

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

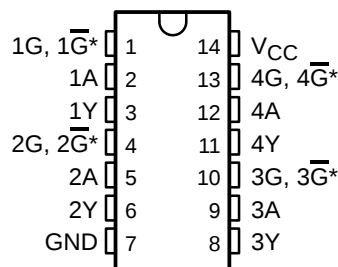
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- Quad Bus Buffers
- 3-State Outputs
- Separate Control for Each Channel

## description

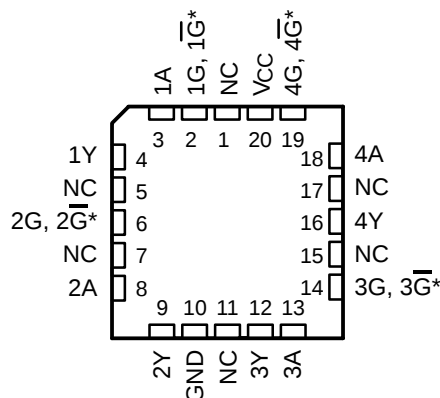
These bus buffers feature three-state outputs that, when enabled, have the low impedance characteristics of a TTL output with additional drive capability at high logic levels to permit driving heavily loaded bus lines without external pullup resistors. When disabled, both output transistors are turned 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.

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



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

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



\* $\overline{G}$  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.

**TEXAS  
INSTRUMENTS**

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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

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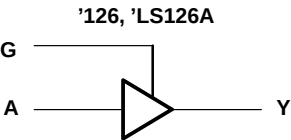
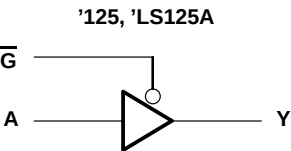
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ORDERING INFORMATION

| T <sub>A</sub> | PACKAGE†  |               | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|-----------|---------------|-----------------------|------------------|
| 0°C to 70°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          |                  |
| –55°C to 125°C | SOP – NS  | Tape and reel | SN74LS125ANSR         | 74LS125A         |
|                |           | Tape and reel | SN74LS126ANSR         | 74LS126A         |
|                | CDIP – J  | Tube          | SN54LS125AJ           | SN54LS125AJ      |
|                |           | Tube          | SNJ54LS125AJ          | SNJ54LS125AJ     |
|                | CFP – W   | Tube          | SNJ54LS125AW          | SNJ54LS125AW     |
|                | LCCC – FK | Tube          | SNJ54LS125AFK         | SNJ54LS125AFK    |

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

logic diagram (each gate)

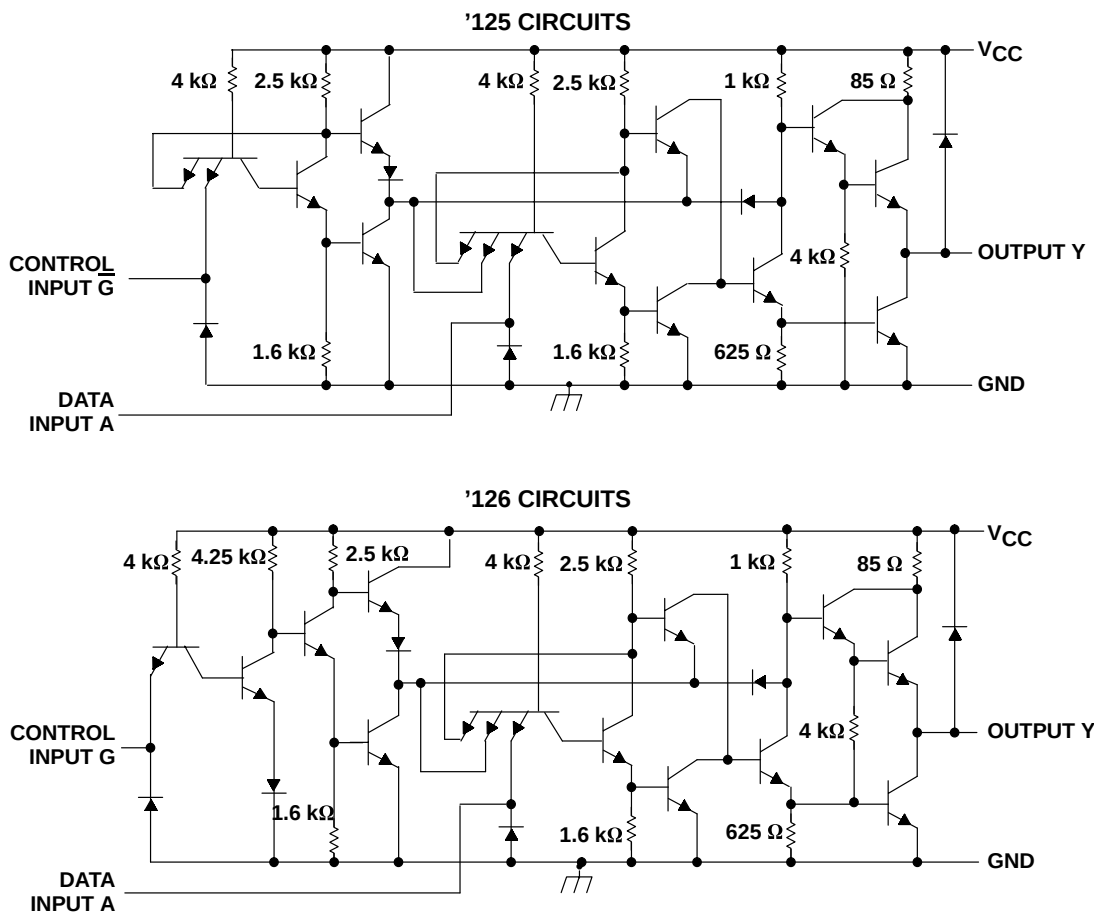


Y = A

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## schematics (each gate)



## absolute maximum ratings over operating free-air temperature (unless otherwise noted)<sup>†</sup> (<sup>'</sup>125 and <sup>'</sup>126)

|                                                                  |                |
|------------------------------------------------------------------|----------------|
| Supply voltage, $V_{CC}$ (see Note 1)                            | 7 V            |
| Input voltage, $V_I$                                             | 5.5 V          |
| Package thermal impedance, $\theta_{JA}$ (see Note 2): N package | 80°C/W         |
| Storage temperature range, $T_{stg}$                             | –65°C to 150°C |

<sup>†</sup> 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.

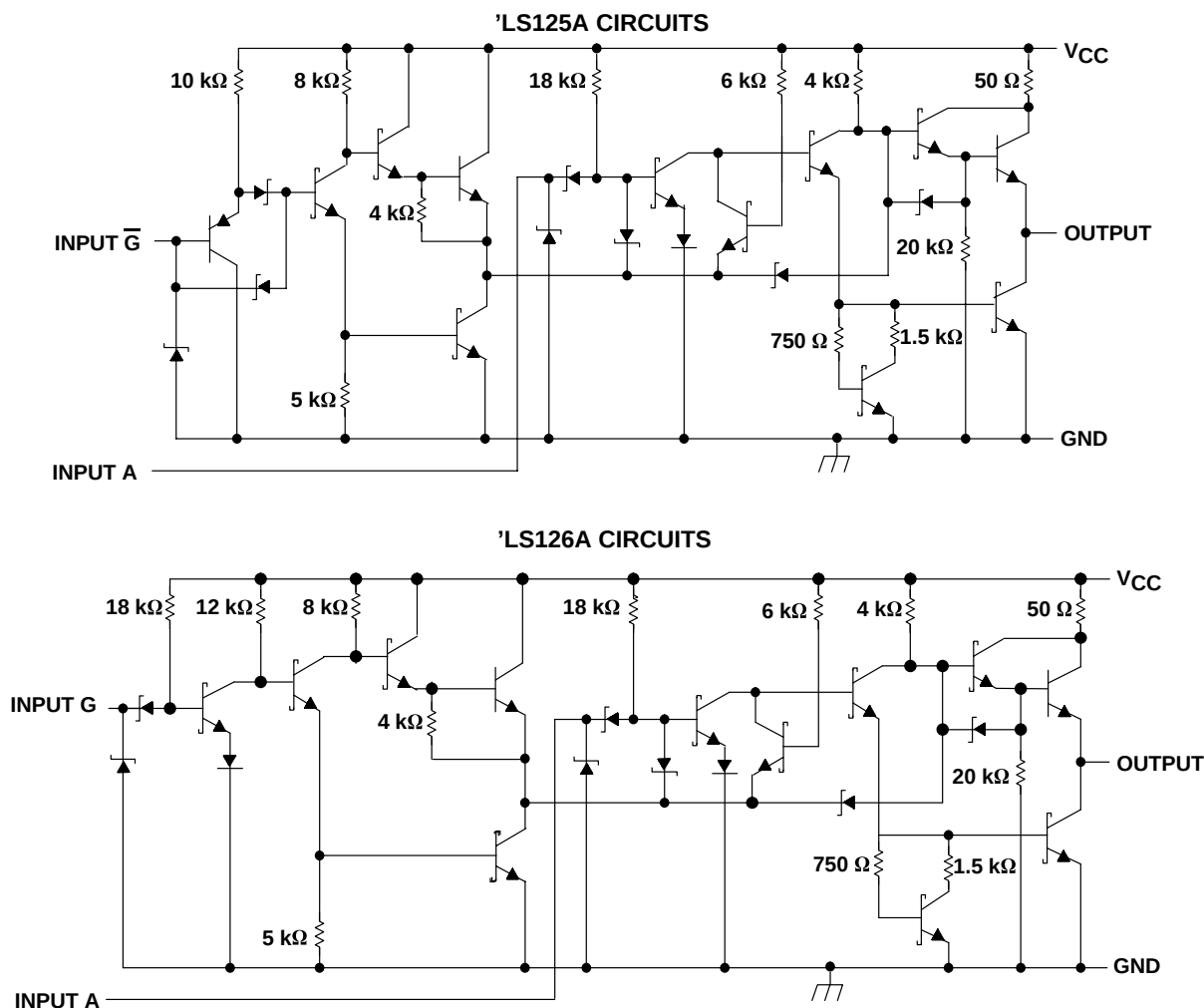
- NOTES: 1. Voltage values are with respect to network ground terminal.  
2. The package thermal impedance is calculated in accordance with JESD 51-7.

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

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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)<sup>†</sup> (**'LS125A and 'LS126A**)

|                                                                  |                |
|------------------------------------------------------------------|----------------|
| Supply voltage, $V_{CC}$ (see Note 1)                            | 7 V            |
| Input voltage, $V_I$                                             | 7 V            |
| Package thermal impedance, $\theta_{JA}$ (see Note 2): D package | 86°C/W         |
| N package                                                        | 80°C/W         |
| NS package                                                       | 76°C/W         |
| Storage temperature range, $T_{stg}$                             | –65°C to 150°C |

<sup>†</sup> 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 thermal impedance is calculated in accordance with JESD 51-7.



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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

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## recommended operating conditions

|                 |                                | SN54125<br>SN54126 |     |     | SN74125<br>SN74126 |     |      | 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      |                    |     | –2  |                    |     | –5.2 | 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†                                                                               |                           | SN54125<br>SN54126 |      |      | SN74125<br>SN74126 |      |      | 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, V <sub>IL</sub> = 0.8 V                          | I <sub>OH</sub> = –2 mA   | 2.4                | 3.3  |      |                    |      |      | V    |
|                   |                                                                                                | I <sub>OH</sub> = –5.2 mA |                    |      |      | 2.4                | 3.1  |      |      |
| V <sub>OL</sub>   | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = 0.8 V, I <sub>OL</sub> = 16 mA |                           |                    |      | 0.4  |                    |      | 0.4  | V    |
| I <sub>OZ</sub>   | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = 0.8 V                          | V <sub>O</sub> = 2.4 V    |                    |      | 40   |                    |      | 40   | µA   |
|                   |                                                                                                | V <sub>O</sub> = 0.4 V    |                    |      | –40  |                    |      | –40  |      |
| I <sub>I</sub>    | V <sub>CC</sub> = MAX, V <sub>I</sub> = 6.5 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                                                                          |                           | –30                |      | –70  | –28                |      | –70  | mA   |
| I <sub>CC</sub>   | V <sub>CC</sub> = MAX (see Note 3)                                                             | '125                      |                    | 32   | 54   |                    | 32   | 54   | mA   |
|                   |                                                                                                | '126                      |                    | 36   | 62   |                    | 36   | 62   |      |

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

## switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C (see Figure 1)

| PARAMETER        | TEST CONDITIONS                                |  | SN54125<br>SN74125 |     |     | SN54126<br>SN74126 |     |     | UNIT |
|------------------|------------------------------------------------|--|--------------------|-----|-----|--------------------|-----|-----|------|
|                  |                                                |  | MIN                | TYP | MAX | MIN                | TYP | MAX |      |
| t <sub>PLH</sub> | R <sub>L</sub> = 400 Ω, C <sub>L</sub> = 50 pF |  |                    | 8   | 13  |                    | 8   | 13  | ns   |
| t <sub>PHL</sub> |                                                |  |                    | 12  | 18  |                    | 12  | 18  |      |
| t <sub>PZH</sub> | R <sub>L</sub> = 400 Ω, C <sub>L</sub> = 50 pF |  |                    | 11  | 17  |                    | 11  | 18  | ns   |
| t <sub>PZL</sub> |                                                |  |                    | 16  | 25  |                    | 16  | 25  |      |
| t <sub>PHZ</sub> | R <sub>L</sub> = 400 Ω, C <sub>L</sub> = 5 pF  |  |                    | 5   | 8   |                    | 10  | 16  | ns   |
| t <sub>PLZ</sub> |                                                |  |                    | 7   | 12  |                    | 12  | 18  |      |



**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**

|                 |                                | SN54LS125A<br>SN54LS126A |     |     | SN74LS125A<br>SN74LS126A |     |      | 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      |                          |     | –1  |                          |     | –2.6 | mA   |
| I <sub>OL</sub> | Low-level output current       |                          |     | 12  |                          |     | 24   | 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†                                 |                                      |                           | SN54LS125A<br>SN54LS126A |      | SN74LS125A<br>SN74LS126A |      | UNIT |      |
|-------------------|--------------------------------------------------|--------------------------------------|---------------------------|--------------------------|------|--------------------------|------|------|------|
|                   |                                                  |                                      |                           | MIN                      | TYP‡ | MAX                      | MIN  |      | TYP‡ |
| 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,<br>V <sub>IH</sub> = 2 V  | V <sub>IL</sub> = 0.7 V,             | I <sub>OH</sub> = −1 mA   | 2.4                      |      |                          |      | V    |      |
|                   |                                                  | V <sub>IL</sub> = 0.8 V              | I <sub>OH</sub> = −2.6 mA |                          |      | 2.4                      |      |      |      |
| V <sub>OL</sub>   | V <sub>CC</sub> = MIN,<br>V <sub>IH</sub> = 2 V  | V <sub>IL</sub> = 0.7 V,             | I <sub>OL</sub> = 12 mA   | 0.25                     | 0.4  |                          |      | V    |      |
|                   |                                                  | V <sub>IL</sub> = 0.8 V,             | I <sub>OL</sub> = 12 mA   |                          |      | 0.25                     | 0.4  |      |      |
|                   |                                                  | V <sub>IL</sub> = 0.8 V,             | I <sub>OL</sub> = 24 mA   |                          |      | 0.35                     | 0.5  |      |      |
| I <sub>OZ</sub>   | V <sub>CC</sub> = MAX,<br>V <sub>IH</sub> = 2 V, | V <sub>IL</sub> = 0.7 V              | V <sub>O</sub> = 2.4 V    | 20                       |      |                          |      | µA   |      |
|                   |                                                  |                                      | V <sub>O</sub> = 0.4 V    | −20                      |      |                          |      |      |      |
|                   |                                                  | V <sub>IL</sub> = 0.8 V              | V <sub>O</sub> = 2.4 V    |                          |      | 20                       |      |      |      |
|                   |                                                  |                                      | V <sub>O</sub> = 0.4 V    |                          |      | −20                      |      |      |      |
| 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,<br>V <sub>I</sub> = 0.4 V | 'LS125A- $\overline{G}$ inputs       |                           |                          | −0.2 |                          | −0.2 |      | mA   |
|                   |                                                  | 'LS125A-A inputs; 'LS126A All inputs |                           |                          | −0.4 |                          | −0.4 |      | mA   |
| I <sub>OS</sub> § | V <sub>CC</sub> = MAX                            |                                      |                           | −40                      | −225 | −40                      | −225 | mA   |      |
| I <sub>CC</sub>   | V <sub>CC</sub> = MAX<br>(see Note 4)            | 'LS125A                              |                           | 11                       | 20   | 11                       | 20   | mA   |      |
|                   |                                                  | 'LS126A                              |                           | 12                       | 22   | 12                       | 22   |      |      |

† 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.

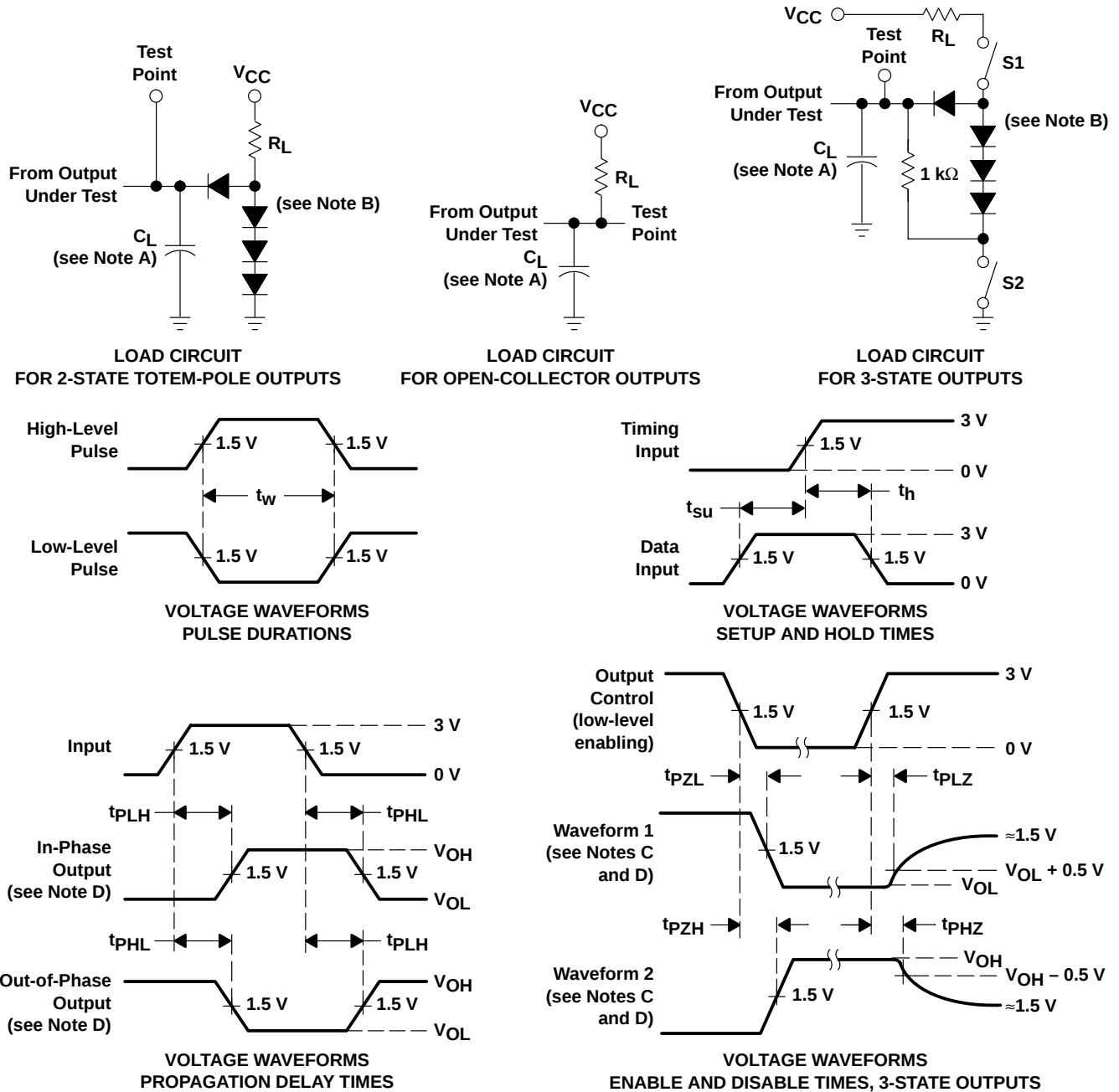
NOTE 4: Data inputs = 0 V; output control = 4.5 V for 'LS125A and 0 V for 'LS126A.

**switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C (see Figure 1)**

| PARAMETER        | TEST CONDITIONS                                |  | SN54LS125A<br>SN74LS125A |     |     | SN54LS126A<br>SN74LS126A |     |     | UNIT |
|------------------|------------------------------------------------|--|--------------------------|-----|-----|--------------------------|-----|-----|------|
|                  |                                                |  | MIN                      | TYP | MAX | MIN                      | TYP | MAX |      |
| t <sub>PLH</sub> | R <sub>L</sub> = 667 Ω, C <sub>L</sub> = 45 pF |  |                          | 9   | 15  |                          | 9   | 15  | ns   |
| t <sub>PHL</sub> |                                                |  |                          | 7   | 18  |                          | 8   | 18  |      |
| t <sub>PZH</sub> | R <sub>L</sub> = 667 Ω, C <sub>L</sub> = 45 pF |  |                          | 12  | 20  |                          | 16  | 25  | ns   |
| t <sub>PZL</sub> |                                                |  |                          | 15  | 25  |                          | 21  | 35  |      |
| t <sub>PHZ</sub> | R <sub>L</sub> = 667 Ω, C <sub>L</sub> = 5 pF  |  |                          |     | 20  |                          |     | 25  | ns   |
| t <sub>PLZ</sub> |                                                |  |                          |     | 20  |                          |     | 25  |      |



**PARAMETER MEASUREMENT INFORMATION  
SERIES 54/74 DEVICES**



- NOTES: A.  $C_L$  includes probe and jig capacitance.  
B. All diodes are 1N3064 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  $t_{PLH}$ ,  $t_{PHL}$ ,  $t_{PHZ}$ , and  $t_{PLZ}$ ; S1 is open and S2 is closed for  $t_{PZH}$ ; S1 is closed and S2 is open for  $t_{PZL}$ .  
E. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1$  MHz,  $Z_O \approx 50 \Omega$ ;  $t_r$  and  $t_f \leq 7$  ns for Series 54/74 devices and  $t_r$  and  $t_f \leq 2.5$  ns for Series 54S/74S devices.  
F. The outputs are measured one at a time with one input transition per measurement.

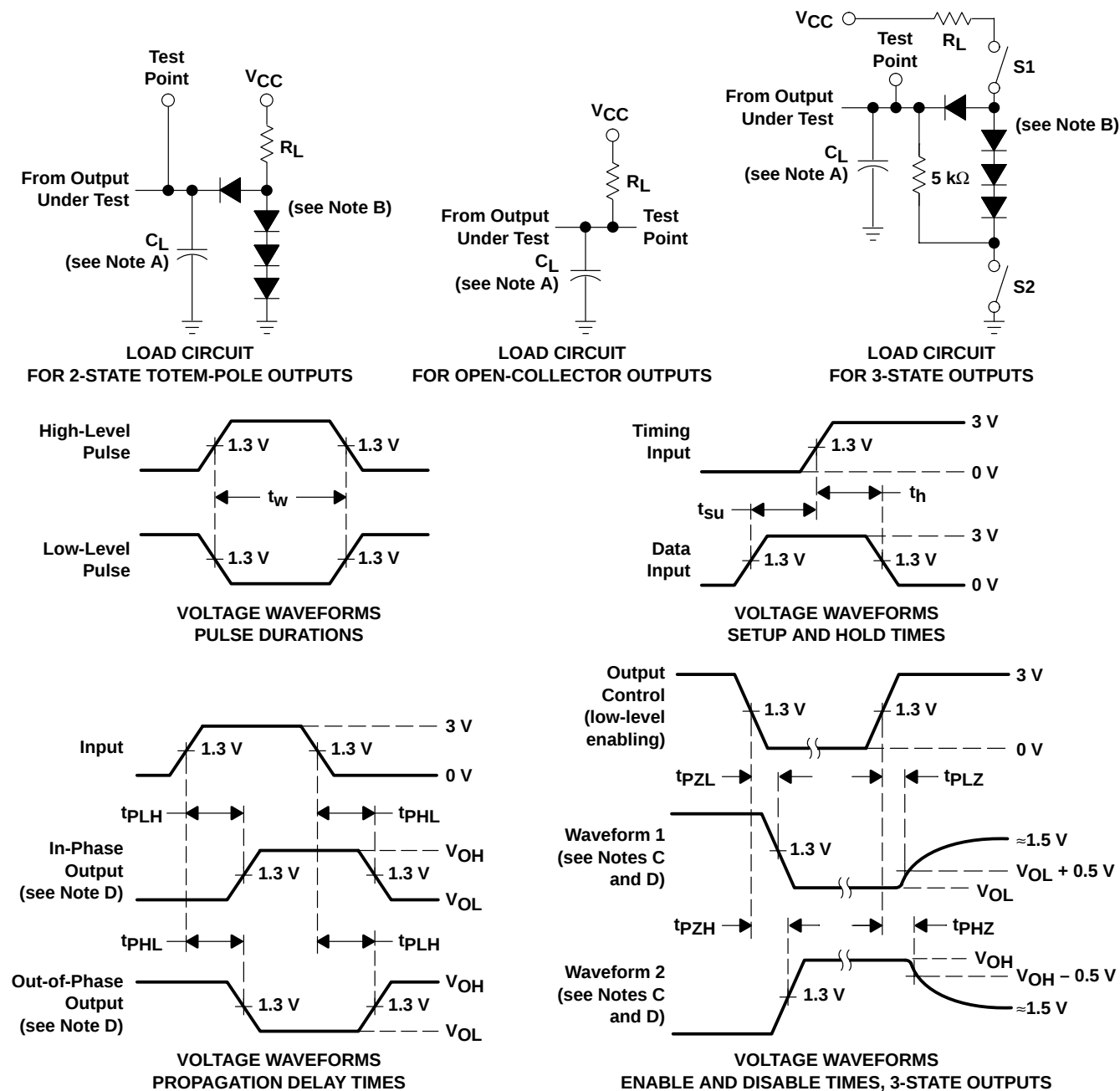
**Figure 1. Load Circuits and Voltage Waveforms**

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

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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 1N3064 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  $t_{PLH}$ ,  $t_{PHL}$ ,  $t_{PHZ}$ , and  $t_{PLZ}$ ; S1 is open and S2 is closed for  $t_{PZH}$ ; S1 is closed and S2 is open for  $t_{PZL}$ .  
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,  $Z_O \approx 50 \Omega$ ,  $t_r \leq 1.5$  ns,  $t_f \leq 2.6$  ns.  
G. The outputs are measured one at a time with one input transition per measurement.

Figure 2. Load Circuits and Voltage Waveforms

**PACKAGING INFORMATION**

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup>    | Lead/<br>Ball Finish | MSL Peak Temp <sup>(3)</sup> | Samples<br>(Requires Login) |
|------------------|-----------------------|--------------|-----------------|------|-------------|----------------------------|----------------------|------------------------------|-----------------------------|
| JM38510/32301B2A | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                        | POST-PLATE           | N / A for Pkg Type           |                             |
| JM38510/32301BCA | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                        | A42                  | N / A for Pkg Type           |                             |
| JM38510/32301BDA | ACTIVE                | CFP          | W               | 14   | 1           | TBD                        | A42                  | N / A for Pkg Type           |                             |
| JM38510/32301SCA | ACTIVE                | CDIP         | J               | 14   | 25          | TBD                        | A42                  | N / A for Pkg Type           |                             |
| JM38510/32301SDA | ACTIVE                | CFP          | W               | 14   | 25          | TBD                        | A42                  | N / A for Pkg Type           |                             |
| M38510/32301B2A  | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                        | POST-PLATE           | N / A for Pkg Type           |                             |
| M38510/32301BCA  | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                        | A42                  | N / A for Pkg Type           |                             |
| M38510/32301BDA  | ACTIVE                | CFP          | W               | 14   | 1           | TBD                        | A42                  | N / A for Pkg Type           |                             |
| M38510/32301SCA  | ACTIVE                | CDIP         | J               | 14   | 25          | TBD                        | A42                  | N / A for Pkg Type           |                             |
| M38510/32301SDA  | ACTIVE                | CFP          | W               | 14   | 25          | TBD                        | A42                  | N / A for Pkg Type           |                             |
| SN54126J         | OBSOLETE              | CDIP         | J               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN54LS125AJ      | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                        | A42                  | N / A for Pkg Type           |                             |
| SN74125N         | OBSOLETE              | PDIP         | N               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN74125N3        | OBSOLETE              | PDIP         | N               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN74126N         | OBSOLETE              | PDIP         | N               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN74LS125AD      | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADBR    | ACTIVE                | SSOP         | DB              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADBRE4  | ACTIVE                | SSOP         | DB              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADBRG4  | ACTIVE                | SSOP         | DB              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADE4    | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADG4    | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADR     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ADRE4   | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& 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/<br>Ball Finish | MSL Peak Temp <sup>(3)</sup> | Samples<br>(Requires Login) |
|------------------|-----------------------|--------------|-----------------|------|-------------|----------------------------|----------------------|------------------------------|-----------------------------|
| SN74LS125ADRG4   | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125AN      | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)             | CU NIPDAU            | N / A for Pkg Type           |                             |
| SN74LS125AN3     | OBSOLETE              | PDIP         | N               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN74LS125ANE4    | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)             | CU NIPDAU            | N / A for Pkg Type           |                             |
| SN74LS125ANSR    | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ANSRE4  | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS125ANSRG4  | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126AD      | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ADE4    | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ADG4    | ACTIVE                | SOIC         | D               | 14   | 50          | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ADR     | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ADRE4   | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ADRG4   | ACTIVE                | SOIC         | D               | 14   | 2500        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126AJ      | OBSOLETE              | CDIP         | J               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SN74LS126AN      | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)             | CU NIPDAU            | N / A for Pkg Type           |                             |
| SN74LS126ANE4    | ACTIVE                | PDIP         | N               | 14   | 25          | Pb-Free (RoHS)             | CU NIPDAU            | N / A for Pkg Type           |                             |
| SN74LS126ANSR    | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ANSRE4  | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SN74LS126ANSRG4  | ACTIVE                | SO           | NS              | 14   | 2000        | Green (RoHS<br>& no Sb/Br) | CU NIPDAU            | Level-1-260C-UNLIM           |                             |
| SNJ54126J        | OBSOLETE              | CDIP         | J               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SNJ54126W        | OBSOLETE              | CFP          | W               | 14   |             | TBD                        | Call TI              | Call TI                      |                             |
| SNJ54LS125AFK    | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                        | POST-PLATE           | N / A for Pkg Type           |                             |

| 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> | Samples (Requires Login) |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|-------------------|------------------------------|--------------------------|
| SNJ54LS125AJ     | ACTIVE                | CDIP         | J               | 14   | 1           | TBD                     | A42               | N / A for Pkg Type           |                          |
| SNJ54LS125AW     | ACTIVE                | CFP          | W               | 14   | 1           | TBD                     | A42               | N / A for Pkg Type           |                          |

<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), Pb-Free (RoHS Exempt), 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.

**Pb-Free (RoHS Exempt):** This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

**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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#### OTHER QUALIFIED VERSIONS OF SN54126, SN54LS125A, SN54LS125A-SP, SN74126, SN74LS125A :

• Catalog: [SN74126](#), [SN74LS125A](#), [SN54LS125A](#)

• Military: [SN54126](#), [SN54LS125A](#)

• Space: [SN54LS125A-SP](#)

NOTE: Qualified Version Definitions:

- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications
- Space - Radiation tolerant, ceramic packaging and qualified for use in Space-based application

**TAPE AND REEL INFORMATION**
**REEL DIMENSIONS**

**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                   |

**TAPE AND REEL INFORMATION**

\*All dimensions are nominal

| Device        | Package Type | Package Drawing | Pins | SPQ  | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74LS125ADBR | SSOP         | DB              | 14   | 2000 | 330.0              | 16.4               | 8.2     | 6.6     | 2.5     | 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            |

## TAPE AND REEL BOX DIMENSIONS



\*All dimensions are nominal

| Device        | Package Type | Package Drawing | Pins | SPQ  | Length (mm) | Width (mm) | Height (mm) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74LS125ADBR | SSOP         | DB              | 14   | 2000 | 367.0       | 367.0      | 38.0        |
| 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        |

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

14 LEADS SHOWN

# CERAMIC DUAL IN-LINE PACKAGE



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



4040083/F 03/03

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

W (R-GDFP-F14)

CERAMIC DUAL FLATPACK



- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package can be hermetically sealed with a ceramic lid using glass frit.
  - Index point is provided on cap for terminal identification only.
  - Falls within MIL STD 1835 GDFP1-F14 and JEDEC MO-092AB

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

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



| NO. OF<br>TERMINALS<br>** | A                |                  | B                |                  |
|---------------------------|------------------|------------------|------------------|------------------|
|                           | MIN              | MAX              | MIN              | MAX              |
| 20                        | 0.342<br>(8,69)  | 0.358<br>(9,09)  | 0.307<br>(7,80)  | 0.358<br>(9,09)  |
| 28                        | 0.442<br>(11,23) | 0.458<br>(11,63) | 0.406<br>(10,31) | 0.458<br>(11,63) |
| 44                        | 0.640<br>(16,26) | 0.660<br>(16,76) | 0.495<br>(12,58) | 0.560<br>(14,22) |
| 52                        | 0.740<br>(18,78) | 0.761<br>(19,32) | 0.495<br>(12,58) | 0.560<br>(14,22) |
| 68                        | 0.938<br>(23,83) | 0.962<br>(24,43) | 0.850<br>(21,6)  | 0.858<br>(21,8)  |
| 84                        | 1.141<br>(28,99) | 1.165<br>(29,59) | 1.047<br>(26,6)  | 1.063<br>(27,0)  |



4040140/D 01/11

- NOTES:
- All linear dimensions are in inches (millimeters).
  - This drawing is subject to change without notice.
  - This package can be hermetically sealed with a metal lid.
  - Falls within JEDEC MS-004

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

16 PINS SHOWN

# PLASTIC DUAL-IN-LINE PACKAGE



| PINS **<br>DIM      | 14               | 16               | 18               | 20               |
|---------------------|------------------|------------------|------------------|------------------|
| A MAX               | 0.775<br>(19,69) | 0.775<br>(19,69) | 0.920<br>(23,37) | 1.060<br>(26,92) |
| A MIN               | 0.745<br>(18,92) | 0.745<br>(18,92) | 0.850<br>(21,59) | 0.940<br>(23,88) |
| MS-001<br>VARIATION | AA               | BB               | AC               | AD               |



4040049/E 12/2002

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).  
 The 20 pin end lead shoulder width is a vendor option, either half or full width.

D (R-PDSO-G14)

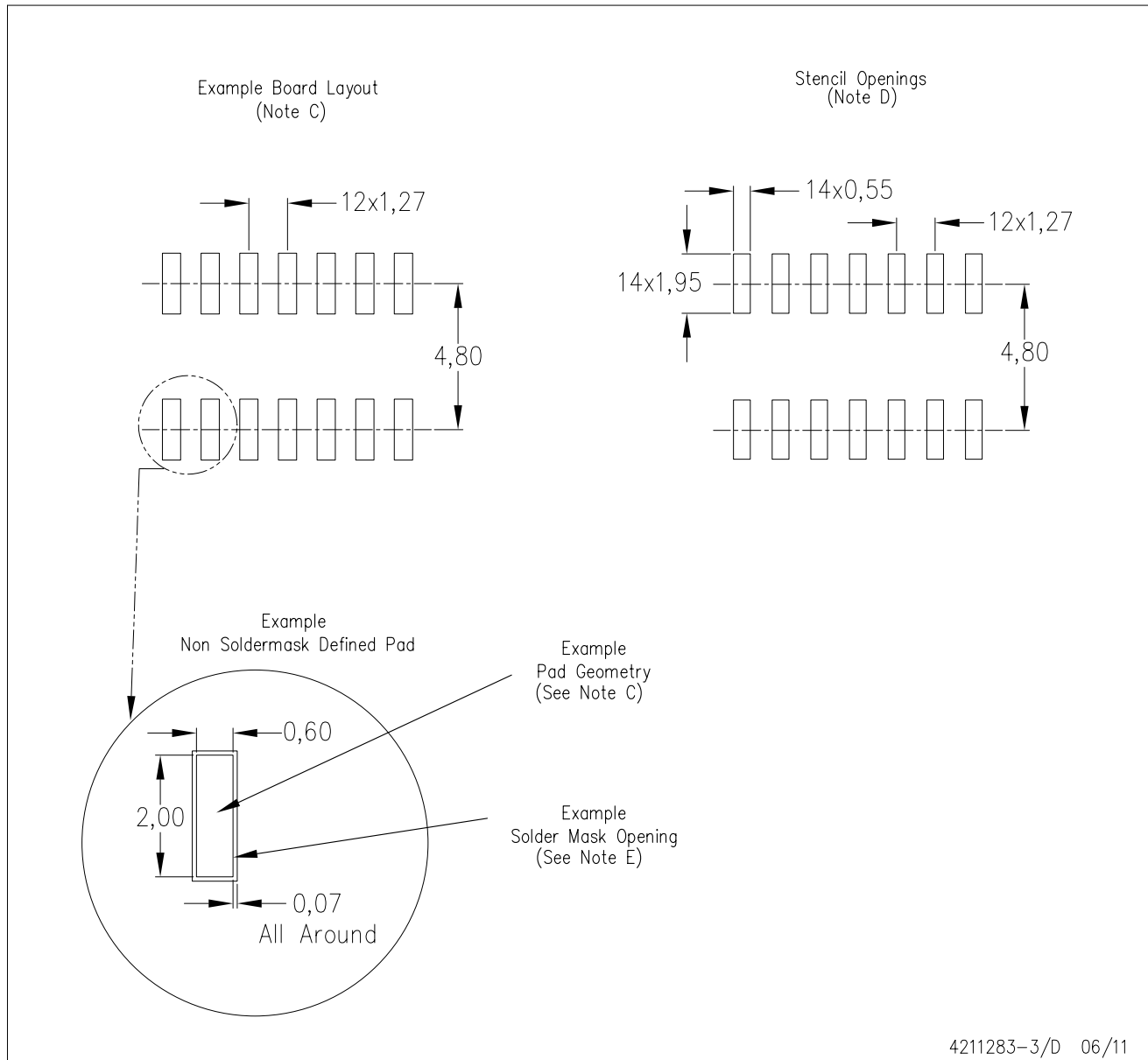
PLASTIC SMALL OUTLINE



4040047-5/M 06/11

D (R-PDSO-G14)

PLASTIC SMALL OUTLINE



- 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.

# 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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### Applications

|                               |                                                                                          |
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