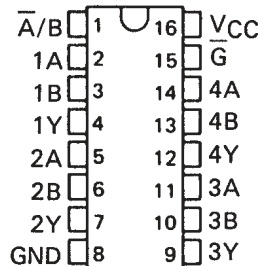


# SN54LS257B, SN54LS258B, SN54S257, SN54S258 SN74LS257B, SN74LS258B, SN74S257, SN74S258 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

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                           |

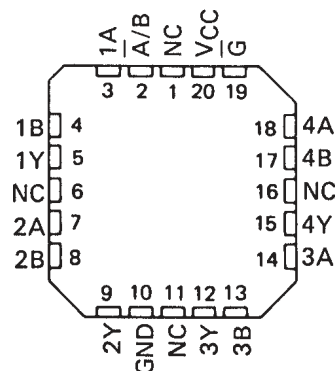
† Off state (worst case)

## 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

| OUTPUT CONTROL | INPUTS |   | OUTPUT Y |                  |                  |
|----------------|--------|---|----------|------------------|------------------|
|                | 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                |

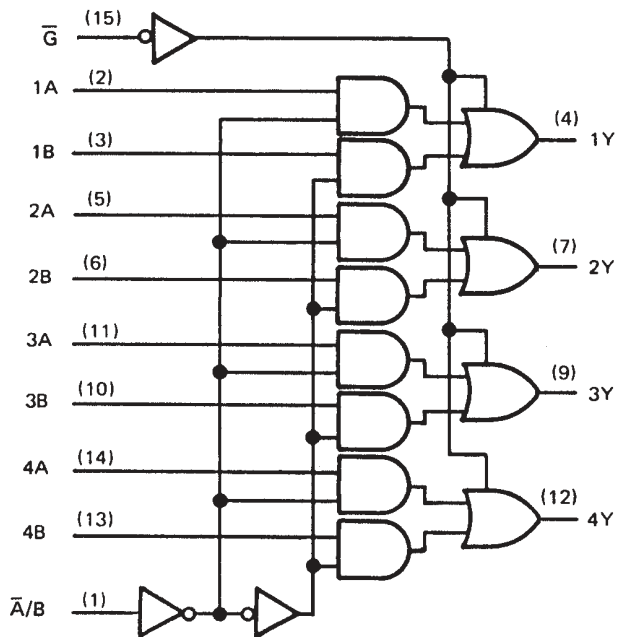
H = high level, L = low level, X = irrelevant,  
Z = high impedance (off)

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

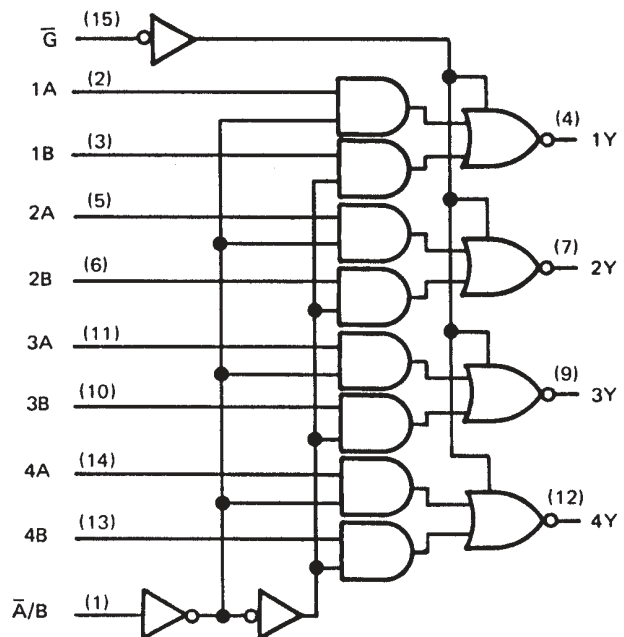
SDLS148 – OCTOBER 1976 – REVISED MARCH 1988

**logic diagrams (positive logic)**

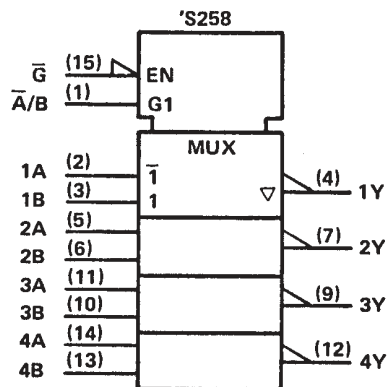
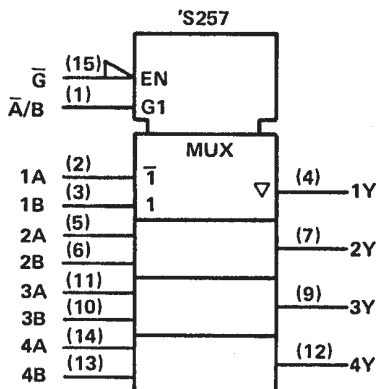
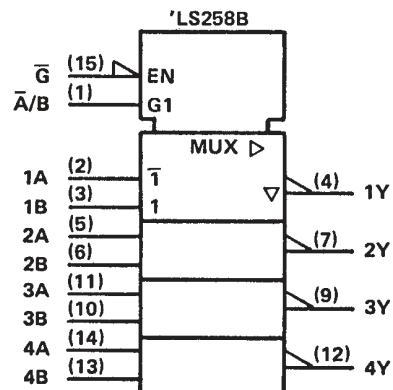
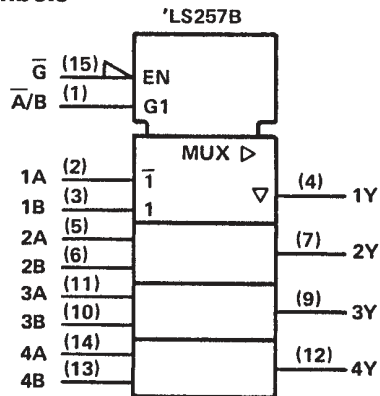
'LS257B, 'S257



'LS258B, 'S258



**logic symbols†**



†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

**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     |      |      | V    |    |
|                   |  |                                   |      |         |         | 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      |      |      | μA   |    |
| I <sub>OZL</sub>  | V <sub>CC</sub> = MAX, V <sub>IH</sub> = 2 V, V <sub>O</sub> = 0.4 V                         |                                   |      |         | -20     |      |      | μA   |    |
| I <sub>I</sub>    | V <sub>CC</sub> = MAX, V <sub>I</sub> = 7 V  |                                   |      |         | 0.1     |      |      | mA   |    |
| I <sub>IH</sub>   | V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.7 V  |                                   |      |         | 20      |      |      | μA   |    |
| I <sub>IL</sub>   | V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.4 V  |                                   |      |         | -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   | 8    | 12   | mA |
|                   | All outputs low  |                                   |      |         | 12      | 18   | 12   | 18   |    |
|                   | All outputs off  |                                   |      |         | 13      | 19   | 13   | 19   |    |
|                   | All outputs high   |                                   |      |         | 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¶       | FROM (INPUT)   | TO (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      |     |     |      |
| t <sub>PHL</sub> |                |             |                                    | 17      | 24  | 19  | 24      |     |     |      |
| t <sub>pZH</sub> | Output Control | Any         |                                    | 15      | 30  | 15  | 30      |     | ns  |      |
| t <sub>pZL</sub> |                |             |                                    | 19      | 30  | 20  | 30      |     |     |      |
| t <sub>PHZ</sub> | Output 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 |      |
| $V_{IH}$  | High-level input voltage                             |   | 2        |      |     | 2        |      |     | V    |
| $V_{IL}$  | Low-level input voltage                              |   | 0.8      |      |     | 0.8      |      |     | V    |
| $V_{IK}$  | Input clamp voltage                                  | $V_{CC} = \text{MIN}, I_I = -18 \text{ mA}$   | -1.2     |      |     | -1.2     |      |     | V    |
| $V_{OH}$  | High-level output voltage                            | $V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OH} = -1 \text{ mA}$ | SN74S'   |      |     | 2.7      |      |     | V    |
|           |  | $V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OH} = \text{MAX}$    | SN54S'   |      |     | 2.4 3.4  |      |     |      |
|           |  |   | SN74S'   |      |     | 2.4 3.2  |      |     |      |
| $V_{OL}$  | Low-level output voltage                             | $V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OL} = 20 \text{ mA}$ | 0.5      |      |     | 0.5      |      |     | V    |
| $I_{OZH}$ | Off-state output current, high-level voltage applied | $V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_O = 2.4 \text{ V}$                            | 50       |      |     | 50       |      |     | μA   |
| $I_{OZL}$ | Off-state output current, low-level voltage applied  | $V_{CC} = \text{MAX}, V_{IH} = 2 \text{ V}, V_O = 0.5 \text{ V}$                            | -50      |      |     | -50      |      |     | μA   |
| $I_I$     | Input current at maximum input voltage               | $V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$  | 1        |      |     | 1        |      |     | mA   |
| $I_{IH}$  | High-level input current                             | S input   | 100      |      |     | 100      |      |     | μA   |
|           |  | Any other   | 50       |      |     | 50       |      |     |      |
| $I_{IL}$  | Low-level input current                              | S input   | -4       |      |     | -4       |      |     | mA   |
|           |  | Any other   | -2       |      |     | -2       |      |     |      |
| $I_{OS}$  | Short-circuit output current§                        | $V_{CC} = \text{MAX}$   | -40 -100 |      |     | -40 -100 |      |     | mA   |
| $I_{CC}$  | Supply current                                       | All outputs high  | 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 (INPUT) | TO (OUTPUT) | TEST CONDITIONS                      | 'S257   |     |         | 'S258   |     |     | UNIT |
|------------|--------------|-------------|--------------------------------------|---------|-----|---------|---------|-----|-----|------|
|            |              |             |                                      | MIN     | TYP | MAX     | MIN     | TYP | MAX |      |
| $t_{PLH}$  | Data         | Any         | $C_L = 15 \text{ pF},$<br>See Note 3 | 5 7.5   |     |         | 4 6     |     |     | ns   |
| $t_{PHL}$  |              |             |                                      | 4.5 6.5 |     |         | 4 6     |     |     |      |
| $t_{PLH}$  | Select       | Any         |                                      | 8.5 15  |     |         | 8 12    |     |     | ns   |
| $t_{PHL}$  |              |             |                                      | 8.5 15  |     |         | 7.5 12  |     |     |      |
| $t_{PZH}$  | Output       | Any         |                                      | 13 19.5 |     |         | 13 19.5 |     |     | ns   |
| $t_{PZL}$  | Control      |             |                                      | 14 21   |     |         | 14 21   |     |     |      |
| $t_{PHZ}$  | Output       | Any         | 5.5 8.5                              |         |     | 5.5 8.5 |         |     | ns  |      |
| $t_{PLZ}$  | 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

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

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

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

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



**PACKAGING INFORMATION**

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)  | Lead finish/<br>Ball material<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5)   | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|------------------|--------------------------------------|----------------------|--------------|---------------------------|-------------------------|
| 7603701EA        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701EA<br>SNJ54LS257BJ | <a href="#">Samples</a> |
| 7603701FA        | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701FA<br>SNJ54LS257BW | <a href="#">Samples</a> |
| 7603701FA        | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701FA<br>SNJ54LS257BW | <a href="#">Samples</a> |
| 7603801EA        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603801EA<br>SNJ54LS258BJ | <a href="#">Samples</a> |
| 7603801EA        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603801EA<br>SNJ54LS258BJ | <a href="#">Samples</a> |
| 8002301EA        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301EA<br>SNJ54S258J   | <a href="#">Samples</a> |
| 8002301EA        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301EA<br>SNJ54S258J   | <a href="#">Samples</a> |
| 8002301FA        | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301FA<br>SNJ54S258W   | <a href="#">Samples</a> |
| 8002301FA        | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301FA<br>SNJ54S258W   | <a href="#">Samples</a> |
| JM38510/07906BEA | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BEA      | <a href="#">Samples</a> |
| JM38510/07906BEA | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BEA      | <a href="#">Samples</a> |
| JM38510/07906BFA | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BFA      | <a href="#">Samples</a> |
| JM38510/07906BFA | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BFA      | <a href="#">Samples</a> |
| JM38510/30906B2A | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906B2A      | <a href="#">Samples</a> |
| JM38510/30906B2A | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906B2A      | <a href="#">Samples</a> |
| JM38510/30906BEA | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BEA      | <a href="#">Samples</a> |

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)  | Lead finish/<br>Ball material<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|------------------|--------------------------------------|----------------------|--------------|-------------------------|-------------------------|
| JM38510/30906BEA | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BEA    | <a href="#">Samples</a> |
| JM38510/30906BFA | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BFA    | <a href="#">Samples</a> |
| JM38510/30906BFA | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BFA    | <a href="#">Samples</a> |
| M38510/07906BEA  | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BEA    | <a href="#">Samples</a> |
| M38510/07906BEA  | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BEA    | <a href="#">Samples</a> |
| M38510/07906BFA  | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BFA    | <a href="#">Samples</a> |
| M38510/07906BFA  | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>07906BFA    | <a href="#">Samples</a> |
| M38510/30906B2A  | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906B2A    | <a href="#">Samples</a> |
| M38510/30906B2A  | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906B2A    | <a href="#">Samples</a> |
| M38510/30906BEA  | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BEA    | <a href="#">Samples</a> |
| M38510/30906BEA  | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BEA    | <a href="#">Samples</a> |
| M38510/30906BFA  | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BFA    | <a href="#">Samples</a> |
| M38510/30906BFA  | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | JM38510/<br>30906BFA    | <a href="#">Samples</a> |
| SN54LS257BJ      | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54LS257BJ             | <a href="#">Samples</a> |
| SN54LS257BJ      | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54LS257BJ             | <a href="#">Samples</a> |
| SN54LS258BJ      | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54LS258BJ             | <a href="#">Samples</a> |
| SN54LS258BJ      | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54LS258BJ             | <a href="#">Samples</a> |

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)  | Lead finish/<br>Ball material<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|------------------|--------------------------------------|----------------------|--------------|-------------------------|-------------------------|
| SN54S257J        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54S257J               | <a href="#">Samples</a> |
| SN54S257J        | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SN54S257J               | <a href="#">Samples</a> |
| SN74LS257BD      | ACTIVE        | SOIC         | D               | 16   | 40          | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS257B                  | <a href="#">Samples</a> |
| SN74LS257BD      | ACTIVE        | SOIC         | D               | 16   | 40          | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS257B                  | <a href="#">Samples</a> |
| SN74LS257BDR     | ACTIVE        | SOIC         | D               | 16   | 2500        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS257B                  | <a href="#">Samples</a> |
| SN74LS257BDR     | ACTIVE        | SOIC         | D               | 16   | 2500        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS257B                  | <a href="#">Samples</a> |
| SN74LS257BN      | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74LS257BN             | <a href="#">Samples</a> |
| SN74LS257BN      | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74LS257BN             | <a href="#">Samples</a> |
| SN74LS257BNSR    | ACTIVE        | SO           | NS              | 16   | 2000        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | 74LS257B                | <a href="#">Samples</a> |
| SN74LS257BNSR    | ACTIVE        | SO           | NS              | 16   | 2000        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | 74LS257B                | <a href="#">Samples</a> |
| SN74LS258BD      | ACTIVE        | SOIC         | D               | 16   | 40          | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS258B                  | <a href="#">Samples</a> |
| SN74LS258BD      | ACTIVE        | SOIC         | D               | 16   | 40          | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS258B                  | <a href="#">Samples</a> |
| SN74LS258BDR     | ACTIVE        | SOIC         | D               | 16   | 2500        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS258B                  | <a href="#">Samples</a> |
| SN74LS258BDR     | ACTIVE        | SOIC         | D               | 16   | 2500        | RoHS & Green     | NIPDAU                               | Level-1-260C-UNLIM   | 0 to 70      | LS258B                  | <a href="#">Samples</a> |
| SN74LS258BN      | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74LS258BN             | <a href="#">Samples</a> |
| SN74LS258BN      | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74LS258BN             | <a href="#">Samples</a> |
| SN74S257N        | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74S257N               | <a href="#">Samples</a> |
| SN74S257N        | ACTIVE        | PDIP         | N               | 16   | 25          | RoHS & Green     | NIPDAU                               | N / A for Pkg Type   | 0 to 70      | SN74S257N               | <a href="#">Samples</a> |
| SNJ54LS257BFK    | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54LS<br>257BFK       | <a href="#">Samples</a> |
| SNJ54LS257BFK    | ACTIVE        | LCCC         | FK              | 20   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54LS<br>257BFK       | <a href="#">Samples</a> |



| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)  | Lead finish/<br>Ball material<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5)   | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|------------------|--------------------------------------|----------------------|--------------|---------------------------|-------------------------|
| SNJ54LS257BJ     | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701EA<br>SNJ54LS257BJ | <a href="#">Samples</a> |
| SNJ54LS257BJ     | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701EA<br>SNJ54LS257BJ | <a href="#">Samples</a> |
| SNJ54LS257BW     | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701FA<br>SNJ54LS257BW | <a href="#">Samples</a> |
| SNJ54LS257BW     | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603701FA<br>SNJ54LS257BW | <a href="#">Samples</a> |
| SNJ54LS258BJ     | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603801EA<br>SNJ54LS258BJ | <a href="#">Samples</a> |
| SNJ54LS258BJ     | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 7603801EA<br>SNJ54LS258BJ | <a href="#">Samples</a> |
| SNJ54S257J       | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54S257J                | <a href="#">Samples</a> |
| SNJ54S257J       | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54S257J                | <a href="#">Samples</a> |
| SNJ54S257W       | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54S257W                | <a href="#">Samples</a> |
| SNJ54S257W       | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | SNJ54S257W                | <a href="#">Samples</a> |
| SNJ54S258J       | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301EA<br>SNJ54S258J   | <a href="#">Samples</a> |
| SNJ54S258J       | ACTIVE        | CDIP         | J               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301EA<br>SNJ54S258J   | <a href="#">Samples</a> |
| SNJ54S258W       | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301FA<br>SNJ54S258W   | <a href="#">Samples</a> |
| SNJ54S258W       | ACTIVE        | CFP          | W               | 16   | 1           | Non-RoHS & Green | SNPB                                 | N / A for Pkg Type   | -55 to 125   | 8002301FA<br>SNJ54S258W   | <a href="#">Samples</a> |

(1) The marketing status values are defined as follows:

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

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

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

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

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

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

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

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

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

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

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

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

**Important Information and Disclaimer:** The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF SN54LS257B, SN54LS258B, SN54S257, SN74LS257B, SN74LS258B, SN74S257 :**

● Catalog : [SN74LS257B](#), [SN74LS258B](#), [SN74S257](#)

● Military : [SN54LS257B](#), [SN54LS258B](#), [SN54S257](#)

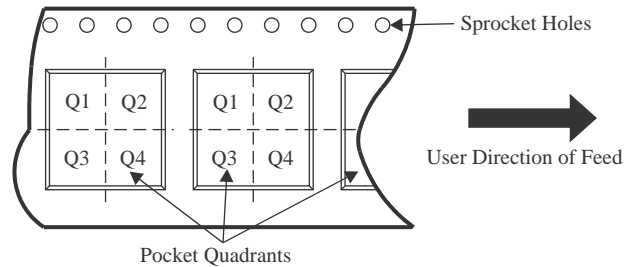
NOTE: Qualified Version Definitions:

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

## TAPE AND REEL INFORMATION



### QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



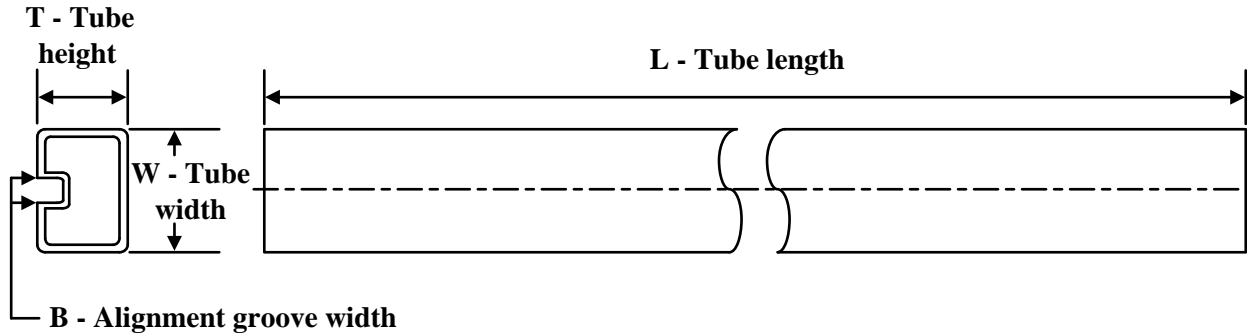
\*All dimensions are nominal

| 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 |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74LS257BDR  | SOIC         | D               | 16   | 2500 | 330.0              | 16.4               | 6.5     | 10.3    | 2.1     | 8.0     | 16.0   | Q1            |
| SN74LS257BNSR | SO           | NS              | 16   | 2000 | 330.0              | 16.4               | 8.2     | 10.5    | 2.5     | 12.0    | 16.0   | Q1            |
| SN74LS258BDR  | SOIC         | D               | 16   | 2500 | 330.0              | 16.4               | 6.5     | 10.3    | 2.1     | 8.0     | 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) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74LS257BDR  | SOIC         | D               | 16   | 2500 | 340.5       | 336.1      | 32.0        |
| SN74LS257BNSR | SO           | NS              | 16   | 2000 | 356.0       | 356.0      | 35.0        |
| SN74LS258BDR  | SOIC         | D               | 16   | 2500 | 340.5       | 336.1      | 32.0        |

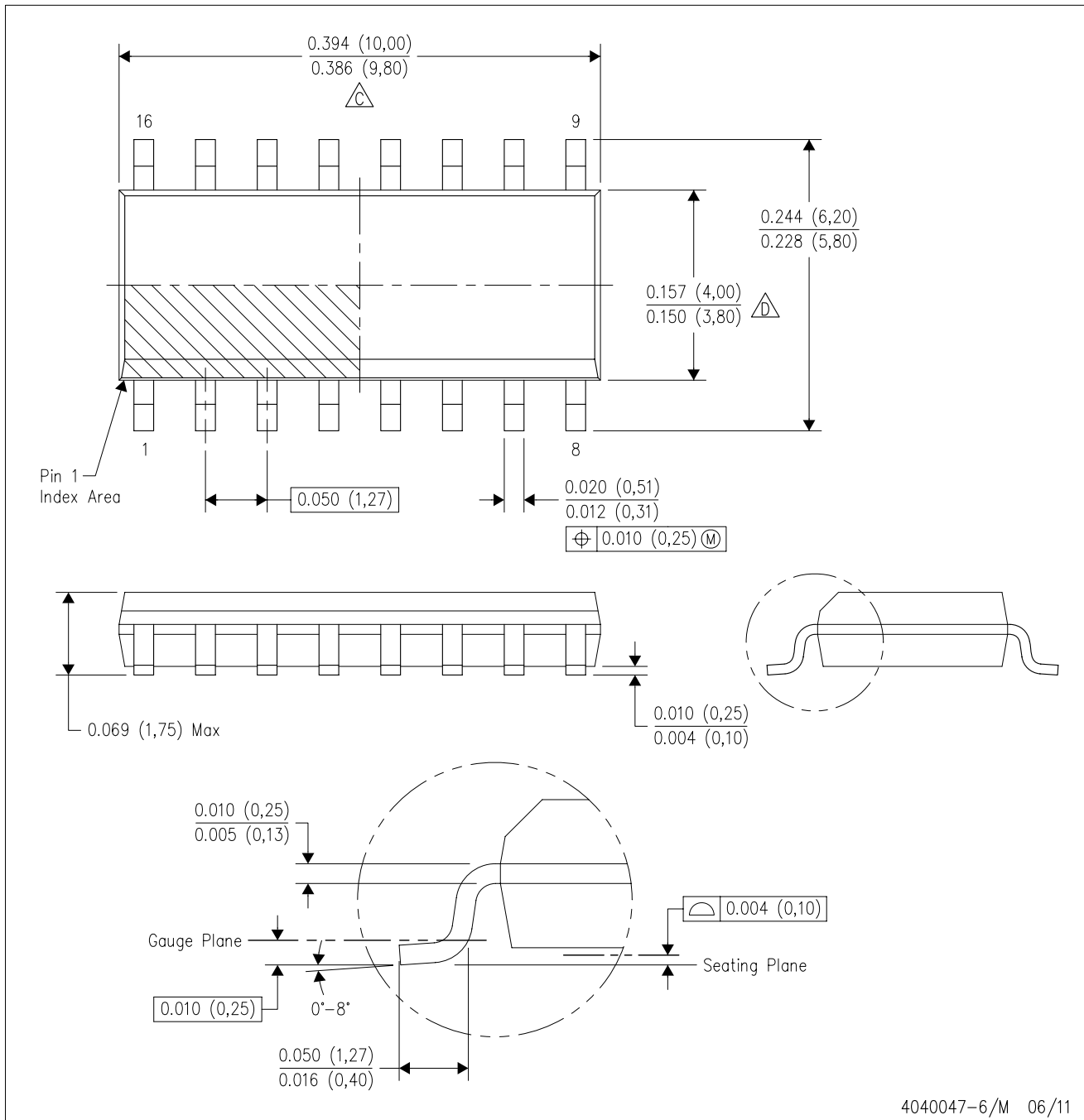
**TUBE**


\*All dimensions are nominal

| Device           | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T (μm) | B (mm) |
|------------------|--------------|--------------|------|-----|--------|--------|--------|--------|
| 7603701FA        | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |
| JM38510/07906BFA | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |
| JM38510/30906B2A | FK           | LCCC         | 20   | 1   | 506.98 | 12.06  | 2030   | NA     |
| JM38510/30906BFA | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |
| M38510/07906BFA  | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |
| M38510/30906B2A  | FK           | LCCC         | 20   | 1   | 506.98 | 12.06  | 2030   | NA     |
| M38510/30906BFA  | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |
| SN74LS257BD      | D            | SOIC         | 16   | 40  | 507    | 8      | 3940   | 4.32   |
| SN74LS257BN      | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SN74LS257BN      | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SN74LS258BD      | D            | SOIC         | 16   | 40  | 507    | 8      | 3940   | 4.32   |
| SN74LS258BN      | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SN74LS258BN      | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SN74S257N        | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SN74S257N        | N            | PDIP         | 16   | 25  | 506    | 13.97  | 11230  | 4.32   |
| SNJ54LS257BFK    | FK           | LCCC         | 20   | 1   | 506.98 | 12.06  | 2030   | NA     |
| SNJ54LS257BW     | W            | CFP          | 16   | 1   | 506.98 | 26.16  | 6220   | NA     |

D (R-PDSO-G16)

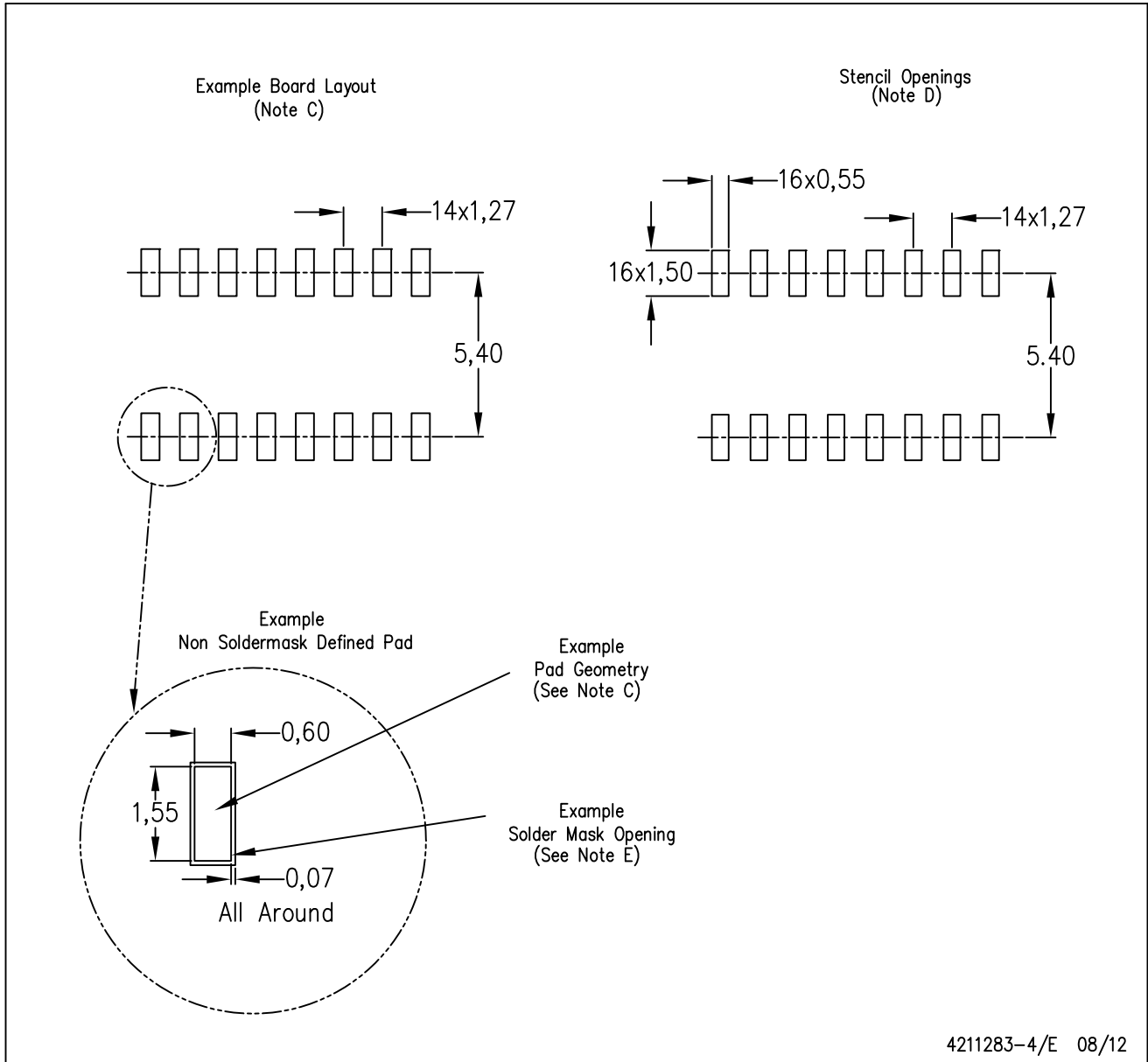
PLASTIC SMALL OUTLINE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
  - D. Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
  - E. Reference JEDEC MS-012 variation AC.

D (R-PDSO-G16)

PLASTIC SMALL OUTLINE



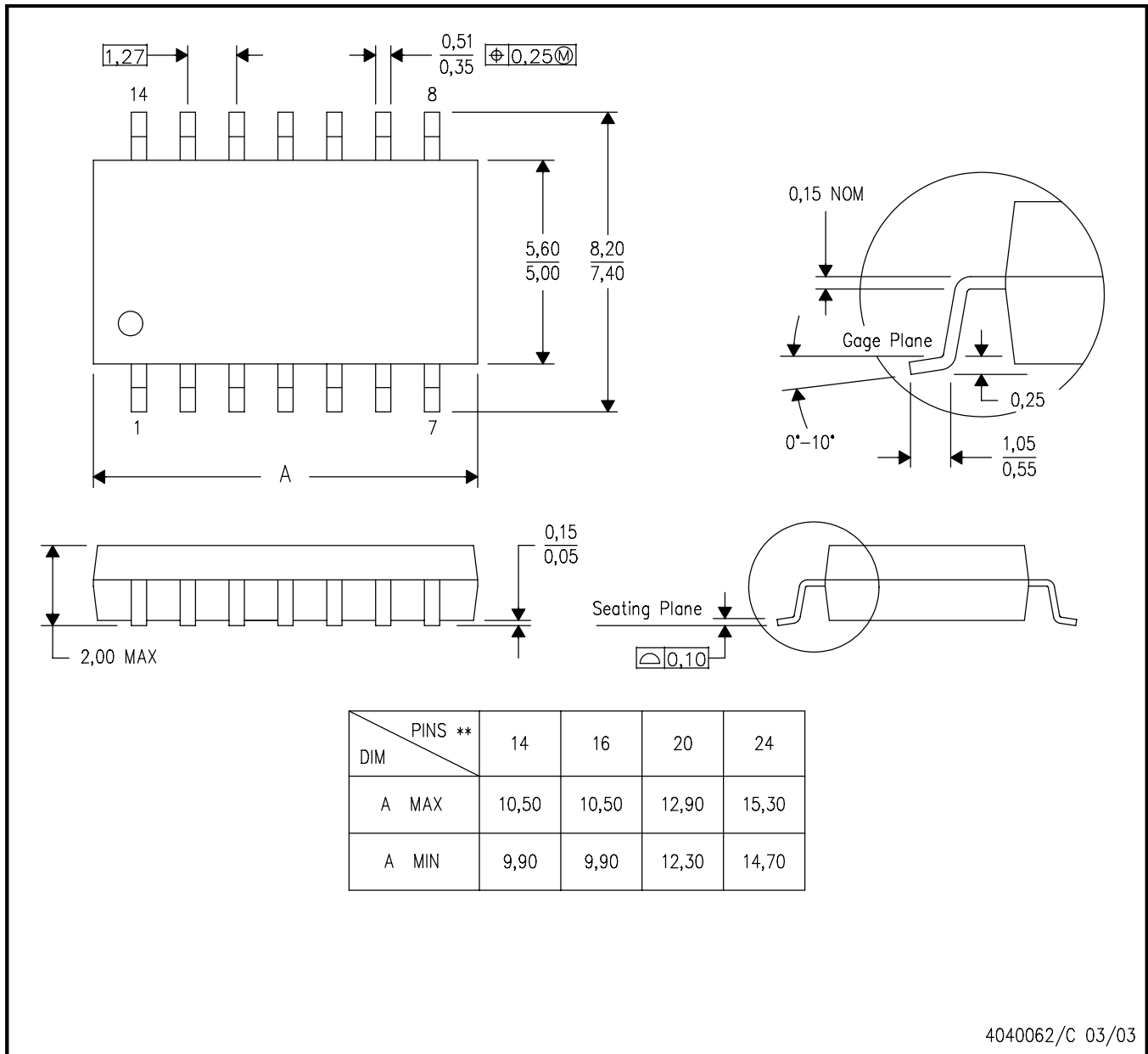
- NOTES:
- All linear dimensions are in millimeters.
  - This drawing is subject to change without notice.
  - Publication IPC-7351 is recommended for alternate designs.
  - Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
  - 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

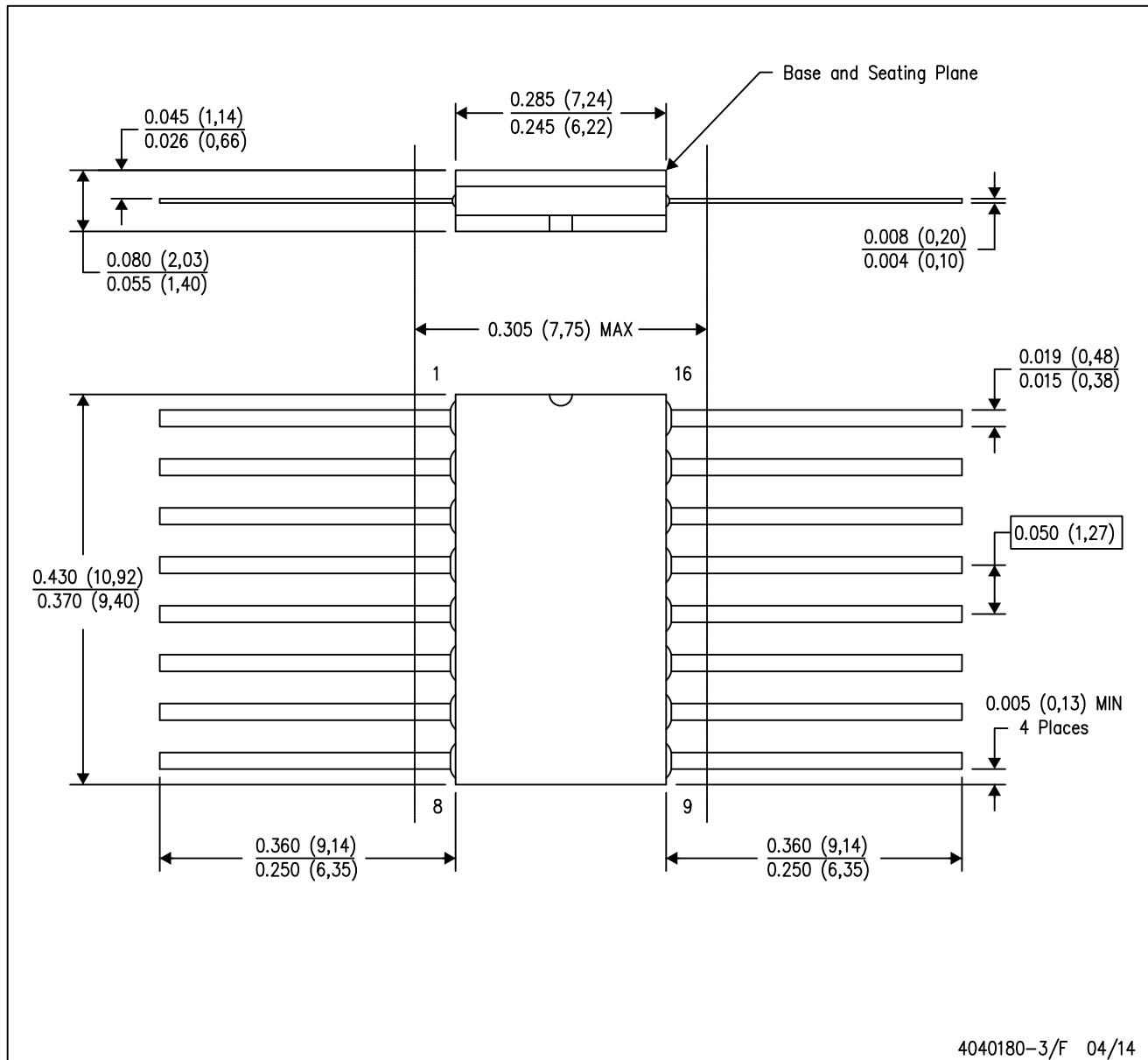


- NOTES:
- A. All linear dimensions are in millimeters.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.



W (R-GDFP-F16)

CERAMIC DUAL FLATPACK



- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. This package can be hermetically sealed with a ceramic lid using glass frit.
  - D. Index point is provided on cap for terminal identification only.
  - E. Falls within MIL STD 1835 GDFP2-F16

## GENERIC PACKAGE VIEW

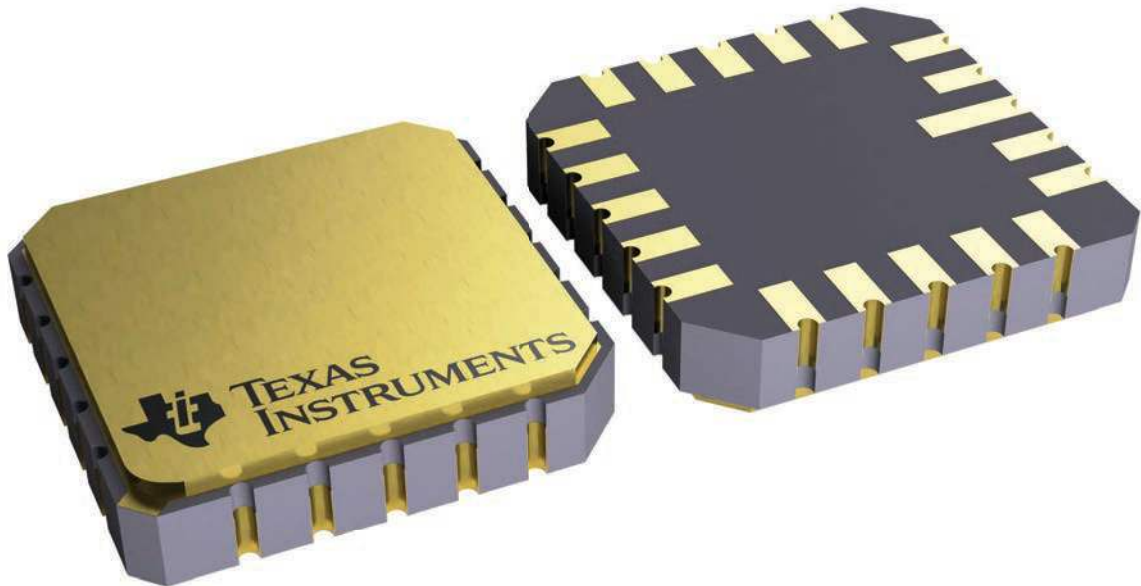
**FK 20**

**LCCC - 2.03 mm max height**

8.89 x 8.89, 1.27 mm pitch

LEADLESS CERAMIC CHIP CARRIER

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

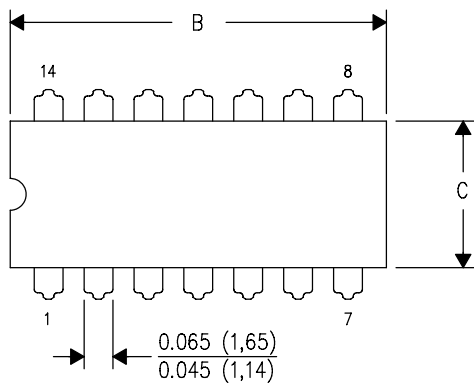


4229370VA\

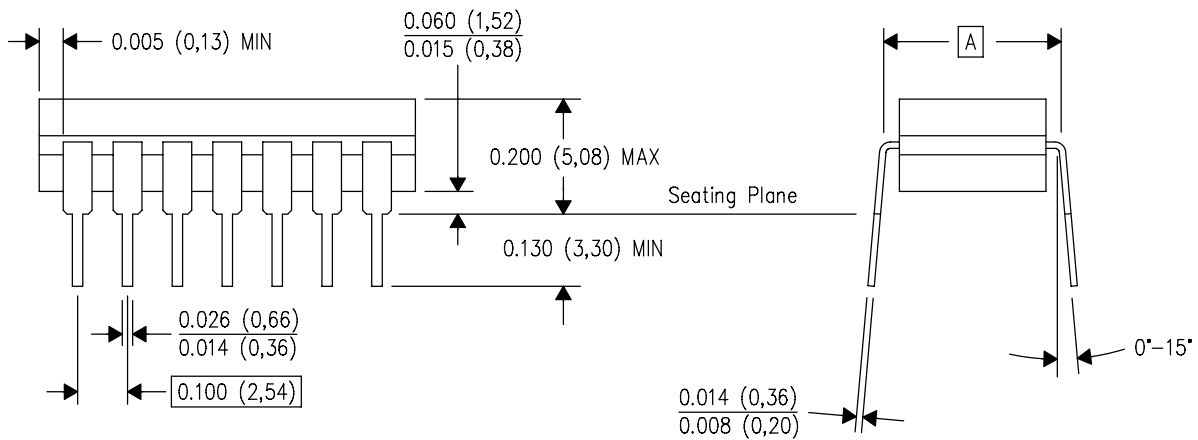
J (R-GDIP-T\*\*)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



| DIM \ PINS ** | 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)        |



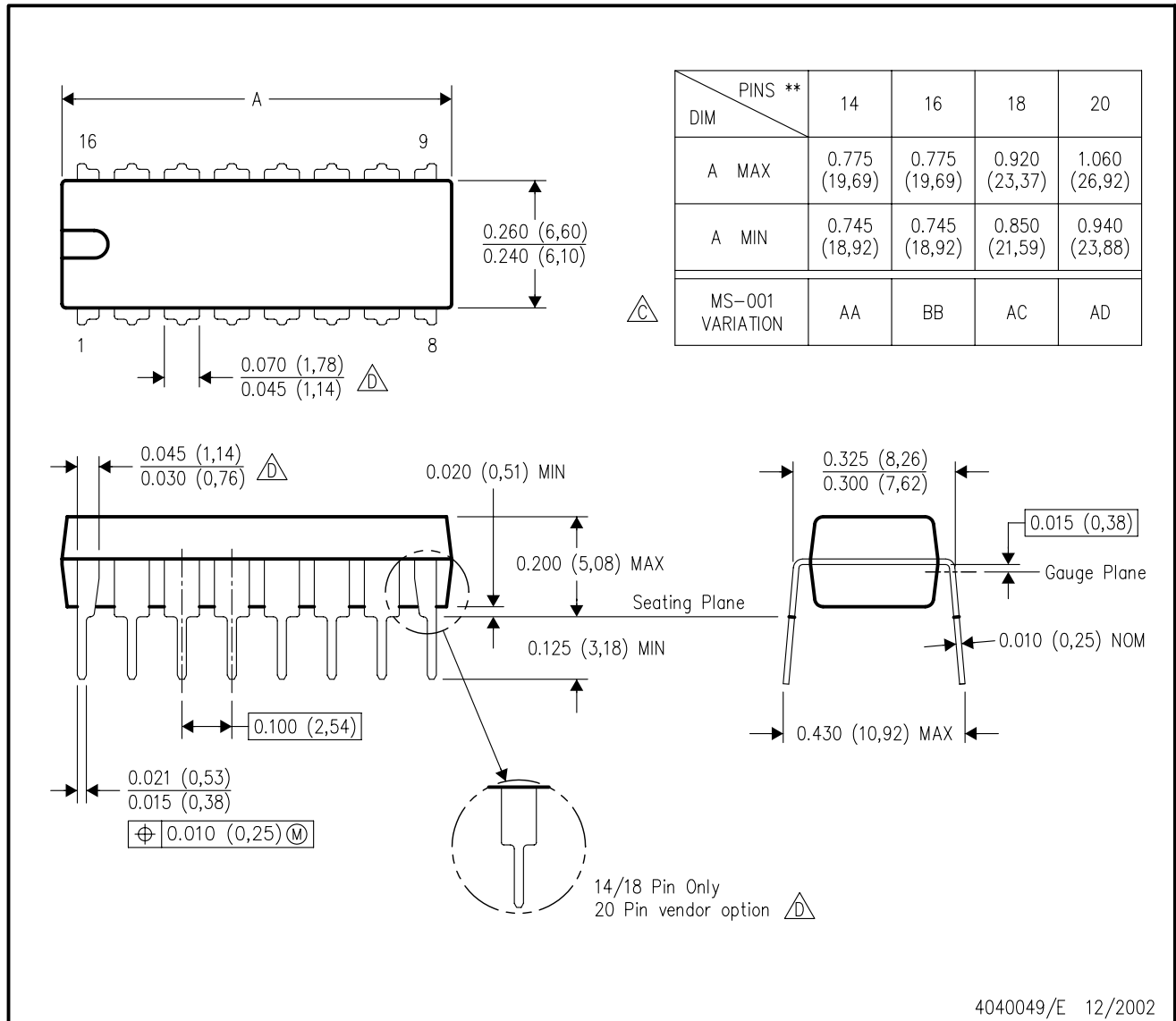
4040083/F 03/03

- 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.

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

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



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

4040049/E 12/2002

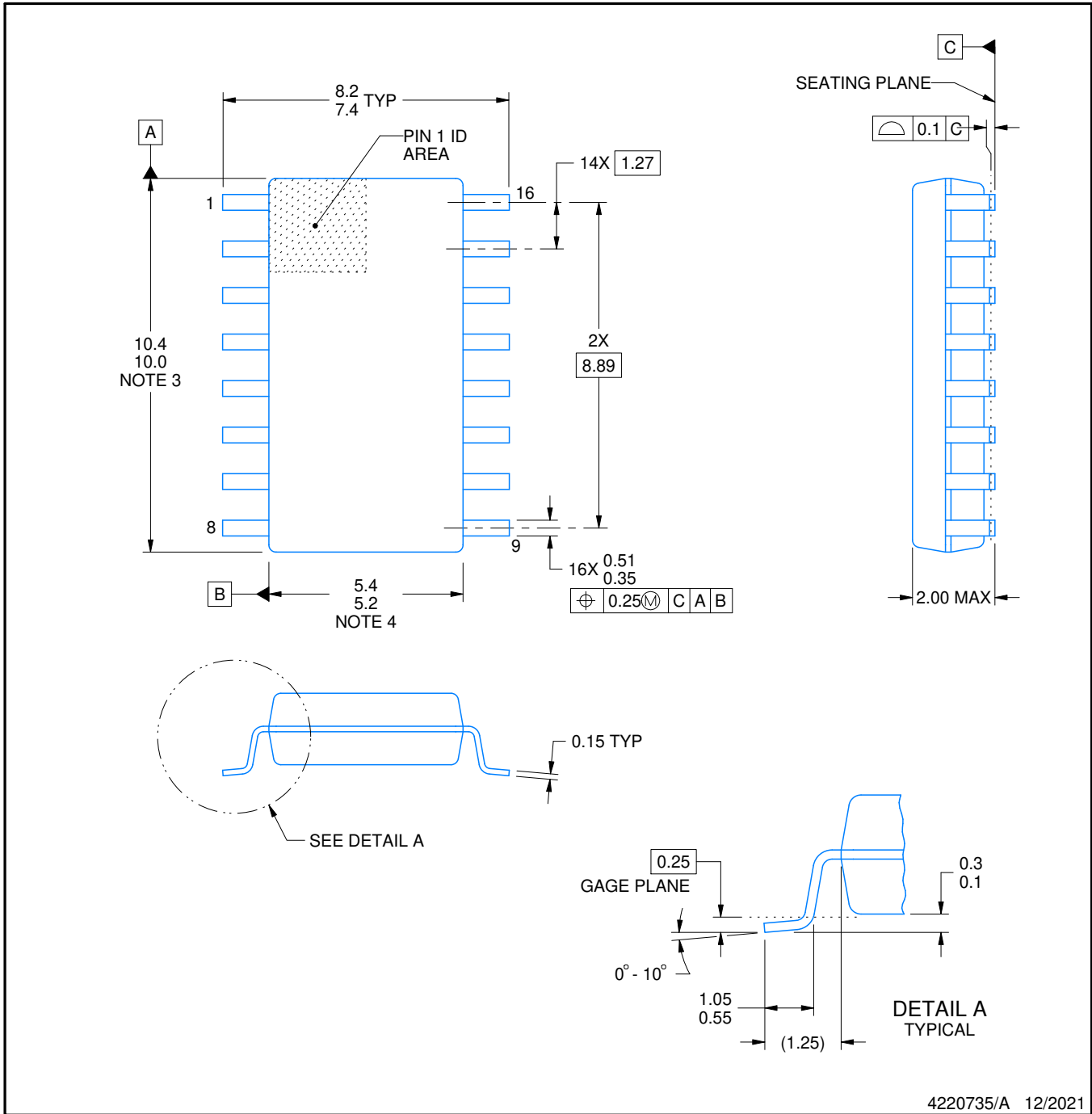


# PACKAGE OUTLINE

## NS0016A

### SOP - 2.00 mm max height

SOP



4220735/A 12/2021

#### NOTES:

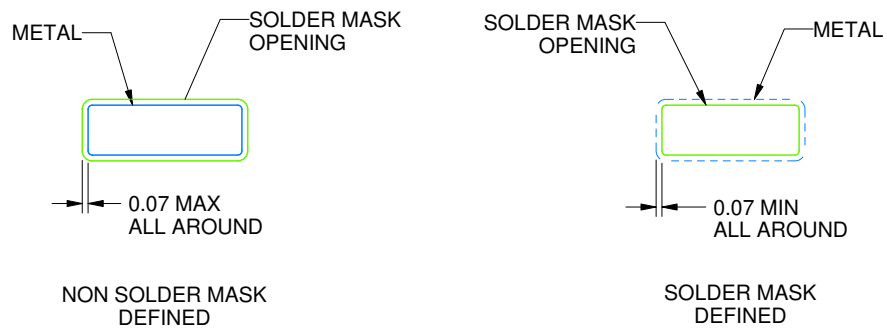
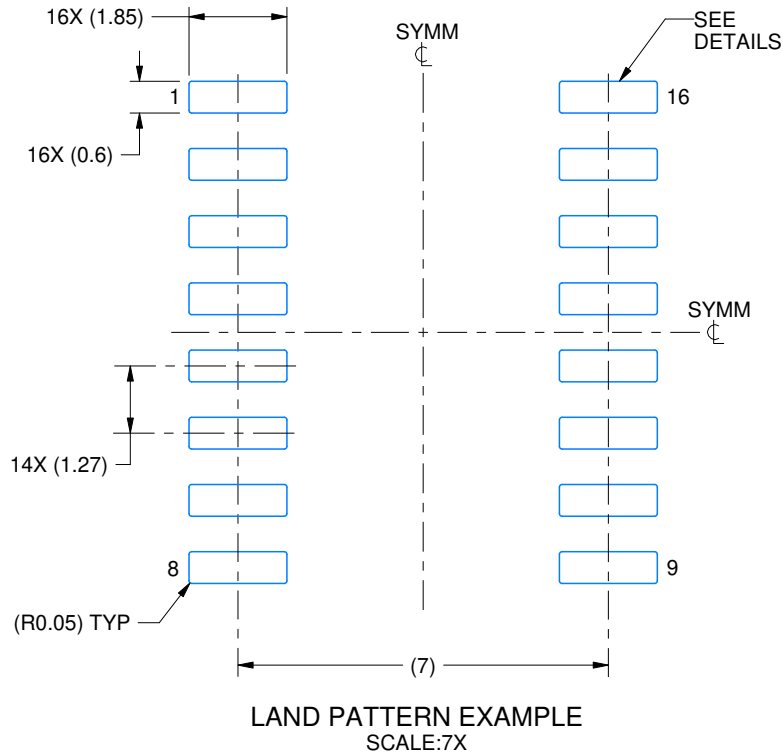
1. All linear dimensions are in millimeters. Dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm, per side.
4. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm, per side.

# EXAMPLE BOARD LAYOUT

NS0016A

SOP - 2.00 mm max height

SOP



SOLDER MASK DETAILS

4220735/A 12/2021

NOTES: (continued)

5. Publication IPC-7351 may have alternate designs.

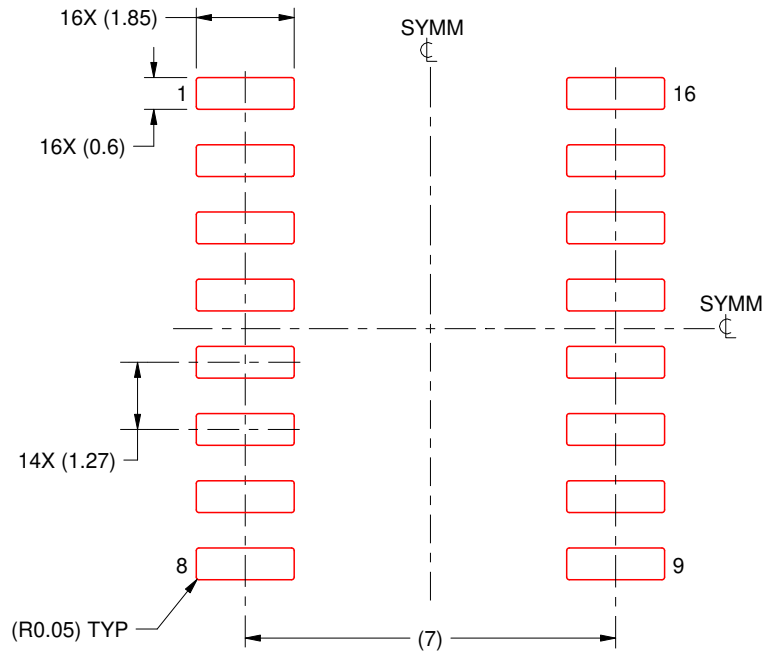
6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

# EXAMPLE STENCIL DESIGN

NS0016A

SOP - 2.00 mm max height

SOP



SOLDER PASTE EXAMPLE  
BASED ON 0.125 mm THICK STENCIL  
SCALE:7X

4220735/A 12/2021

NOTES: (continued)

7. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
8. Board assembly site may have different recommendations for stencil design.

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