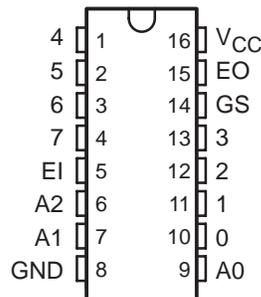


# SN54HC148, SN74HC148 8-LINE TO 3-LINE PRIORITY ENCODERS

SCLS109G – MARCH 1984 – REVISED APRIL 2004

- Wide Operating Voltage Range of 2 V to 6 V
- Outputs Can Drive Up To 10 LSTTL Loads
- Low Power Consumption, 80- $\mu$ A Max  $I_{CC}$
- Typical  $t_{pd} = 16$  ns
- $\pm 4$ -mA Output Drive at 5 V
- Low Input Current of 1  $\mu$ A Max
- Encode Eight Data Lines to 3-Line Binary (Octal)
- Applications Include:
  - n-Bit Encoding
  - Code Converters and Generators

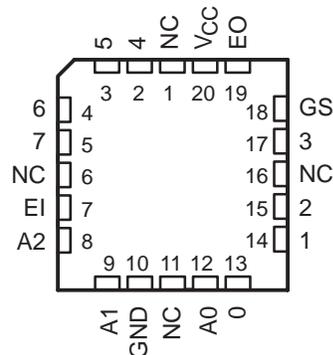
SN54HC148 ... J OR W PACKAGE  
SN74HC148 ... D, DW, N, OR NS PACKAGE  
(TOP VIEW)



## description/ordering information

The 'HC148 devices feature priority decoding of the inputs to ensure that only the highest-order data line is encoded. These devices encode eight data lines to 3-line (4-2-1) binary (octal). Cascading circuitry (enable input EI and enable output EO) has been provided to allow octal expansion without the need for external circuitry. Data inputs and outputs are active at the low logic level.

SN54HC148 ... FK PACKAGE  
(TOP VIEW)



NC – No internal connection

## ORDERING INFORMATION

| T <sub>A</sub> | PACKAGE†     |              | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|--------------|--------------|-----------------------|------------------|
| -40°C to 85°C  | PDIP – N     | Tube of 25   | SN74HC148N            | SN74HC148N       |
|                | SOIC – D     | Tube of 40   | SN74HC148D            | HC148            |
|                |              | Reel of 2500 | SN74HC148DR           |                  |
|                |              | Reel of 250  | SN74HC148DT           |                  |
|                | SOIC – DW    | Reel of 2000 | SN74HC148DWR          | HC148            |
| SOP – NS       | Reel of 2000 | SN74HC148NSR | HC148                 |                  |
| -55°C to 125°C | CDIP – J     | Tube of 25   | SNJ54HC148J           | SNJ54HC148J      |
|                | CFP – W      | Tube of 150  | SNJ54HC148W           | SNJ54HC148W      |
|                | LCCC – FK    | Tube of 55   | SNJ54HC148FK          | SNJ54HC148FK     |

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



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

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS  
INSTRUMENTS

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

# SN54HC148, SN74HC148 8-LINE TO 3-LINE PRIORITY ENCODERS

SCLS109G – MARCH 1984 – REVISED APRIL 2004

FUNCTION TABLE

| EI | INPUTS |   |   |   |   |   |   |   | OUTPUTS |    |    |    |    |
|----|--------|---|---|---|---|---|---|---|---------|----|----|----|----|
|    | 0      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A2      | A1 | A0 | GS | EO |
| H  | X      | X | X | X | X | X | X | X | H       | H  | H  | H  | H  |
| L  | H      | H | H | H | H | H | H | H | H       | H  | H  | H  | L  |
| L  | X      | X | X | X | X | X | X | L | L       | L  | L  | L  | H  |
| L  | X      | X | X | X | X | X | L | H | L       | L  | H  | L  | H  |
| L  | X      | X | X | X | X | L | H | H | L       | H  | L  | L  | H  |
| L  | X      | X | X | X | L | H | H | H | L       | H  | H  | L  | H  |
| L  | X      | X | X | L | H | H | H | H | H       | L  | L  | L  | H  |
| L  | X      | X | L | H | H | H | H | H | H       | L  | H  | L  | H  |
| L  | X      | L | H | H | H | H | H | H | H       | H  | L  | L  | H  |
| L  | L      | H | H | H | H | H | H | H | H       | H  | H  | L  | H  |

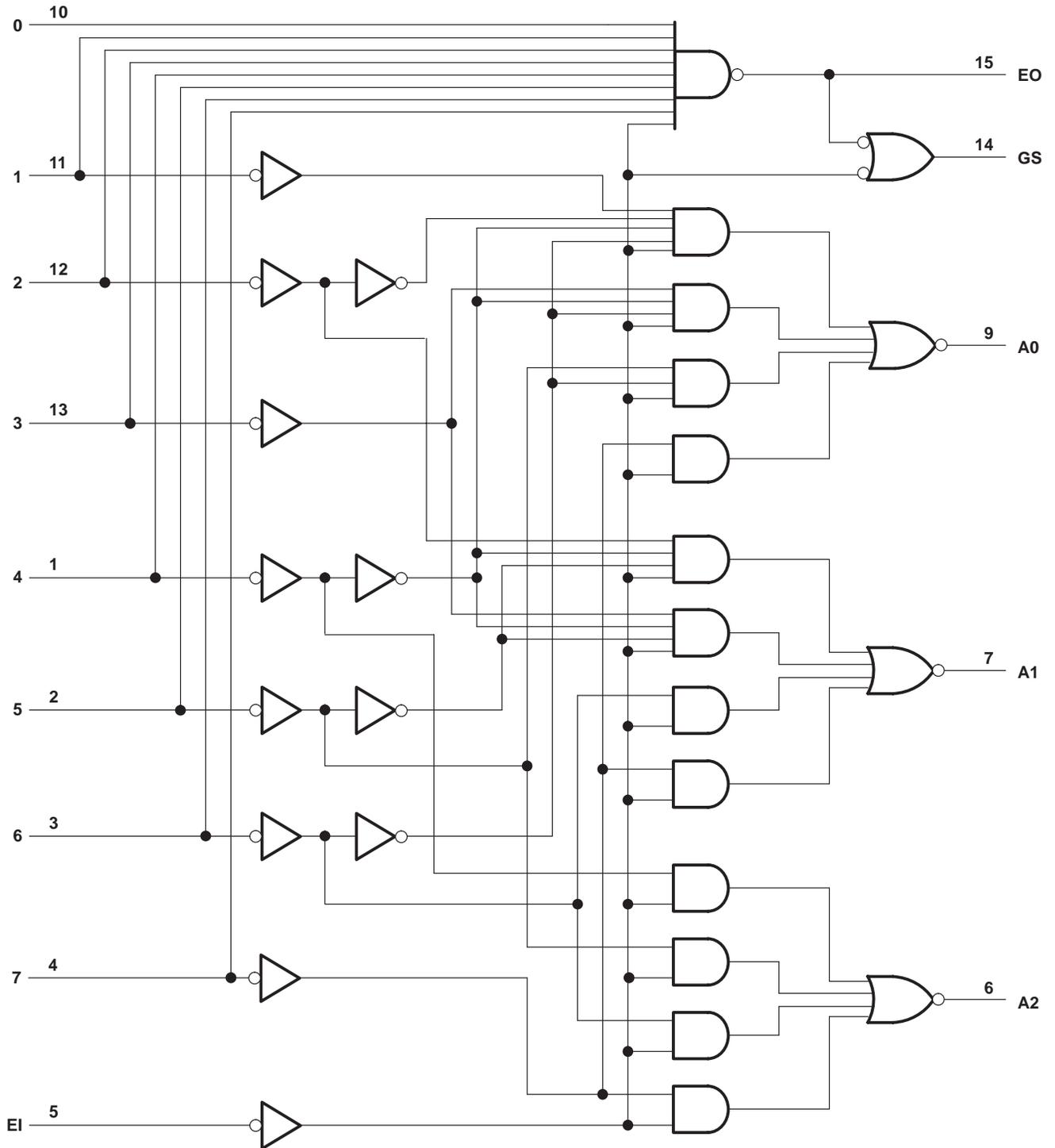


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# SN54HC148, SN74HC148 8-LINE TO 3-LINE PRIORITY ENCODERS

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## logic diagram (positive logic)



Pin numbers shown are for the D, DW, J, N, NS, and W packages.





# SN54HC148, SN74HC148 8-LINE TO 3-LINE PRIORITY ENCODERS

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

| PARAMETER       | TEST CONDITIONS                                           |                           | V <sub>CC</sub> | T <sub>A</sub> = 25°C |       |      | SN54HC148 |       | SN74HC148 |       | UNIT |    |    |
|-----------------|-----------------------------------------------------------|---------------------------|-----------------|-----------------------|-------|------|-----------|-------|-----------|-------|------|----|----|
|                 |                                                           |                           |                 | MIN                   | TYP   | MAX  | MIN       | MAX   | MIN       | MAX   |      |    |    |
| V <sub>OH</sub> | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>       | I <sub>OH</sub> = -20 μA  | 2 V             | 1.9                   | 1.998 |      | 1.9       |       | 1.9       | V     |      |    |    |
|                 |                                                           |                           | 4.5 V           | 4.4                   | 4.499 |      | 4.4       |       | 4.4       |       |      |    |    |
|                 |                                                           |                           | 6 V             | 5.9                   | 5.999 |      | 5.9       |       | 5.9       |       |      |    |    |
|                 |                                                           | I <sub>OH</sub> = -4 mA   | 4.5 V           | 3.98                  | 4.3   |      | 3.7       |       | 3.84      |       |      |    |    |
|                 |                                                           | I <sub>OH</sub> = -5.2 mA | 6 V             | 5.48                  | 5.8   |      | 5.2       |       | 5.34      |       |      |    |    |
| V <sub>OL</sub> | V <sub>I</sub> = V <sub>IH</sub> or V <sub>IL</sub>       | I <sub>OL</sub> = 20 μA   | 2 V             |                       | 0.002 | 0.1  |           | 0.1   |           | V     |      |    |    |
|                 |                                                           |                           | 4.5 V           |                       | 0.001 | 0.1  |           | 0.1   |           |       | 0.1  |    |    |
|                 |                                                           |                           | 6 V             |                       | 0.001 | 0.1  |           | 0.1   |           |       | 0.1  |    |    |
|                 |                                                           | I <sub>OL</sub> = 4 mA    | 4.5 V           |                       | 0.17  | 0.26 |           | 0.4   |           |       | 0.33 |    |    |
|                 |                                                           | I <sub>OL</sub> = 5.2 mA  | 6 V             |                       | 0.15  | 0.26 |           | 0.4   |           |       | 0.33 |    |    |
| I <sub>I</sub>  | V <sub>I</sub> = V <sub>CC</sub> or 0                     |                           | 6 V             |                       | ±0.1  | ±100 |           | ±1000 |           | ±1000 | nA   |    |    |
| I <sub>CC</sub> | V <sub>I</sub> = V <sub>CC</sub> or 0, I <sub>O</sub> = 0 |                           | 6 V             |                       |       |      | 8         |       | 160       |       | 80   | μA |    |
| C <sub>i</sub>  |                                                           |                           | 2 V to 6 V      |                       |       | 3    | 10        |       |           | 10    |      | 10 | pF |

switching characteristics over recommended operating free-air temperature range, C<sub>L</sub> = 50 pF (unless otherwise noted) (see Figure 1)

| PARAMETER       | FROM (INPUT) | TO (OUTPUT)   | V <sub>CC</sub> | T <sub>A</sub> = 25°C |     |     | SN54HC148 |     | SN74HC148 |     | UNIT |
|-----------------|--------------|---------------|-----------------|-----------------------|-----|-----|-----------|-----|-----------|-----|------|
|                 |              |               |                 | MIN                   | TYP | MAX | MIN       | MAX | MIN       | MAX |      |
| t <sub>pd</sub> | 1-7          | A0, A1, or A2 | 2 V             |                       | 69  | 180 |           | 270 |           | 225 | ns   |
|                 |              |               | 4.5 V           |                       | 23  | 36  |           | 54  |           | 45  |      |
|                 |              |               | 6 V             |                       | 21  | 31  |           | 46  |           | 38  |      |
|                 | 0-7          | EO            | 2 V             |                       | 60  | 150 |           | 225 |           | 190 |      |
|                 |              |               | 4.5 V           |                       | 20  | 30  |           | 45  |           | 38  |      |
|                 |              |               | 6 V             |                       | 17  | 26  |           | 38  |           | 33  |      |
|                 |              | GS            | 2 V             |                       | 75  | 190 |           | 285 |           | 240 |      |
|                 |              |               | 4.5 V           |                       | 25  | 38  |           | 57  |           | 48  |      |
|                 |              |               | 6 V             |                       | 21  | 32  |           | 48  |           | 41  |      |
|                 | EI           | A0, A1, or A2 | 2 V             |                       | 78  | 195 |           | 295 |           | 245 |      |
|                 |              |               | 4.5 V           |                       | 26  | 39  |           | 59  |           | 49  |      |
|                 |              |               | 6 V             |                       | 22  | 33  |           | 50  |           | 42  |      |
|                 |              | GS            | 2 V             |                       | 57  | 145 |           | 220 |           | 180 |      |
|                 |              |               | 4.5 V           |                       | 19  | 29  |           | 44  |           | 36  |      |
|                 |              |               | 6 V             |                       | 16  | 25  |           | 38  |           | 31  |      |
|                 |              | EO            | 2 V             |                       | 66  | 165 |           | 250 |           | 205 |      |
|                 |              |               | 4.5 V           |                       | 22  | 33  |           | 50  |           | 41  |      |
|                 |              |               | 6 V             |                       | 19  | 28  |           | 43  |           | 35  |      |
| t <sub>t</sub>  | Any          | 2 V           |                 | 28                    | 75  |     | 110       |     | 95        | ns  |      |
|                 |              | 4.5 V         |                 | 8                     | 15  |     | 22        |     | 19        |     |      |
|                 |              | 6 V           |                 | 6                     | 13  |     | 19        |     | 16        |     |      |



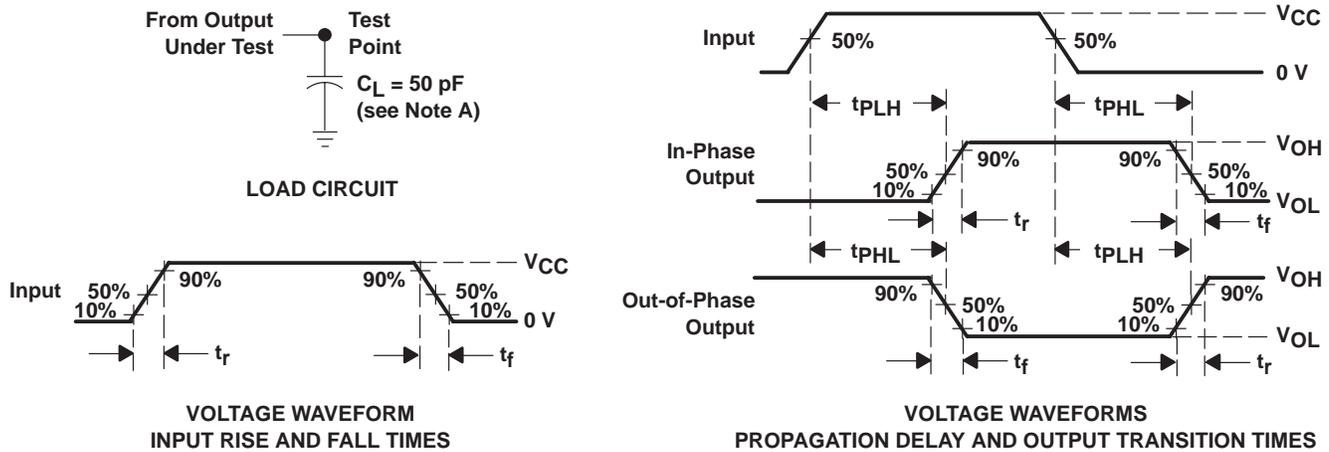
# SN54HC148, SN74HC148 8-LINE TO 3-LINE PRIORITY ENCODERS

SCLS109G – MARCH 1984 – REVISED APRIL 2004

operating characteristics,  $T_A = 25^\circ\text{C}$

| PARAMETER                              | TEST CONDITIONS | TYP | UNIT |
|----------------------------------------|-----------------|-----|------|
| $C_{pd}$ Power dissipation capacitance | No load         | 35  | pF   |

## PARAMETER MEASUREMENT INFORMATION



- NOTES:
- A.  $C_L$  includes probe and test-fixture capacitance.
  - B. Phase relationships between waveforms were chosen arbitrarily. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1 \text{ MHz}$ ,  $Z_O = 50 \Omega$ ,  $t_r = 6 \text{ ns}$ ,  $t_f = 6 \text{ ns}$ .
  - C. The outputs are measured one at a time, with one input transition per measurement.
  - D.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{pd}$ .

Figure 1. Load Circuit and Voltage Waveforms

APPLICATION INFORMATION

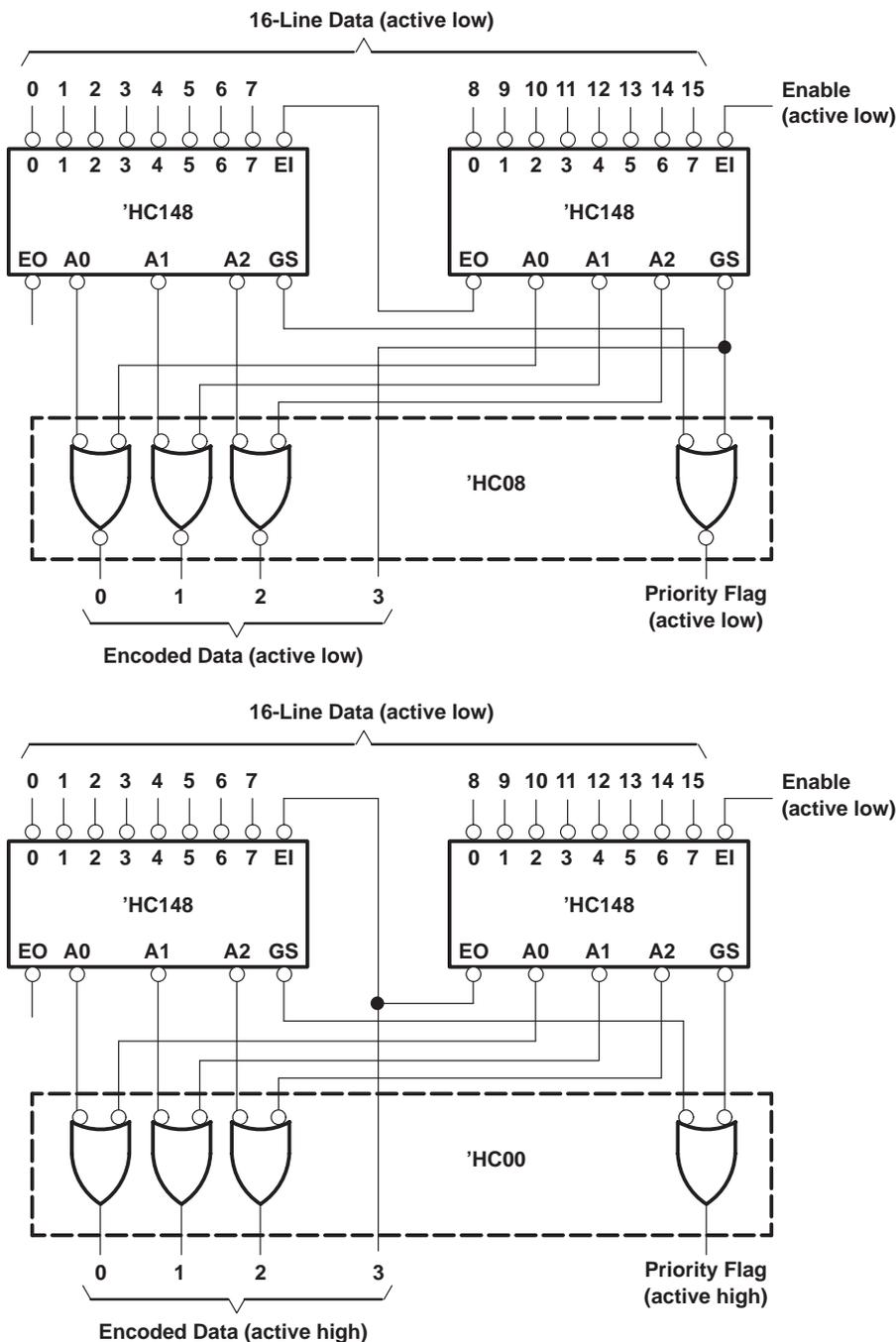


Figure 2. Priority Encoder for 16 Bits

Because the 'HC148 devices are combinational logic circuits, wrong addresses can appear during input transients. Moreover, a change from high to low at EI can cause a transient low on GS when all inputs are high. This must be considered when strobing the outputs.

**PACKAGING INFORMATION**

| Orderable Device | Status<br>(1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan<br>(2)         | Lead/Ball Finish<br>(6) | MSL Peak Temp<br>(3) | Op Temp (°C) | Device Marking<br>(4/5) | Samples                 |
|------------------|---------------|--------------|-----------------|------|-------------|-------------------------|-------------------------|----------------------|--------------|-------------------------|-------------------------|
| SN54HC148J       | ACTIVE        | CDIP         | J               | 16   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | SN54HC148J              | <a href="#">Samples</a> |
| SN74HC148D       | ACTIVE        | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DE4     | ACTIVE        | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DG4     | ACTIVE        | SOIC         | D               | 16   | 40          | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DR      | ACTIVE        | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU   CU SN       | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DRE4    | ACTIVE        | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DRG4    | ACTIVE        | SOIC         | D               | 16   | 2500        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DT      | ACTIVE        | SOIC         | D               | 16   | 250         | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SN74HC148DW      | OBSOLETE      | SOIC         | DW              | 16   |             | TBD                     | Call TI                 | Call TI              | -40 to 85    |                         |                         |
| SN74HC148N       | ACTIVE        | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -40 to 85    | SN74HC148N              | <a href="#">Samples</a> |
| SN74HC148NE4     | ACTIVE        | PDIP         | N               | 16   | 25          | Pb-Free (RoHS)          | CU NIPDAU               | N / A for Pkg Type   | -40 to 85    | SN74HC148N              | <a href="#">Samples</a> |
| SN74HC148NSR     | ACTIVE        | SO           | NS              | 16   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU               | Level-1-260C-UNLIM   | -40 to 85    | HC148                   | <a href="#">Samples</a> |
| SNJ54HC148FK     | ACTIVE        | LCCC         | FK              | 20   | 1           | TBD                     | POST-PLATE              | N / A for Pkg Type   | -55 to 125   | SNJ54HC148FK            | <a href="#">Samples</a> |
| SNJ54HC148J      | ACTIVE        | CDIP         | J               | 16   | 1           | TBD                     | A42                     | N / A for Pkg Type   | -55 to 125   | SNJ54HC148J             | <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.

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

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

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

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

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

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

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

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

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

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

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**OTHER QUALIFIED VERSIONS OF SN54HC148, SN74HC148 :**

● Catalog: [SN74HC148](#)

● Military: [SN54HC148](#)

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 |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74HC148DR   | SOIC         | D               | 16   | 2500 | 330.0              | 16.4               | 6.5     | 10.3    | 2.1     | 8.0     | 16.0   | Q1            |
| SN74HC148DR   | SOIC         | D               | 16   | 2500 | 330.0              | 16.8               | 6.5     | 10.3    | 2.1     | 8.0     | 16.0   | Q1            |
| SN74HC148DRG4 | 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) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74HC148DR   | SOIC         | D               | 16   | 2500 | 333.2       | 345.9      | 28.6        |
| SN74HC148DR   | SOIC         | D               | 16   | 2500 | 364.0       | 364.0      | 27.0        |
| SN74HC148DRG4 | SOIC         | D               | 16   | 2500 | 333.2       | 345.9      | 28.6        |

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)        |



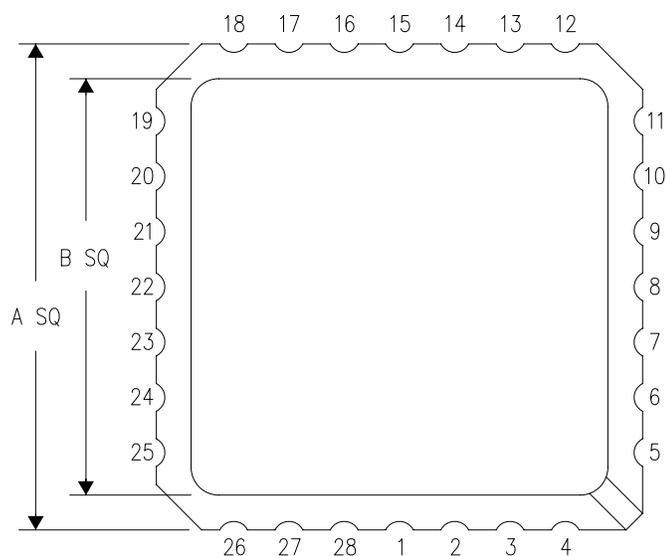
4040083/F 03/03

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

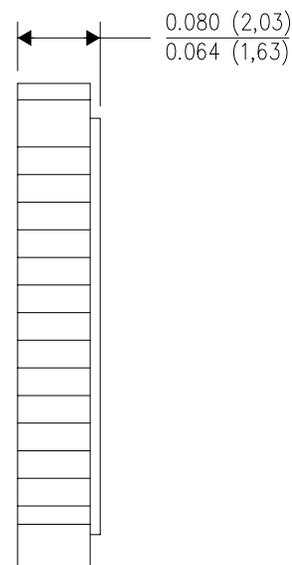
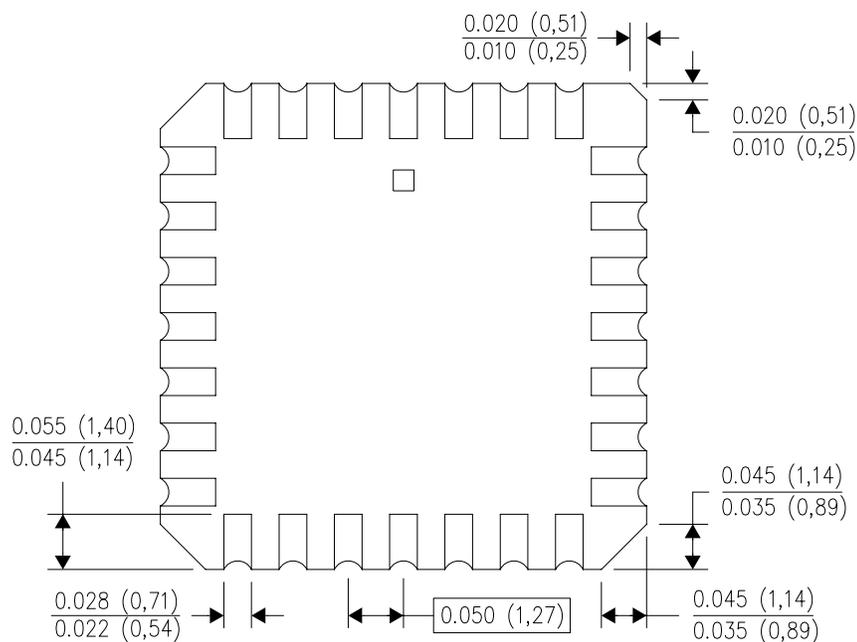
FK (S-CQCC-N\*\*)

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



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



4040140/D 01/11

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

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

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN

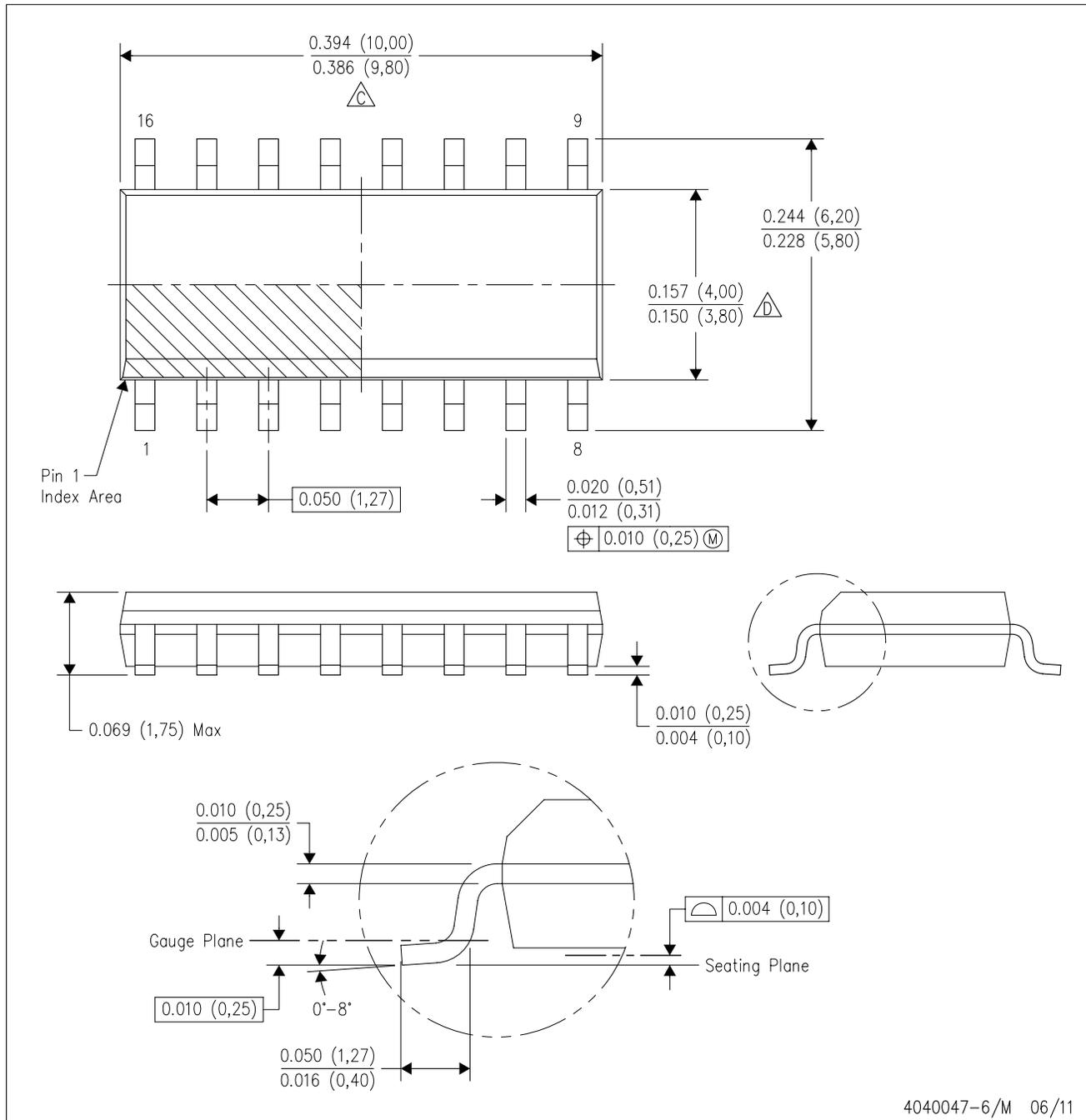


- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - $\triangle C$  Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - $\triangle D$  The 20 pin end lead shoulder width is a vendor option, either half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

4040049/E 12/2002

D (R-PDSO-G16)

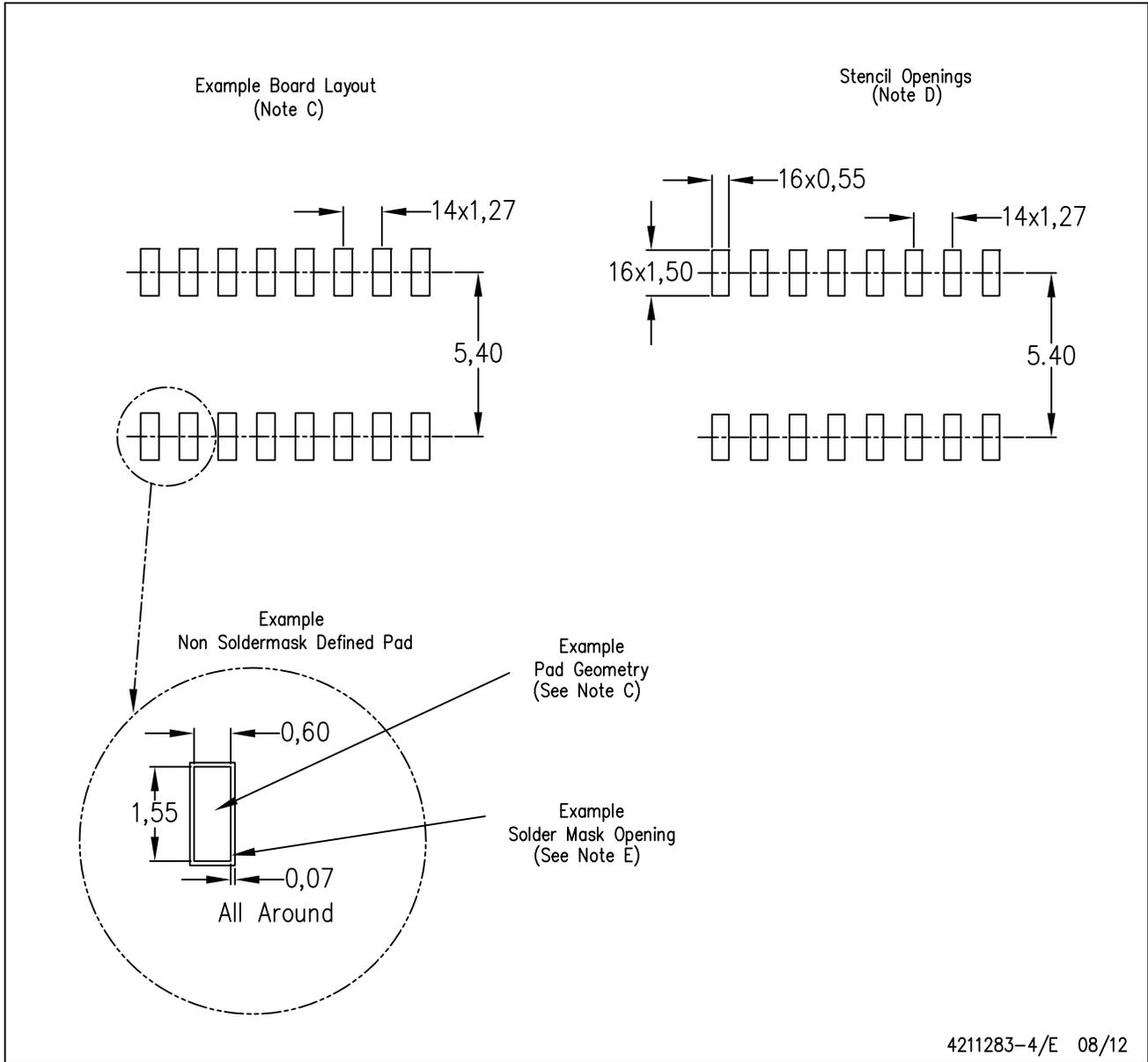
PLASTIC SMALL OUTLINE



- 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)

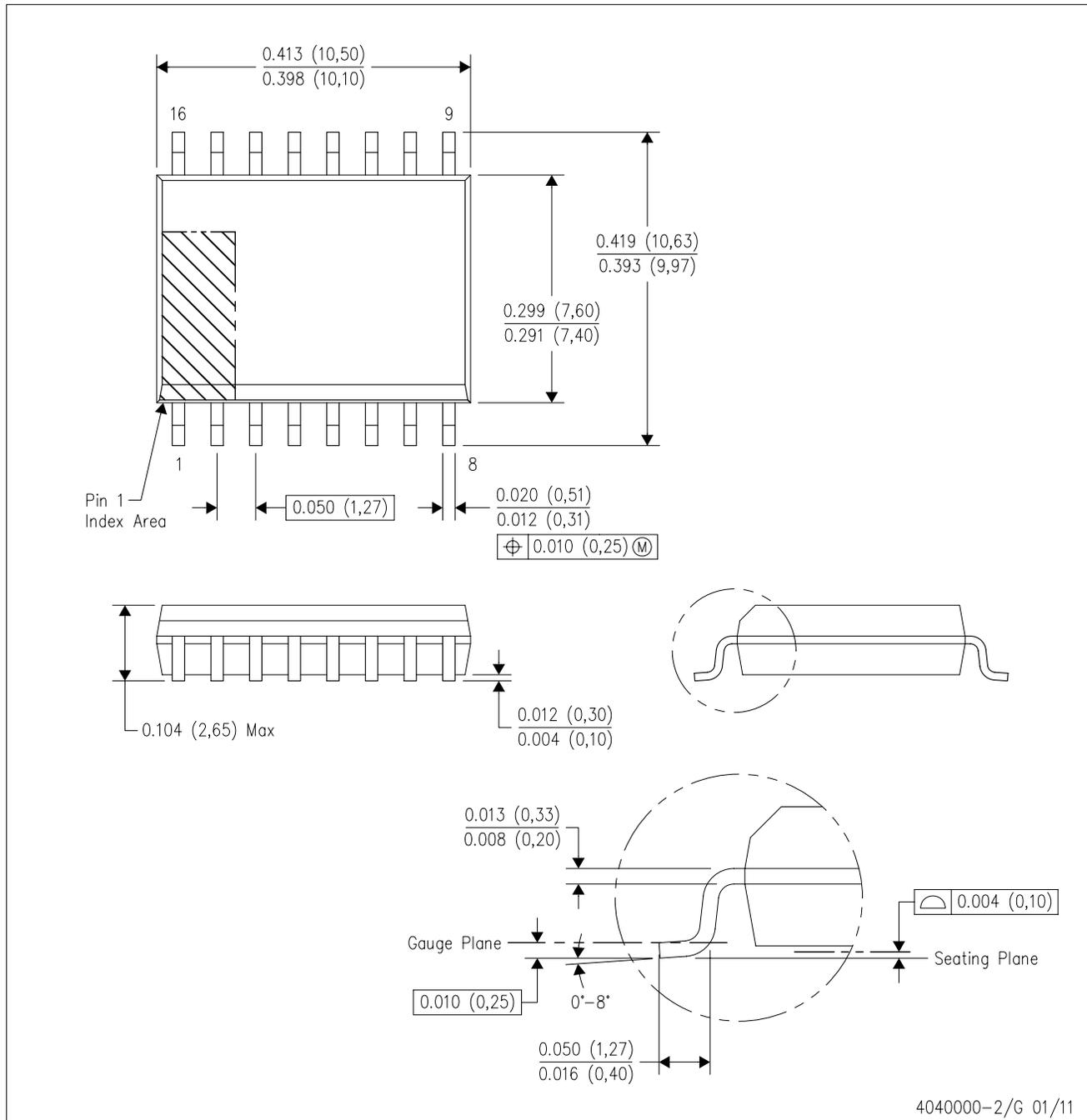
PLASTIC SMALL OUTLINE



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

DW (R-PDSO-G16)

PLASTIC SMALL OUTLINE



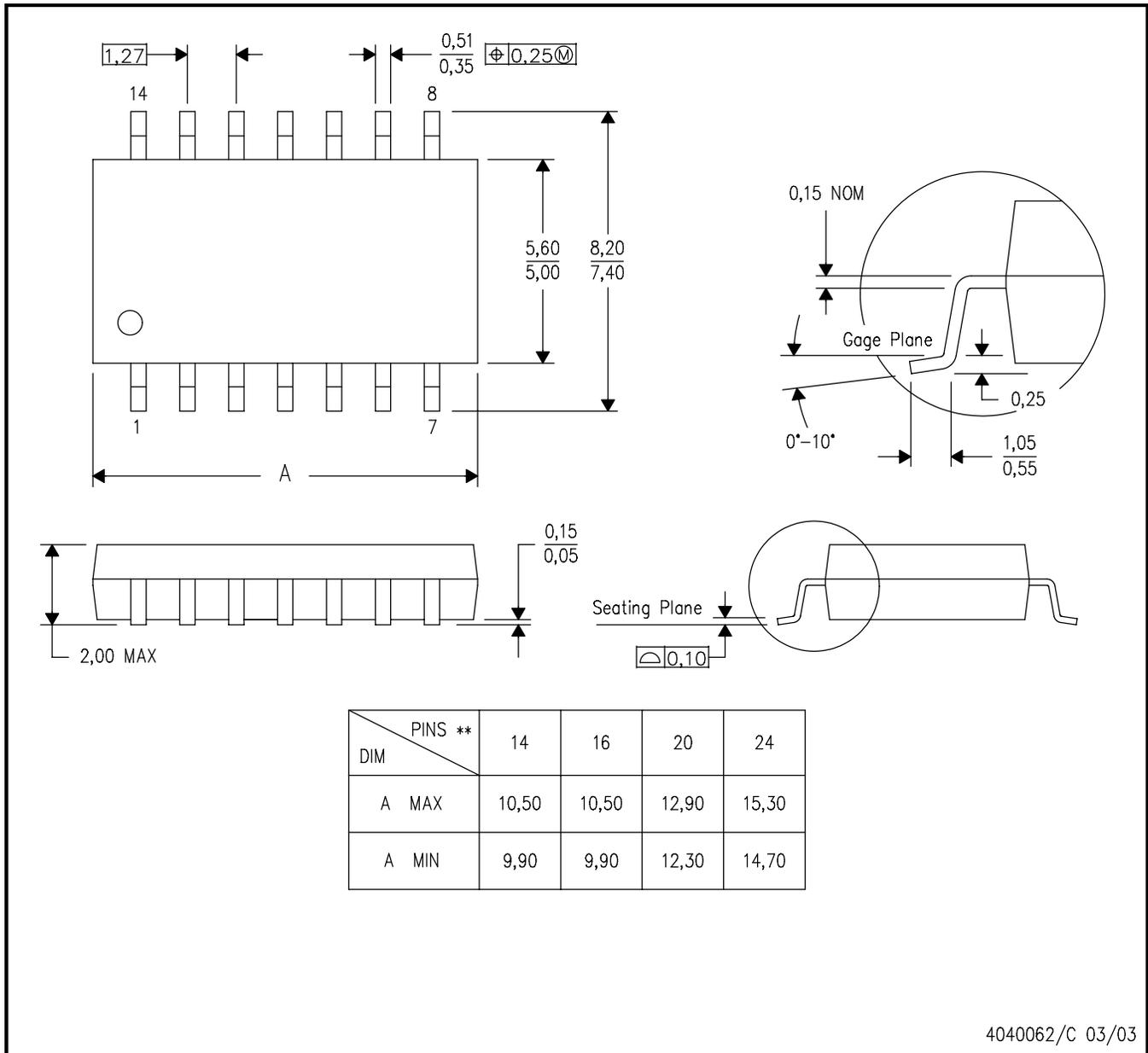
- NOTES:
- A. All linear dimensions are in inches (millimeters). Dimensioning and tolerancing per ASME Y14.5M-1994.
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
  - D. Falls within JEDEC MS-013 variation AA.

# 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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|                               |                                                                                          |
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