- 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 $\overline{\mathrm{G}}$ is high. The '126 and 'LS126A devices' outputs are disabled when G is low.

SN54125, SN54126, SN54LS125A,
SN54LS126A... J OR W PACKAGE
SN74125, SN74126 . . . N PACKAGE
SN74LS125A, SN74LS126A ... D, N, OR NS PACKAGE (TOP VIEW)

${ }^{*} \bar{G}$ on '125 and 'LS125A devices; G on 126 and 'LS126A devices

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

${ }^{*} \bar{G}$ on '125 and 'LS125A devices; G on 126 and 'LS126A devices NC - No internal connection

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

ORDERING INFORMATION

| $\mathrm{T}_{\mathrm{A}}$ | PACKAGE $\dagger$ |  | ORDERABLE <br> PART NUMBER | TOP-SIDE MARKING |
| :---: | :---: | :---: | :---: | :---: |
| $0^{\circ} \mathrm{C}$ to $70^{\circ} \mathrm{C}$ | PDIP - N | Tube | SN74LS125AN | SN74LS125AN |
|  |  | Tube | SN74LS126AN | SN74LS126AN |
|  | SOIC - D | Tube | SN74LS125AD | LS125A |
|  |  | Tape and reel | SN74LS125ADR |  |
|  |  | Tube | SN74LS126AD | LS126A |
|  |  | Tape and reel | SN74LS126ADR |  |
|  | SOP - NS | Tape and reel | SN74LS125ANSR | 74LS125A |
|  |  | Tape and reel | SN74LS126ANSR | 74LS126A |
| $-55^{\circ} \mathrm{C}$ to $125^{\circ} \mathrm{C}$ | CDIP - J | Tube | SN54LS125AJ | SN54LS125AJ |
|  |  | Tube | SNJ54LS125AJ | SNJ54LS125AJ |
|  | CFP - W | Tube | SNJ54LS125AW | SNJ54LS125AW |
|  | LCCC - FK | Tube | SNJ54LS125AFK | SNJ54LS125AFK |

$\dagger$ Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.
logic diagram (each gate)

'125, 'LS125A

$Y=A$

The SN54125, SN54126, SN74125,

## schematics (each gate)


' 126 CIRCUITS

absolute maximum ratings over operating free-air temperature (unless otherwise noted) $\dagger$ ('125 and '126)
$\qquad$
Supply voltage, $\mathrm{V}_{\mathrm{CC}}$ (see Note 1)
Input voltage, $\mathrm{V}_{\mathrm{I}}$
Package thermal impedance, $\theta_{\mathrm{JA}}$ (see Note 2):N package .......................................... 80 ${ }^{\circ} \mathrm{C} / \mathrm{W}$
Storage temperature range, $T_{\text {stg }}$
$\dagger$ 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.

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

## schematics (each gate)



Resistor values shown are nominal.
absolute maximum ratings over operating free-air temperature (unless otherwise noted) $\dagger$ ('LS125A and 'LS126A)


 N package ........................................... $80^{\circ} \mathrm{C} / \mathrm{W}$
NS package ............................................. $76^{\circ} \mathrm{C} / \mathrm{W}$

$\dagger$ 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.

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

SN74125, SN74126, SN74LS125A, SN74LS126A QUADRUPLE BUS BUFFERS WITH 3-STATE OUTPUTS

## recommended operating conditions

|  |  | SN54125 SN54126 |  |  | SN74125 SN74126 |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | MIN | NOM | MAX | MIN | NOM | MAX |  |
| $\mathrm{V}_{\mathrm{CC}}$ | Supply voltage | 4.5 | 5 | 5.5 | 4.75 | 5 | 5.25 | V |
| $\mathrm{V}_{\mathrm{IH}}$ | High-level input voltage | 2 |  |  | 2 |  |  | V |
| $\mathrm{V}_{\mathrm{IL}}$ | Low-level input voltage |  |  | 0.8 |  |  | 0.8 | V |
| IOH | High-level output current |  |  | -2 |  |  | -5.2 | mA |
| $\mathrm{I}_{\mathrm{OL}}$ | Low-level output current |  |  | 16 |  |  | 16 | mA |
| $\mathrm{T}_{\mathrm{A}}$ | Operating free-air temperature | -55 |  | 125 | 0 |  | 70 | ${ }^{\circ} \mathrm{C}$ |

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

| PARAMETER | TEST CONDITIONS $\dagger$ |  |  | SN54125 SN54126 |  |  | SN74125SN74126 |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | MIN | TYP $\ddagger$ | MAX | MIN | TYP $\ddagger$ | MAX |  |
| VIK | $\mathrm{V}_{\mathrm{CC}}=\mathrm{MIN}$, | $\mathrm{I}_{1}=-12 \mathrm{~mA}$ |  |  |  | -1.5 |  |  | -1.5 | V |
| $\mathrm{V}_{\mathrm{OH}}$ | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=\mathrm{MIN}, \\ & \mathrm{~V}_{\mathrm{IL}}=0.8 \mathrm{~V} \end{aligned}$ | $\mathrm{V}_{\mathrm{IH}}=2 \mathrm{~V}$, | $\mathrm{I}^{\text {OH }}=-2 \mathrm{~mA}$ | 2.4 | 3.3 |  |  |  |  | V |
|  |  |  | $\mathrm{I}^{\mathrm{OH}}=-5.2 \mathrm{~mA}$ |  |  |  | 2.4 | 3.1 |  |  |
| VOL | $\begin{aligned} & \mathrm{V} \mathrm{VC}=\mathrm{MIN}, \\ & \mathrm{IOL}=16 \mathrm{~mA} \end{aligned}$ | $\mathrm{V}_{\mathrm{IH}}=2 \mathrm{~V}$, | $\mathrm{V}_{\mathrm{IL}}=0.8 \mathrm{~V}$, |  |  | 0.4 |  |  | 0.4 | V |
| Ioz | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=\mathrm{MAX} \\ & \mathrm{~V}_{\mathrm{IL}}=0.8 \mathrm{~V} \end{aligned}$ | $\mathrm{V}_{\mathrm{IH}}=2 \mathrm{~V}$, | $\mathrm{V}_{\mathrm{O}}=2.4 \mathrm{~V}$ |  |  | 40 |  |  | 40 | $\mu \mathrm{A}$ |
|  |  |  | $\mathrm{V}_{\mathrm{O}}=0.4 \mathrm{~V}$ |  |  | -40 |  |  | -40 |  |
| 1 | $\mathrm{V}_{\mathrm{CC}}=\mathrm{MAX}$, | $\mathrm{V}_{\mathrm{I}}=6.5 \mathrm{~V}$ |  |  |  | 1 |  |  | 1 | mA |
| 1 IH | $V_{C C}=$ MAX, | $\mathrm{V}_{\mathrm{I}}=2.4 \mathrm{~V}$ |  |  |  | 40 |  |  | 40 | $\mu \mathrm{A}$ |
| IIL | $V_{C C}=\mathrm{MAX}$, | $\mathrm{V}_{\mathrm{I}}=0.4 \mathrm{~V}$ |  |  |  | -1.6 |  |  | -1.6 | mA |
| los§ | $\mathrm{V}_{\mathrm{CC}}=\mathrm{MAX}$ |  |  | -30 |  | -70 | -28 |  | -70 | mA |
| ICC | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=\mathrm{MAX} \\ & \text { (see Note 3) } \end{aligned}$ |  | '125 |  | 32 | 54 |  | 32 | 54 | mA |
|  |  |  | '126 |  | 36 | 62 |  | 36 | 62 |  |

$\dagger$ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
$\ddagger$ All typical values are at $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$.
§ Not more than one output should be shorted at a time.
NOTE 3: Data inputs $=0 \mathrm{~V}$; output control $=4.5 \mathrm{~V}$ for ' 125 and 0 V for ' 126.
switching characteristics, $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ (see Figure 1)

| PARAMETER | TEST CONDITIONS |  | SN54125 SN74125 |  |  | $\begin{aligned} & \text { SN54126 } \\ & \text { SN74126 } \end{aligned}$ |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | MIN | TYP | MAX | MIN | TYP | MAX |  |
| tPLH | $R_{L}=400 \Omega$, | $C_{L}=50 \mathrm{pF}$ |  | 8 | 13 |  | 8 | 13 | ns |
| tPHL |  |  |  | 12 | 18 |  | 12 | 18 |  |
| tPZH | $R_{L}=400 \Omega$, | $C_{L}=50 \mathrm{pF}$ |  | 11 | 17 |  | 11 | 18 | ns |
| tPZL |  |  |  | 16 | 25 |  | 16 | 25 |  |
| tPHZ | $R_{L}=400 \Omega$, | $C_{L}=5 \mathrm{pF}$ |  | 5 | 8 |  | 10 | 16 | ns |
| tPLZ |  |  |  | 7 | 12 |  | 12 | 18 |  |

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

## recommended operating conditions

|  |  | SN54LS125A SN54LS126A |  |  | SN74LS125A SN74LS126A |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | MIN | NOM | MAX | MIN | NOM | MAX |  |
| $\mathrm{V}_{\mathrm{CC}}$ | Supply voltage | 4.5 | 5 | 5.5 | 4.75 | 5 | 5.25 | V |
| $\mathrm{V}_{\mathrm{IH}}$ | High-level input voltage | 2 |  |  | 2 |  |  | V |
| $\mathrm{V}_{\text {IL }}$ | Low-level input voltage |  |  | 0.7 |  |  | 0.8 | V |
| ${ }^{\mathrm{I} \mathrm{OH}}$ | High-level output current |  |  | -1 |  |  | -2.6 | mA |
| $\mathrm{I}_{\mathrm{OL}}$ | Low-level output current |  |  | 12 |  |  | 24 | mA |
| $\mathrm{T}_{\text {A }}$ | Operating free-air temperature | -55 |  | 125 | 0 |  | 70 | ${ }^{\circ} \mathrm{C}$ |

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

$\dagger$ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
$\ddagger$ All typical values are at $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$.
§ 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 $=0 \mathrm{~V}$; output control $=4.5 \mathrm{~V}$ for ' 'LS125A and 0 V for 'LS126A.
switching characteristics, $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=\mathbf{2 5}{ }^{\circ} \mathrm{C}$ (see Figure 1)

| PARAMETER | TEST CONDITIONS |  | SN54LS125A SN74LS125A |  |  | SN54LS126A SN74LS126A |  |  | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | MIN | TYP | MAX | MIN | TYP | MAX |  |
| tPLH | $R_{L}=667 \Omega$, | $C_{L}=45 \mathrm{pF}$ |  | 9 | 15 |  | 9 | 15 | ns |
| tPHL |  |  |  | 7 | 18 |  | 8 | 18 |  |
| tPZH | $R_{L}=667 \Omega$, | $C_{L}=45 \mathrm{pF}$ |  | 12 | 20 |  | 16 | 25 | ns |
| tPZL |  |  |  | 15 | 25 |  | 21 | 35 |  |
| tPHZ | $\mathrm{R}_{\mathrm{L}}=667$, | $C_{L}=5 \mathrm{pF}$ |  |  | 20 |  |  | 25 | ns |
| tPLZ |  |  |  |  | 20 |  |  | 25 |  |

# PARAMETER MEASUREMENT INFORMATION SERIES 54/74 DEVICES 



NOTES: A. $\mathrm{C}_{\mathrm{L}}$ includes probe and jig capacitance.
B. All diodes are 1 N3064 or equivalent.
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: $\mathrm{PRR} \leq 1 \mathrm{MHz}, \mathrm{Z}_{\mathrm{O}} \approx 50 \Omega$; $\mathrm{t}_{\mathrm{r}}$ and $\mathrm{t}_{\mathrm{f}} \leq 7 \mathrm{~ns}$ for Series 54/74 devices and $\mathrm{t}_{\mathrm{r}}$ and $\mathrm{t}_{\mathrm{f}} \leq 2.5 \mathrm{~ns}$ for Series $54 \mathrm{~S} / 74 \mathrm{~S}$ devices.
F. The outputs are measured one at a time with one input transition per measurement.

Figure 1. Load Circuits and Voltage Waveforms

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

# PARAMETER MEASUREMENT INFORMATION SERIES 54LS/74LS DEVICES 



NOTES: A. $C_{L}$ includes probe and jig capacitance.
B. All diodes are 1 N3064 or equivalent.
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: $\mathrm{PRR} \leq 1 \mathrm{MHz}, \mathrm{Z}_{\mathrm{O}} \approx 50 \Omega, \mathrm{t}_{\mathrm{r}} \leq 1.5 \mathrm{~ns}, \mathrm{t}_{\mathrm{f}} \leq 2.6 \mathrm{~ns}$.
G. The outputs are measured one at a time with one input transition per measurement.

Figure 2. Load Circuits and Voltage Waveforms

Texas
PACKAGE OPTION ADDENDUM
INSTRUMENTS
www.ti.com
10-Jun-2022

## PACKAGING INFORMATION

| Orderable Device | Status <br> (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <br> (2) | Lead finish/ Ball material <br> (6) | MSL Peak Temp <br> (3) | Op Temp ( ${ }^{\circ} \mathrm{C}$ ) | Device Marking <br> (4/5) | Samples |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| JM38510/32301B2A | ACTIVE | LCCC | FK | 20 | 1 | Non-RoHS \& Green | SNPB | N / A for Pkg Type | -55 to 125 | $\begin{aligned} & \text { JM38510/ } \\ & \text { 32301B2A } \end{aligned}$ | Samples |
| JM38510/32301BCA | ACTIVE | CDIP | J | 14 | 1 | Non-RoHS \& Green | SNPB | N/ A for Pkg Type | -55 to 125 | $\begin{aligned} & \text { JM38510/ } \\ & \text { 32301BCA } \end{aligned}$ | Samples |
| JM38510/32301BDA | ACTIVE | CFP | W | 14 | 1 | Non-RoHS \& Green | SNPB | N/ A for Pkg Type | -55 to 125 | $\begin{aligned} & \text { JM38510/ } \\ & \text { 32301BDA } \end{aligned}$ | Samples |
| M38510/32301B2A | ACTIVE | LCCC | FK | 20 | 1 | Non-RoHS \& Green | SNPB | N/ A for Pkg Type | -55 to 125 | $\begin{aligned} & \hline \text { JM38510/ } \\ & \text { 32301B2A } \\ & \hline \end{aligned}$ | Samples |
| M38510/32301BCA | ACTIVE | CDIP | J | 14 | 1 | Non-RoHS \& Green | SNPB | N / A for Pkg Type | -55 to 125 | $\begin{aligned} & \text { JM38510/ } \\ & \text { 32301BCA } \end{aligned}$ | Samples |
| M38510/32301BDA | ACTIVE | CFP | W | 14 | 1 | Non-RoHS \& Green | SNPB | N / A for Pkg Type | -55 to 125 | $\begin{aligned} & \hline \text { JM38510/ } \\ & \text { 32301BDA } \end{aligned}$ | Samples |
| SN54LS125AJ | ACTIVE | CDIP | J | 14 | 1 | Non-RoHS \& Green | SNPB | N / A for Pkg Type | -55 to 125 | SN54LS125AJ | Samples |
| SN74LS125AD | ACTIVE | SOIC | D | 14 | 50 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS125A | Samples |
| SN74LS125ADBR | ACTIVE | SSOP | DB | 14 | 2000 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS125A | Samples |
| SN74LS125ADR | ACTIVE | SOIC | D | 14 | 2500 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS125A | Samples |
| SN74LS125ADRE4 | ACTIVE | SOIC | D | 14 | 2500 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS125A | Samples |
| SN74LS125AN | ACTIVE | PDIP | N | 14 | 25 | RoHS \& Green | NIPDAU | N / A for Pkg Type | 0 to 70 | SN74LS125AN | Samples |
| SN74LS125ANSR | ACTIVE | SO | NS | 14 | 2000 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | 74LS125A | Samples |
| SN74LS126AD | ACTIVE | SOIC | D | 14 | 50 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS126A | Samples |
| SN74LS126ADR | ACTIVE | SOIC | D | 14 | 2500 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS126A | Samples |
| SN74LS126AN | ACTIVE | PDIP | N | 14 | 25 | RoHS \& Green | NIPDAU | N / A for Pkg Type | 0 to 70 | SN74LS126AN | Samples |
| SN74LS126ANSR | ACTIVE | SO | NS | 14 | 2000 | RoHS \& Green | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | 74LS126A | Samples |
| SNJ54LS125AJ | ACTIVE | CDIP | J | 14 | 1 | Non-RoHS \& Green | SNPB | N / A for Pkg Type | -55 to 125 | SNJ54LS125AJ | Samples |

INSTRUMENTS

| Orderable Device | Status <br> (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <br> (2) | Lead finish/ Ball material <br> (6) | MSL Peak Temp <br> (3) | Op Temp ( ${ }^{\circ} \mathrm{C}$ ) | Device Marking <br> (4/5) | Samples |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SNJ54LS125AW | ACTIVE | CFP | W | 14 | 1 | Non-RoHS \& Green | SNPB | 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 finish/Ball material - Orderable Devices 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

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OTHER QUALIFIED VERSIONS OF SN54LS125A, SN74LS125A :

- Catalog : SN74LS125A
- Military : SN54LS125A

NOTE: Qualified Version Definitions:

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


## TAPE AND REEL INFORMATION



TAPE DIMENSIONS


| A0 | Dimension designed to accommodate the component width |
| :--- | :--- |
| B0 | Dimension designed to accommodate the component length |
| K0 | Dimension designed to accommodate the component thickness |
| W | Overall width of the carrier tape |
| P1 | Pitch between successive cavity centers |

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE

*All dimensions are nominal

| Device | Package <br> Type | Package <br> Drawing | Pins | SPQ | Reel <br> Diameter <br> $(\mathbf{m m})$ | Reel <br> Width <br> W1 $(\mathbf{m m})$ | A0 <br> $(\mathbf{m m})$ | B0 <br> $(\mathbf{m m})$ | K0 <br> $(\mathbf{m m})$ | P1 <br> $(\mathbf{m m})$ | W <br> $(\mathbf{m m})$ | Pin1 <br> Quadrant |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SN74LS125ADBR | SSOP | DB | 14 | 2000 | 330.0 | 16.4 | 8.35 | 6.6 | 2.4 | 12.0 | 16.0 | Q1 |
| 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 |


*All dimensions are nominal

| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SN74LS125ADBR | SSOP | DB | 14 | 2000 | 356.0 | 356.0 | 35.0 |
| SN74LS125ADR | SOIC | D | 14 | 2500 | 356.0 | 356.0 | 35.0 |
| SN74LS125ANSR | SO | NS | 14 | 2000 | 356.0 | 356.0 | 35.0 |
| SN74LS126ADR | SOIC | D | 14 | 2500 | 356.0 | 356.0 | 35.0 |
| SN74LS126ANSR | SO | NS | 14 | 2000 | 356.0 | 356.0 | 35.0 |

## TUBE



- B - Alignment groove width
*All dimensions are nominal

| Device | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T ( $\boldsymbol{\mu m}$ ) | B (mm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| JM38510/32301B2A | FK | LCCC | 20 | 1 | 506.98 | 12.06 | 2030 | NA |
| JM38510/32301BDA | W | CFP | 14 | 1 | 506.98 | 26.16 | 6220 | NA |
| M38510/32301B2A | FK | LCCC | 20 | 1 | 506.98 | 12.06 | 2030 | NA |
| M38510/32301BDA | W | CFP | 14 | 1 | 506.98 | 26.16 | 6220 | NA |
| SN74LS125AD | D | SOIC | 14 | 50 | 506.6 | 8 | 3940 | 4.32 |
| SN74LS125AN | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS125AN | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS126AD | D | SOIC | 14 | 50 | 506.6 | 8 | 3940 | 4.32 |
| SN74LS126AN | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS126AN | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SNJ54LS125AW | W | CFP | 14 | 1 | 506.98 | 26.16 | 6220 | NA |

NS (R-PDSO-G**)
14-PINS SHOWN


| DIM PINS ** | 14 | 16 | 20 | 24 |
| :---: | :---: | :---: | :---: | :---: |
| A MAX | 10,50 | 10,50 | 12,90 | 15,30 |
| A MIN | 9,90 | 9,90 | 12,30 | 14,70 |

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.

W (R-GDFP-F14)


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

This image is a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.


## GENERIC PACKAGE VIEW



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


## 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.
4. Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
5. Falls within MIL-STD-1835 and GDIP1-T14.

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.

C 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.
(D) 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.

D (R-PDSO-G14)


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.
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.


| DIM PINS ** | $\mathbf{1 4}$ | $\mathbf{1 6}$ | $\mathbf{2 0}$ | $\mathbf{2 4}$ | $\mathbf{2 8}$ | $\mathbf{3 0}$ | $\mathbf{3 8}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A MAX | 6,50 | 6,50 | 7,50 | 8,50 | 10,50 | 10,50 | 12,90 |
| A MIN | 5,90 | 5,90 | 6,90 | 7,90 | 9,90 | 9,90 | 12,30 |

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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