°C/W
NS package	
Storage temperature range, T _{stg}	–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.

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

2. The package termal impedance is calculated in accordance with JESD 51-7.



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

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recommended operating conditions

			SN54125 SN54126			SN74125 SN74126		
		MIN	NOM	MAX	MIN	NOM	MAX	
Vcc	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
VIH	High-level input voltage	2			2			V
VIL	Low-level input voltage			0.8			0.8	V
ЮН	High-level output current			-2			-5.2	mA
IOL	Low-level output current			16			16	mA
Т _А	Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER		TEST CONDITIO	NS [†]		SN54125 SN54126			SN74125 SN74126		UNIT
				MIN	түр‡	MAX	MIN	TYP‡	MAX	
VIK	$V_{CC} = MIN,$	lj = -12 mA				-1.5			-1.5	V
Vou	$V_{CC} = MIN,$	V _{IH} = 2 V,	I _{OH} = -2 mA	2.4	3.3					V
Vон	V _{IL} = 0.8 V		I _{OH} = -5.2 mA				2.4	3.1		v
Ve	$V_{CC} = MIN,$	V _{IH} = 2 V,	V _{IL} = 0.8 V,			0.4			0.4	V
VOL	I _{OL} = 16 mA					0.4			0.4	V
	$V_{CC} = MAX$	V _{IH} = 2 V,	V _O = 2.4 V			40			40	
loz	$V_{IL} = 0.8 V$		V _O = 0.4 V			-40			-40	μA
lı	V _{CC} = MAX,	V _I = 6.5 V	_			1			1	mA
Чн	V _{CC} = MAX,	V _I = 2.4 V				40			40	μA
١L	V _{CC} = MAX,	V _I = 0.4 V				-1.6			-1.6	mA
IOS§	$V_{CC} = MAX$			-30		-70	-28		-70	mA
	V _{CC} = MAX		'125		32	54		32	54	~ ^
Icc	(see Note 3)		'126		36	62		36	62	mA

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

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

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

NOTE 3: Data inputs = 0 V; output control = 4.5 V for '125 and 0 V for '126.

switching characteristics, $V_{CC} = 5 V$, $T_A = 25^{\circ}C$ (see Figure 1)

PARAMETER	TEST CON	DITIONS	-	N54125 N74125		s s		UNIT	
			MIN	TYP	MAX	MIN	TYP	MAX	
^t PLH	$R_{1} = 400 \Omega_{2}$	C _I = 50 pF		8	13		8	13	ns
^t PHL	NL = 400 32,	0L = 30 pi		12	18		12	18	115
^t PZH	$R_{1} = 400 \Omega_{2}$	400 Ω, C _I = 50 pF		11	17		11	18	ns
^t PZL	NL = 400 32,	0L = 30 pi		16	25		16	25	115
^t PHZ	$R_1 = 400 \Omega$,	Cl = 5 pF		5	8		10	16	ns
^t PLZ	ις_ = 400 sz,	0 <u> </u>		7	12		12	18	115



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

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The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

recommended operating conditions

		-	54LS12	-		SN74LS125A SN74LS126A		
		MIN	NOM	MAX	MIN	NOM	MAX	
VCC	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
VIH	High-level input voltage	2			2			V
VIL	Low-level input voltage			0.7			0.8	V
ЮН	High-level output current			-1			-2.6	mA
IOL	Low-level output current			12			24	mA
Т _А	Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER		TEST CONDITIO	ns†		54LS12		SN SN	UNIT		
				MIN	TYP‡	MAX	MIN	TYP‡	MAX	
VIK	V _{CC} = MIN,	l _l = –18 mA				-1.5			-1.5	V
Vou	V _{CC} = MIN,	V _{IL} = 0.7 V,	I _{OH} = -1 mA	2.4						v
VOH	V _{IH} = 2 V	V _{IL} = 0.8 V	I _{OH} = -2.6 mA				2.4			v
		V _{IL} = 0.7 V,	I _{OL} = 12 mA		0.25	0.4				
VOL	V _{CC} = MIN, V _{IH} = 2 V	V _{IL} = 0.8 V,	I _{OL} = 12 mA					0.25	0.4	V
	*IH = 2 *	V _{IL} = 0.8 V,	I _{OL} = 24 mA					0.35	0.5	
			V _O = 2.4 V			20				
	V _{CC} = MAX,	V _{IL} = 0.7 V	V _O = 0.4 V			-20				
I _{OZ}	V _{IH} = 2 V,	V _{IL} = 0.8 V	V _O = 2.4 V						20	μA
		VIL = 0.8 V	V _O = 0.4 V						-20	
Ц	V _{CC} = MAX,	VI = 7 V				0.1			0.1	mA
Iн	V _{CC} = MAX,	V _I = 2.7 V				20			20	μA
t.	V _{CC} = MAX,	'LS125A-G inpu	ts			-0.2			-0.2	mA
ΙL	V _I = 0.4 V	'LS125A-A input	ts; 'LS126A All inputs			-0.4			-0.4	mA
IOS§	V _{CC} = MAX	-		-40		-225	-40		-225	mA
	V _{CC} = MAX		'LS125A		11	20		11	20	mA
ICC	(see Note 4)	· · · ·	'LS126A		12	22		12	22	THA

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

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

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

NOTE 4: Data inputs = 0 V; output control = 4.5 V for 'LS125A and 0 V for 'LS126A.

switching characteristics, $V_{CC} = 5 V$, $T_A = 25^{\circ}C$ (see Figure 1)

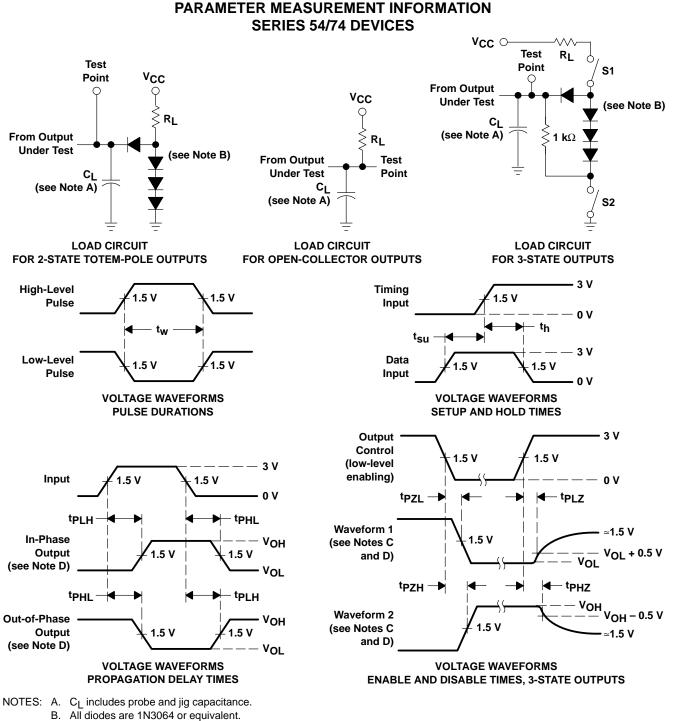
PARAMETER	TEST CON	NDITIONS	-	54LS12		SN: SN:	UNIT		
			MIN	TYP	MAX	MIN	TYP	MAX	
^t PLH	R _I = 667 Ω,	C _L = 45 pF		9	15		9	15	ns
^t PHL	NL = 007 32,	0L = 43 pi		7	18		8	18	115
^t PZH	R ₁ = 667 Ω,	C ₁ = 45 pF		12	20		16	25	ns
^t PZL	NL = 007 32,	0L = 43 pi		15	25		21	35	115
^t PHZ	R _I = 667 Ω,	C ₁ = 5 pF			20			25	ns
^t PLZ	NL = 007 22,	0L = 5 pF			20			25	115



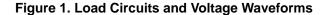
The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

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

SDLS044A - DECEMBER 1983 - REVISED MARCH 2002



- C. 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.
- D. S1 and S2 are closed for tpLH, tpHL, tpHZ, and tpLZ; S1 is open and S2 is closed for tpZH; S1 is closed and S2 is open for tpZL. E. All input pulses are supplied by generators having the following characteristics: PRR \leq 1 MHz, Z₀ \approx 50 Ω ; t_r and t_f \leq 7 ns for Series
- 54/74 devices and t_r and $t_f \le 2.5$ ns for Series 54S/74S devices.
- F. The outputs are measured one at a time with one input transition per measurement.

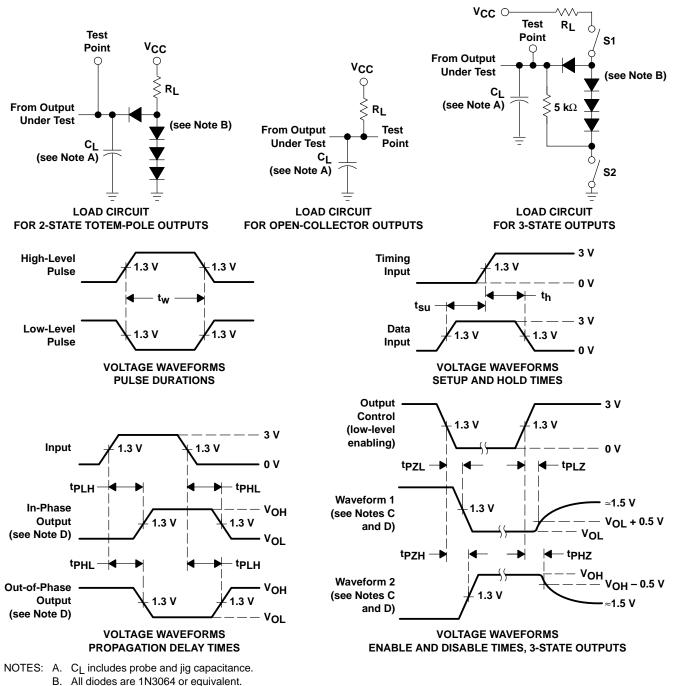




SN54125, SN54126, SN54LS125A, SN54LS126A, SN74125, SN74126, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS SDLS044A – DECEMBER 1983 – REVISED MARCH 2002

The SN54125, SN54126, SN74125, SN74126, and SN54LS126A are obsolete and are no longer supplied.

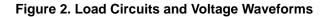
PARAMETER MEASUREMENT INFORMATION SERIES 54LS/74LS DEVICES



C. 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.

D. S1 and S2 are closed for tpLH, tpHL, tpHZ, and tpLZ; S1 is open and S2 is closed for tpZH; S1 is closed and S2 is open for tpZL.

- E. Phase relationships between inputs and outputs have been chosen arbitrarily for these examples.
- F. All input pulses are supplied by generators having the following characteristics: PRR \leq 1 MHz, Z_O \approx 50 Ω , t_f \leq 1.5 ns, t_f \leq 2.6 ns.
- G. The outputs are measured one at a time with one input transition per measurement.







6-Feb-2020

PACKAGING INFORMATION

Orderable Device	Status	Package Type		Pins	-	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Device Marking	Samples
	(1)		Drawing		Qty	(2)	(6)	(3)		(4/5)	
JM38510/32301B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 32301B2A	Samples
JM38510/32301BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 32301BCA	Samples
JM38510/32301BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 32301BDA	Samples
M38510/32301B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	JM38510/ 32301B2A	Samples
M38510/32301BCA	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 32301BCA	Samples
M38510/32301BDA	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	JM38510/ 32301BDA	Samples
SN54LS125AJ	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SN54LS125AJ	Samples
SN74LS125AD	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS125A	Samples
SN74LS125ADBR	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS125A	Samples
SN74LS125ADR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS125A	Samples
SN74LS125ADRE4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS125A	Samples
SN74LS125AN	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS125AN	Samples
SN74LS125ANSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	74LS125A	Samples
SN74LS126AD	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS126A	Samples
SN74LS126ADR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	LS126A	Samples
SN74LS126AN	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	NIPDAU	N / A for Pkg Type	0 to 70	SN74LS126AN	Samples
SN74LS126ANSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	NIPDAU	Level-1-260C-UNLIM	0 to 70	74LS126A	Samples



6-Feb-2020

Orderable Device	Status	Package Type	Package Drawing	Pins	Package Qty	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Device Marking (4/5)	Samples
SNJ54LS125AJ	ACTIVE	CDIP	J	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS125AJ	Samples
SNJ54LS125AW	ACTIVE	CFP	W	14	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	SNJ54LS125AW	Samples

⁽¹⁾ 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.

⁽²⁾ RoHS: TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (CI) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

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

⁽⁴⁾ There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(⁵⁾ Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

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

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OTHER QUALIFIED VERSIONS OF SN54LS125A, SN74LS125A :



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PACKAGE OPTION ADDENDUM

6-Feb-2020

• Catalog: SN74LS125A

Military: SN54LS125A

NOTE: Qualified Version Definitions:

- Catalog TI's standard catalog product
- Military QML certified for Military and Defense Applications

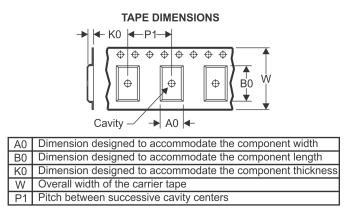
PACKAGE MATERIALS INFORMATION

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TAPE AND REEL INFORMATION





QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



Device	Package Type	Package Drawing		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
SN74LS125ADR	SOIC	D	14	2500	330.0	16.4	6.5	9.0	2.1	8.0	16.0	Q1
SN74LS125ANSR	SO	NS	14	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
SN74LS126ADR	SOIC	D	14	2500	330.0	16.4	6.5	9.0	2.1	8.0	16.0	Q1
SN74LS126ANSR	SO	NS	14	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1

TEXAS INSTRUMENTS

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PACKAGE MATERIALS INFORMATION

20-Dec-2018



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LS125ADR	SOIC	D	14	2500	367.0	367.0	38.0
SN74LS125ANSR	SO	NS	14	2000	367.0	367.0	38.0
SN74LS126ADR	SOIC	D	14	2500	367.0	367.0	38.0
SN74LS126ANSR	SO	NS	14	2000	367.0	367.0	38.0

W (R-GDFP-F14)

CERAMIC DUAL FLATPACK



- 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 ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only.
 - E. Falls within MIL STD 1835 GDFP1-F14



GENERIC PACKAGE VIEW

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



Images above are just a representation of the package family, actual package may vary. Refer to the product data sheet for package details.



J0014A



PACKAGE OUTLINE

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



NOTES:

- 1. All controlling linear dimensions are in inches. Dimensions in brackets are in millimeters. Any dimension in brackets or parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
- 2. This drawing is subject to change without notice.
- 3. This package is hermitically sealed with a ceramic lid using glass frit.
- Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
 Falls within MIL-STD-1835 and GDIP1-T14.



J0014A

EXAMPLE BOARD LAYOUT

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE





D (R-PDSO-G14)

PLASTIC SMALL OUTLINE



NOTES: A. All linear dimensions are in inches (millimeters).

- B. This drawing is subject to change without notice.
- Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
- Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
- E. Reference JEDEC MS-012 variation AB.





NOTES: A. All linear dimensions are in millimeters.

- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
 E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.



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.
- Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
- \triangle The 20 pin end lead shoulder width is a vendor option, either half or full width.



MECHANICAL DATA

MSSO002E - JANUARY 1995 - REVISED DECEMBER 2001

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



LEADLESS CERAMIC CHIP CARRIER

FK (S-CQCC-N**) 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. Falls within JEDEC MS-004



MECHANICAL DATA

PLASTIC SMALL-OUTLINE PACKAGE

0,51 0,35 ⊕0,25⊛ 1,27 8 14 0,15 NOM 5,60 8,20 5,00 7,40 \bigcirc Gage Plane ₽ 0,25 7 1 1,05 0,55 0-10 Δ 0,15 0,05 Seating Plane — 2,00 MAX 0,10PINS ** 14 16 20 24 DIM 10,50 10,50 12,90 15,30 A MAX A MIN 9,90 9,90 12,30 14,70 4040062/C 03/03

NOTES: A. All linear dimensions are in millimeters.

NS (R-PDSO-G**)

14-PINS SHOWN

- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.



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