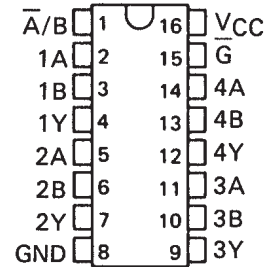


# SN54LS257B, SN54LS258B, SN54S257, SN54S258 SN74LS257B, SN74LS258B, SN74S257, SN74S258 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

- Three-State Outputs Interface Directly with System Bus
- 'LS257B and 'LS258B Offer Three Times the Sink-Current Capability of the Original 'LS257 and 'LS258
- Same Pin Assignments as SN54LS157, SN74LS157, SN54S157, SN74S157, and SN54LS158, SN74LS158, SN54S158, SN74S158
- Provides Bus Interface from Multiple Sources in High-Performance Systems

SN54LS257B, SN54S257,  
SN54LS258B, SN54S258 . . . J OR W PACKAGE  
SN74LS257B, SN74S257,  
SN74LS258B, SN74S258 . . . D OR N PACKAGE  
(TOP VIEW)



|         | AVERAGE PROPAGATION<br>DELAY FROM<br>DATA INPUT | TYPICAL<br>POWER<br>DISSIPATION† |
|---------|-------------------------------------------------|----------------------------------|
| 'LS257B | 9 ns                                            | 55 mW                            |
| 'LS258B | 9 ns                                            | 55 mW                            |
| 'S257   | 4.8 ns                                          | 320 mW                           |
| 'S258   | 4 ns                                            | 280 mW                           |

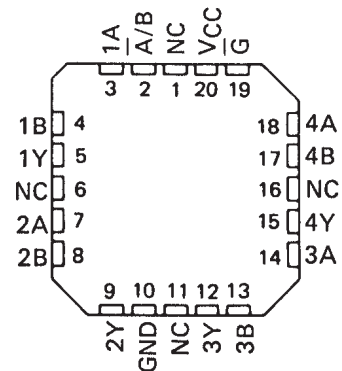
† Off state (worst case)

## description

These devices are designed to multiplex signals from four-bit data sources to four-output data lines in bus-organized systems. The 3-state outputs will not load the data lines when the output control pin ( $\bar{G}$ ) is at a high-logic level.

Series 54LS and 54S are characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ ; Series 74LS and 74S are characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

SN54LS257B, SN54S257,  
SN54LS258B, SN54S258 . . . FK PACKAGE  
(TOP VIEW)



NC-No internal connection.

FUNCTION TABLE

| INPUTS         |        |   |   | OUTPUT Y         |                  |
|----------------|--------|---|---|------------------|------------------|
| OUTPUT CONTROL | SELECT | A | B | 'LS257B<br>'S257 | 'LS258B<br>'S258 |
| H              | X      | X | X | Z                | Z                |
| L              | L      | L | X | L                | H                |
| L              | L      | H | X | H                | L                |
| L              | H      | X | L | L                | H                |
| L              | H      | X | H | H                | L                |

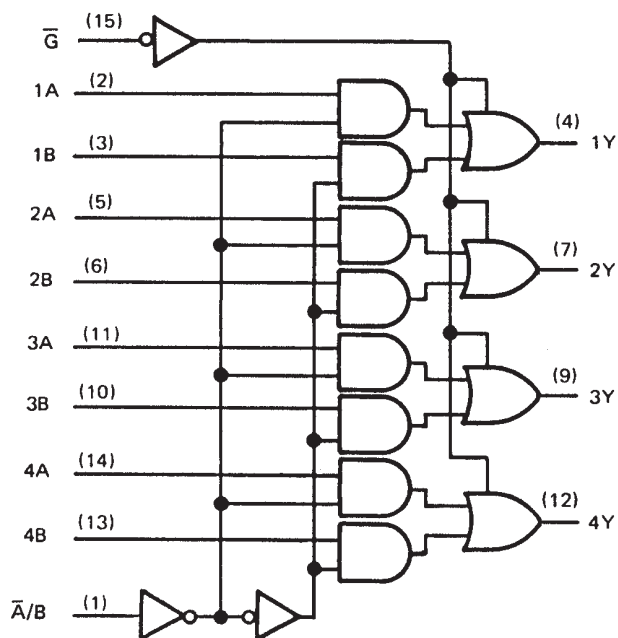
H = high level, L = low level, X = irrelevant,  
Z = high impedance (off)

SN54LS257B, SN54LS258B, SN54S257, SN54S258  
 SN74LS257B, SN74LS258B, SN74S257, SN74S258  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS**

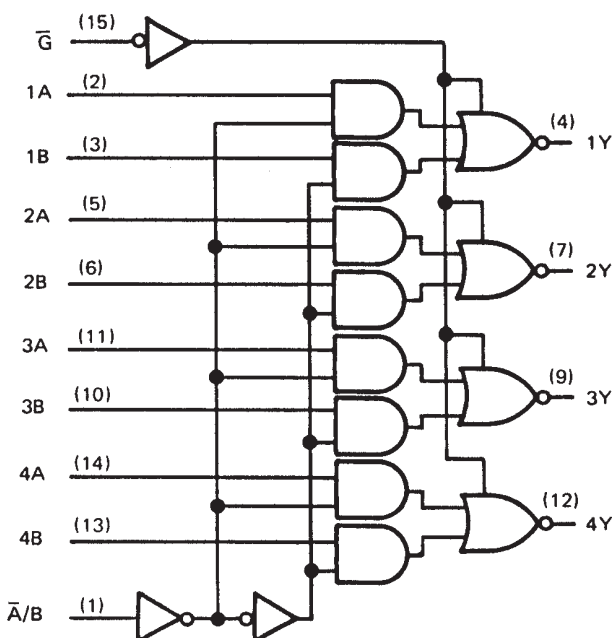
SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

**logic diagrams (positive logic)**

'LS257B, 'S257

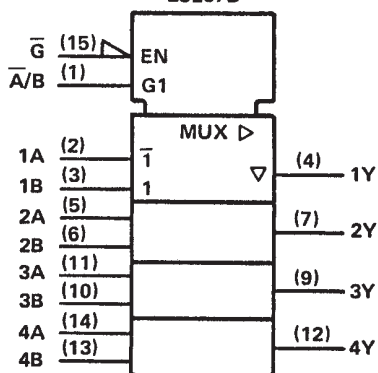


'LS258B, 'S258

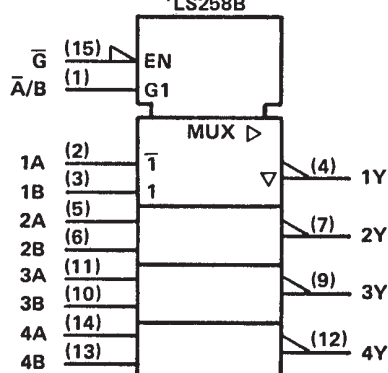


**logic symbols†**

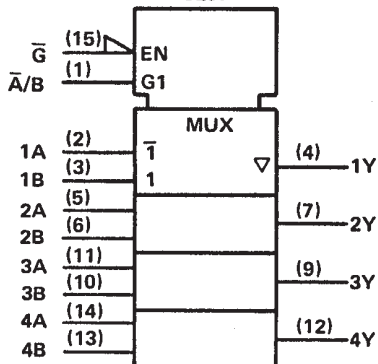
'LS257B



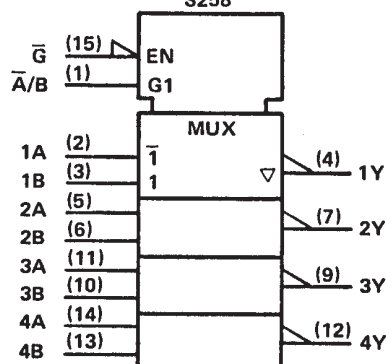
'LS258B



'S257



'S258

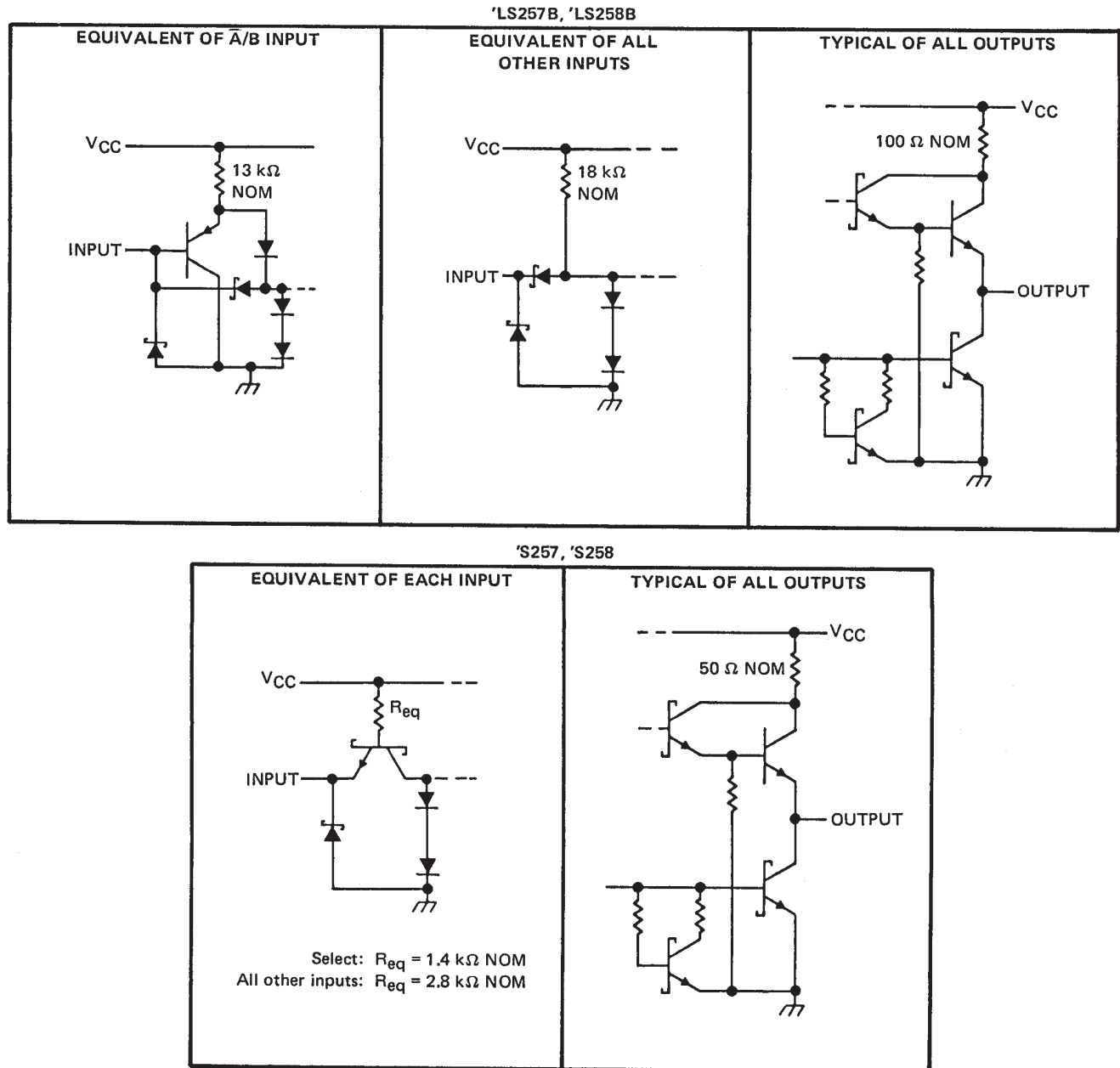


†These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.  
 Pin numbers shown are for D, J, N, and W packages.

SN54LS257B, SN54LS258B, SN54S257, SN54S258  
SN74LS257B, SN74LS258B, SN74S257, SN74S258  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS**

SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

schematics of inputs and outputs



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

|                                                                      |                                                |
|----------------------------------------------------------------------|------------------------------------------------|
| Supply voltage, $V_{CC}$ (see Note 1) .....                          | 7 V                                            |
| Input voltage: 'LS257B, 'LS258B Circuits .....                       | 7 V                                            |
| 'S257, 'S258 Circuits .....                                          | 5.5 V                                          |
| Off-state output voltage .....                                       | 5.5 V                                          |
| Operating free-air temperature range: SN54LS', SN54S' Circuits ..... | $-55^{\circ}\text{C}$ to $125^{\circ}\text{C}$ |
| SN74LS', SN74S' Circuits .....                                       | $0^{\circ}\text{C}$ to $70^{\circ}\text{C}$    |
| Storage temperature range .....                                      | $-65^{\circ}\text{C}$ to $150^{\circ}\text{C}$ |

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

**SN54LS257B, SN54LS258B, SN54S257, SN54S258  
SN74LS257B, SN74LS258B, SN74S257, SN74S258  
QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS**

SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

**recommended operating conditions**

|                                               | SN54LS' |     |     | SN74LS' |     |       | 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†                                                                             | SN54LS' |       |       | SN74LS' |       |       | UNIT |
|-------------------|------------------|----------------------------------------------------------------------------------------------|---------|-------|-------|---------|-------|-------|------|
|                   |                  |                                                                                              | MIN     | TYP‡  | MAX   | MIN     | TYP‡  | MAX   |      |
| V <sub>IK</sub>   |                  | V <sub>CC</sub> = MIN, I <sub>I</sub> = – 18 mA                                              |         |       | – 1.5 |         |       | – 1.5 | V    |
| V <sub>OH</sub>   |                  | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = MAX, I <sub>OH</sub> = MAX   | 2.4     | 3.4   |       | 2.4     | 3.1   |       | V    |
| V <sub>OL</sub>   |                  | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = MAX, I <sub>OL</sub> = 12 mA | 0.25    | 0.4   |       | 0.25    | 0.4   |       | V    |
|                   |                  | I <sub>OL</sub> = 24 mA                                                                      |         |       |       | 0.35    | 0.5   |       |      |
| I <sub>OZH</sub>  |                  | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>O</sub> = 2.7 V                         |         | 20    |       |         | 20    |       | µA   |
| I <sub>OZL</sub>  |                  | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>O</sub> = 0.4 V                         |         | – 20  |       |         | – 20  |       | µA   |
| I <sub>I</sub>    |                  | V <sub>CC</sub> = MAX, V <sub>I</sub> = 7 V                                                  |         | 0.1   |       |         | 0.1   |       | mA   |
| I <sub>IH</sub>   |                  | V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.7 V                                                |         | 20    |       |         | 20    |       | µA   |
| I <sub>IL</sub>   |                  | V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.4 V                                                |         | – 0.4 |       |         | – 0.4 |       | mA   |
| I <sub>OS</sub> § |                  | V <sub>CC</sub> = MAX,                                                                       | – 30    |       | – 130 | – 30    |       | – 130 | mA   |
| I <sub>CC</sub>   | All outputs high | V <sub>CC</sub> = MAX, See Note 2                                                            | 'LS257B | 8     | 12    | 'LS258B | 8     | 12    | mA   |
|                   | All outputs low  |                                                                                              |         | 12    | 18    |         | 12    | 18    |      |
|                   | All outputs off  |                                                                                              |         | 13    | 19    |         | 13    | 19    |      |
|                   | All outputs high |                                                                                              | 'LS258B | 6     | 9     |         | 6     | 9     |      |
|                   | All outputs low  |                                                                                              |         | 10    | 15    |         | 10    | 15    |      |
|                   | All outputs off  |                                                                                              |         | 11    | 16    |         | 11    | 16    |      |

† 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 duration of the short-circuit should not exceed one second.

NOTE 2: I<sub>CC</sub> is measured with all outputs open and all possible inputs grounded while achieving the stated output conditions.

**switching characteristics, V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C, R<sub>L</sub> = 667 Ω**

| PARAMETER <sup>1</sup> | FROM<br>(INPUT)   | TO<br>(OUTPUT) | TEST CONDITIONS                         | 'LS257B |     |     | 'LS258B |     |     | UNIT |
|------------------------|-------------------|----------------|-----------------------------------------|---------|-----|-----|---------|-----|-----|------|
|                        |                   |                |                                         | MIN     | TYP | MAX | MIN     | TYP | MAX |      |
| t <sub>PLH</sub>       | Data              | Any            | C <sub>L</sub> = 45 pF,      See Note 3 | 8       | 13  |     | 7       | 12  | ns  |      |
| t <sub>PHL</sub>       |                   |                |                                         | 10      | 15  |     | 11      | 17  |     |      |
| t <sub>PLH</sub>       | Select            | Any            |                                         | 16      | 21  |     | 14      | 21  | ns  |      |
| t <sub>PHL</sub>       |                   |                |                                         | 17      | 24  |     | 19      | 24  |     |      |
| t <sub>PZH</sub>       | Output<br>Control | Any            |                                         | 15      | 30  |     | 15      | 30  | ns  |      |
| t <sub>PZL</sub>       |                   |                |                                         | 19      | 30  |     | 20      | 30  |     |      |
| t <sub>PHZ</sub>       | Output<br>Control | Any            | C <sub>L</sub> = 5 pF,      See Note 3  | 18      | 30  |     | 18      | 30  | ns  |      |
| t <sub>PLZ</sub>       |                   |                | 16                                      | 25      |     | 16  | 25      |     |     |      |

¶ t<sub>PLH</sub> = propagation delay time, low-to-high-level output

t<sub>PHL</sub> = propagation delay time, high-to-low-level output

t<sub>PZH</sub> = output enable time to high level

t<sub>PZL</sub> = output enable time to low level

t<sub>PHZ</sub> = output disable time from high level

t<sub>PLZ</sub> = output disable time from low level

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



SN54LS257B, SN54LS258B, SN54S257, SN54S258  
SN74LS257B, SN74LS258B, SN74S257, SN74S258  
**QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS**

SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

**recommended operating conditions**

|                                       | SN54S' |     |     | SN74S' |     |      | UNIT |
|---------------------------------------|--------|-----|-----|--------|-----|------|------|
|                                       | MIN    | NOM | MAX | MIN    | NOM | MAX  |      |
| Supply voltage, $V_{CC}$              | 4.5    | 5   | 5.5 | 4.75   | 5   | 5.25 | V    |
| High-level output current, $I_{OH}$   |        |     | -2  |        |     | -6.5 | mA   |
| Low-level output current, $I_{OL}$    |        |     | 20  |        |     | 20   | mA   |
| Operating free-air temperature, $T_A$ | -55    |     | 125 | 0      |     | 70   | °C   |

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

| PARAMETER        |                                                      |                  | TEST CONDITIONS†                                                                               |        | 'S257 |      |     | 'S258 |      |     | UNIT |
|------------------|------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------|--------|-------|------|-----|-------|------|-----|------|
|                  |                                                      |                  |                                                                                                |        | MIN   | TYP‡ | MAX | MIN   | TYP‡ | MAX |      |
| V <sub>IH</sub>  | High-level input voltage                             |                  |                                                                                                |        | 2     |      |     | 2     |      |     | V    |
| V <sub>IL</sub>  | Low-level input voltage                              |                  |                                                                                                |        | 0.8   |      |     | 0.8   |      |     | V    |
| V <sub>IK</sub>  | Input clamp voltage                                  |                  | V <sub>CC</sub> = MIN, I <sub>I</sub> = −18 mA                                                 |        | −1.2  |      |     | −1.2  |      |     | V    |
| V <sub>OH</sub>  | High-level output voltage                            |                  | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = 0.8 V, I <sub>OH</sub> = −1 mA | SN74S' | 2.7   |      |     | 2.7   |      |     | V    |
|                  |                                                      |                  | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = 0.8 V, I <sub>OH</sub> = MAX   | SN54S' | 2.4   | 3.4  | 2.4 | 3.4   |      |     |      |
|                  |                                                      |                  |                                                                                                | SN74S' | 2.4   | 3.2  | 2.4 | 3.2   |      |     |      |
| V <sub>OL</sub>  | Low-level output voltage                             |                  | V <sub>CC</sub> = MIN, V <sub>IH</sub> = 2 V, V <sub>IL</sub> = 0.8 V, I <sub>OL</sub> = 20 mA |        | 0.5   |      |     | 0.5   |      |     | V    |
| I <sub>OZH</sub> | Off-state output current, high-level voltage applied |                  | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>O</sub> = 2.4 V                           |        | 50    |      |     | 50    |      |     | μA   |
| I <sub>OZL</sub> | Off-state output current, low-level voltage applied  |                  | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>O</sub> = 0.5 V                           |        | −50   |      |     | −50   |      |     | μA   |
| I <sub>I</sub>   | Input current at maximum input voltage               |                  | V <sub>CC</sub> = MAX, V <sub>I</sub> = 5.5 V                                                  |        | 1     |      |     | 1     |      |     | mA   |
| I <sub>IH</sub>  | High-level input current                             | S input          | V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.7 V                                                  |        | 100   |      |     | 100   |      |     | μA   |
|                  |                                                      | Any other        |                                                                                                |        | 50    |      |     | 50    |      |     |      |
| I <sub>IL</sub>  | Low-level input current                              | S input          | V <sub>CC</sub> = MAX V <sub>I</sub> = 0.5 V                                                   |        | −4    |      |     | −4    |      |     | mA   |
|                  |                                                      | Any other        |                                                                                                |        | −2    |      |     | −2    |      |     |      |
| I <sub>OS</sub>  | Short-circuit output current §                       |                  | V <sub>CC</sub> = MAX                                                                          |        | −40   | −100 |     | −40   | −100 |     | mA   |
| I <sub>CC</sub>  | Supply current                                       | All outputs high | V <sub>CC</sub> = MAX, See Note 2                                                              |        | 44    | 68   |     | 36    | 56   |     | mA   |
|                  |                                                      | All outputs low  |                                                                                                |        | 60    | 93   |     | 52    | 81   |     |      |
|                  |                                                      | All outputs off  |                                                                                                |        | 64    | 99   |     | 56    | 87   |     |      |

† 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 and duration of the short-circuit should not exceed one second.

NOTE 2:  $I_{CC}$  is measured with all outputs open and all possible inputs grounded while achieving the stated output conditions.

**switching characteristics,  $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}, R_L = 280 \Omega$**

| PARAMETER† | FROM<br>(INPUT) | TO<br>(OUTPUT) | TEST<br>CONDITIONS                    | 'S257 |      |     | 'S258 |      |     | UNIT |
|------------|-----------------|----------------|---------------------------------------|-------|------|-----|-------|------|-----|------|
|            |                 |                |                                       | MIN   | TYP  | MAX | MIN   | TYP  | MAX |      |
| tPLH       | Data            | Any            | C <sub>L</sub> = 15 pF,<br>See Note 3 | 5     | 7.5  |     | 4     | 6    | ns  |      |
| tPHL       |                 |                |                                       | 4.5   | 6.5  |     | 4     | 6    |     |      |
| tPLH       | Select          | Any            |                                       | 8.5   | 15   |     | 8     | 12   | ns  |      |
| tPHL       |                 |                |                                       | 8.5   | 15   |     | 7.5   | 12   |     |      |
| tPZH       | Output          | Any            |                                       | 13    | 19.5 |     | 13    | 19.5 | ns  |      |
| tPZL       | Control         |                |                                       | 14    | 21   |     | 14    | 21   |     |      |
| tPHZ       | Output          | Any            | C <sub>L</sub> = 5 pF,<br>See Note 3  | 5.5   | 8.5  |     | 5.5   | 8.5  | ns  |      |
| tPLZ       | Control         |                | 9                                     | 14    |      | 9   | 14    |      |     |      |

¶  $f_{\text{max}}$  = Maximum clock frequency

$t_{PLH}$  = propagation delay time, low-to-high-level output

$t_{PHL}$  = propagation delay time, high-to-low-level output

$t_{PZH}$  = output enable time to high level

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

$t_{PZL}$  = output enable time to low level

$t_{PHZ}$  = output disable time from high level

$t_{PLZ}$  = output disable time from low level



**PACKAGING INFORMATION**

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| 5962-7603701VEA  | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 5962-7603701VFA  | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 5962-7603701VFA  | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603701EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603701EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603701FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603701FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 76038012A        | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 76038012A        | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603801EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603801EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603801FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 7603801FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 8002301EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 8002301EA        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 8002301FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| 8002301FA        | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/07906BEA | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/07906BEA | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/07906BFA | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/07906BFA | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906B2A | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906B2A | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906BEA | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906BEA | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906BFA | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| JM38510/30906BFA | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54LS257BJ      | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54LS257BJ      | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54LS258BJ      | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54LS258BJ      | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54S257J        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54S257J        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54S258J        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN54S258J        | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SN74LS257BD      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BD      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BDE4    | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BDE4    | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| SN74LS257BDR     | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BDR     | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BDRE4   | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BDRE4   | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BN      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS257BN      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS257BN3     | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74LS257BN3     | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74LS257BNE4    | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS257BNE4    | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS257BNSR    | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BNSR    | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BNSRE4  | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS257BNSRE4  | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BD      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BD      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDE4    | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDE4    | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDR     | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDR     | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDRE4   | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BDRE4   | ACTIVE                | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BN      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS258BN      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS258BN3     | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74LS258BN3     | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74LS258BNE4    | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74LS258BNE4    | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free                 | CU NIPDAU        | Level-NC-NC-NC               |

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| (RoHS)           |                       |              |                 |      |             |                         |                  |                              |
| SN74LS258BNSR    | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BNSR    | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BNSRE4  | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74LS258BNSRE4  | ACTIVE                | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74S257D        | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74S257D        | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74S257DE4      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74S257DE4      | ACTIVE                | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74S257N        | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74S257N        | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74S257N3       | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S257N3       | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S257NE4      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74S257NE4      | ACTIVE                | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU        | Level-NC-NC-NC               |
| SN74S258DR       | OBSOLETE              | SOIC         | D               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S258DR       | OBSOLETE              | SOIC         | D               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S258N        | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S258N        | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S258N3       | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SN74S258N3       | OBSOLETE              | PDIP         | N               | 16   |             | TBD                     | Call TI          | Call TI                      |
| SNJ54LS257BFK    | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS257BFK    | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS257BJ     | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS257BJ     | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS257BW     | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS257BW     | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BFK    | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BFK    | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BJ     | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BJ     | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BW     | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54LS258BW     | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S257FK      | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S257FK      | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| SNJ54S257J       | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S257J       | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S257W       | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S257W       | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258FK      | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258FK      | ACTIVE                | LCCC         | FK              | 20   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258J       | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258J       | ACTIVE                | CDIP         | J               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258W       | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |
| SNJ54S258W       | ACTIVE                | CFP          | W               | 16   | 1           | TBD                     | Call TI          | Level-NC-NC-NC               |

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

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

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

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

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

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

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

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

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

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

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

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

14 LEADS SHOWN

# CERAMIC DUAL IN-LINE PACKAGE



| 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)        |

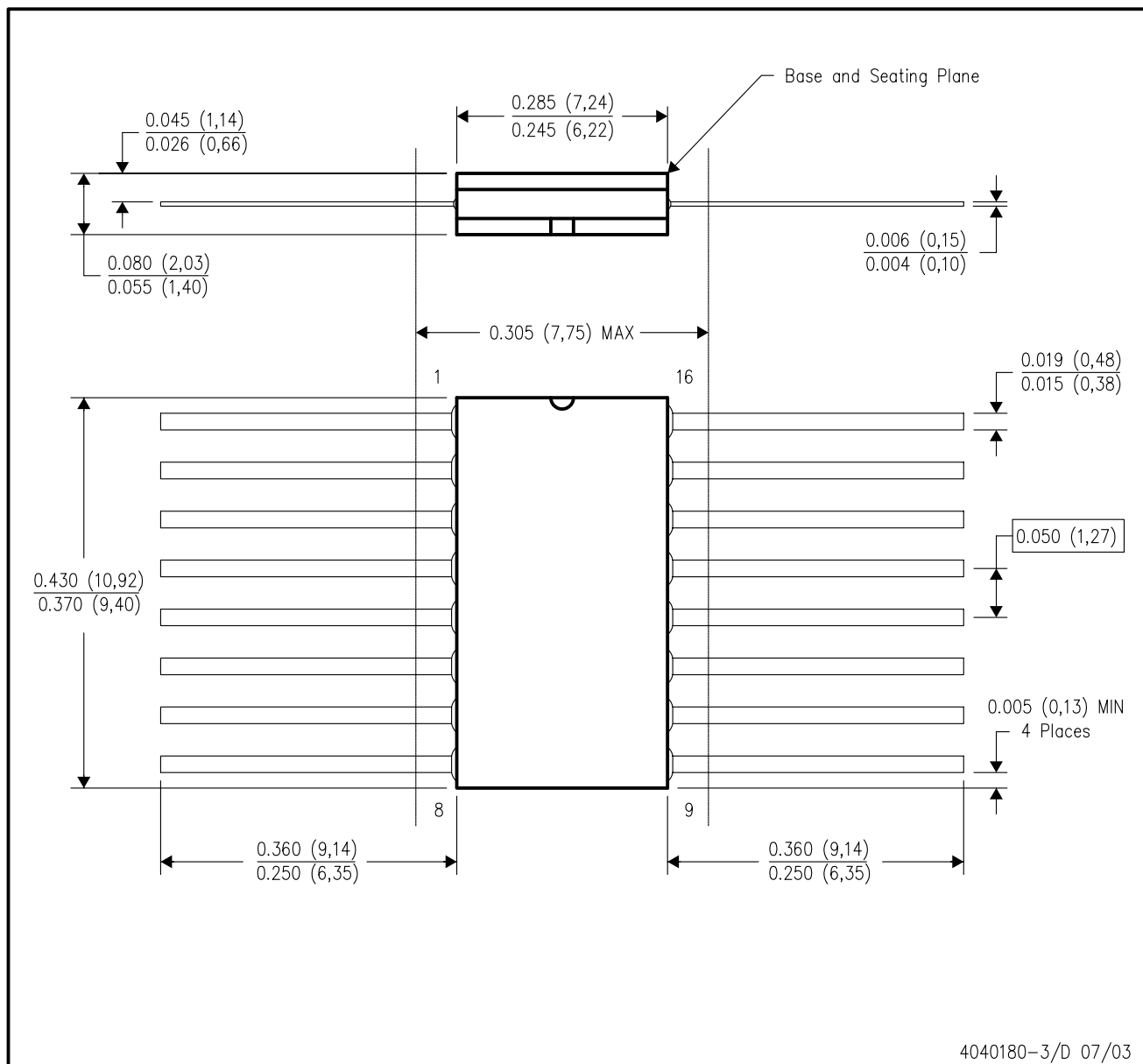


4040083/F 03/03

- 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-F16)

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-F16 and JEDEC MO-092AC

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

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



- 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.
  - The terminals are gold plated.
  - Falls within JEDEC MS-004

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

16 PINS SHOWN

## PLASTIC DUAL-IN-LINE PACKAGE



| PINS **             | 14               | 16               | 18               | 20               |
|---------------------|------------------|------------------|------------------|------------------|
| DIM                 |                  |                  |                  |                  |
| 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-G16)

## PLASTIC SMALL-OUTLINE PACKAGE



4040047-4/F 07/2004

## NOTES:

- All linear dimensions are in inches (millimeters).
- This drawing is subject to change without notice.
- Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
- Falls within JEDEC MS-012 variation AC.

# 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.

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