

SN5423, SN5425, SN7423, SN7425 DUAL 4-INPUT NOR GATES WITH STROBE

SDLS082

DECEMBER 1983—REVISED MARCH 1988

- Package Options Include Plastic and Ceramic DIPs and Ceramic Flat Packages
- Dependable Texas Instruments Quality and Reliability

description

These devices contain dual 4-input positive NOR gates with strobe. They perform the Boolean function:

$$Y = \overline{G(A+B+C+D)}$$

(with 1X and 1X̄ of '23 left open).

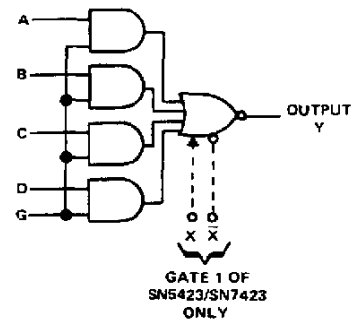
The SN5423 and the SN5425 are characterized for operation over the full military temperature range of -55°C to 125°C. The SN7423 and the SN7425 are characterized for operation from 0°C to 70°C.

FUNCTION TABLE

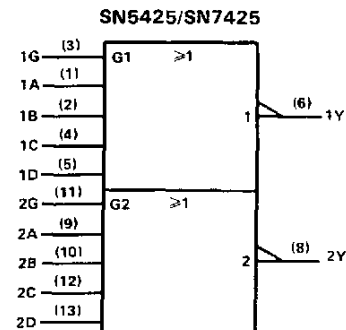
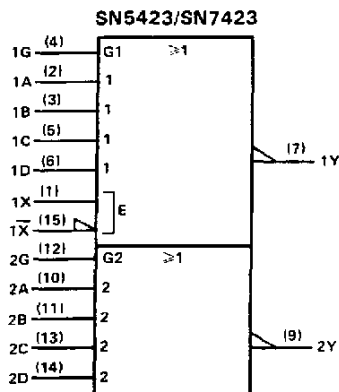
| INPUTS | | | | | OUTPUT |
|--------|---|---|---|---|--------|
| A | B | C | D | G | Y |
| H | X | X | X | H | L |
| X | H | X | X | H | L |
| X | X | H | X | H | L |
| X | X | X | H | H | L |
| L | L | L | L | X | H |
| X | X | X | X | L | H |

Expander inputs are open,
H = high level, L = low level, X = irrelevant

logic diagram



logic symbols†



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

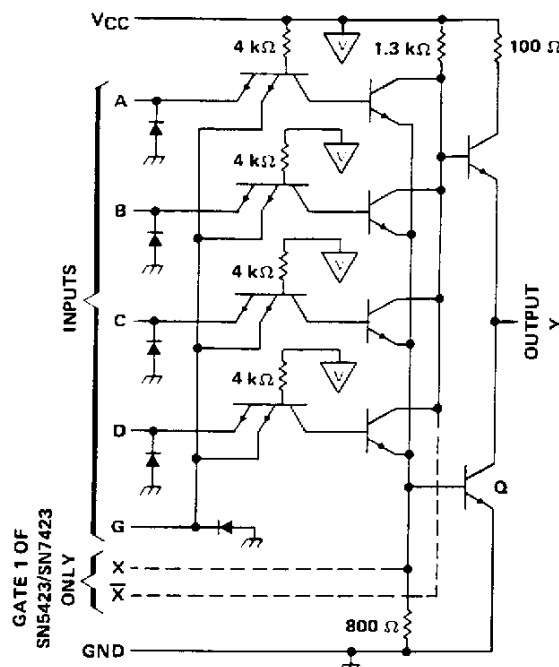
PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

TEXAS
INSTRUMENTS

POST OFFICE BOX 655012 • DALLAS, TEXAS 75265

SN5423, SN5425, SN7423, SNSN7425 DUAL 4-INPUT NOR GATES WITH STROBE

schematic (each gate)



- NOTES: A. Component values shown are nominal.
 B. Both expander inputs are used simultaneously for expanding.
 C. If expander is not used leave X and X open.
 D. A total of four expander gates can be connected to the expander inputs.
 V - VCC bus

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

| | |
|---|----------------|
| Supply voltage V_{CC} (see Note 1) | 7 V |
| Input voltage (see Note 1) | 5.5 V |
| Interemitter voltage (see Note 2) | 5.5 V |
| Operating free-air temperature range: SN5423, SN5425 Circuits | -55°C to 125°C |
| SN7423, SN7425 Circuits | 0°C to 70°C |
| Storage temperature range | -65°C to 150°C |

- NOTES: 1. Voltage values, except interemitter voltage, are with respect to network ground terminal.
 2. This is the voltage between two emitters of a multiple-emitter transistor.

recommended operating conditions

| | | '23, '25 | | | UNIT |
|--|-----------|----------|-----|------|------|
| | | MIN | NOM | MAX | |
| V_{CC} Supply voltage | 54 Family | 4.5 | 5 | 5.5 | V |
| | 74 Family | 4.75 | 5 | 5.25 | |
| V_{IH} High-level input voltage | | 2 | | | V |
| V_{IL} Low-level input voltage | | | | 0.8 | V |
| I_{OH} High-level output current | | | | -0.8 | mA |
| I_{OL} Low-level output current | 54 Family | | | 16 | mA |
| | 74 Family | | | 16 | |
| T_A Operating free-air temperature range | 54 Family | -55 | | 125 | °C |
| | 74 Family | 0 | | 70 | |

The '23 is designed for use with up to four '60 expanders.

TEXAS
INSTRUMENTS

POST OFFICE BOX 655012 • DALLAS, TEXAS 75265

SN5423, SN5425, SN7423, SN7425 DUAL 4-INPUT NOR GATES WITH STROBE

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

| PARAMETER | | TEST CONDITIONS† | MIN | TYP‡ | MAX | UNIT |
|------------|---------------|---|-----|------|------|---------------|
| V_I | | $V_{CC} = \text{MIN}, I_I = -12 \text{ mA}$ | | | -1.5 | V |
| V_{OH} | | $V_{CC} = \text{MIN}, V_{IL} = 0.8 \text{ V}, I_{OH} = -0.8 \text{ mA}$ | 2.4 | 3.4 | | V |
| V_{OL} | | $V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, I_{OL} = 16 \text{ mA}$ | | 0.2 | 0.4 | V |
| I_I | | $V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$ | | | 1 | mA |
| I_{IH} | data inputs | $V_{CC} = \text{MAX}, V_I = 2.4 \text{ V}$ | | | 40 | μA |
| | strobe inputs | | | | 160 | |
| I_{IL} | data inputs | $V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$ | | | -1.6 | mA |
| | strobe inputs | | | | -6.4 | |
| $I_{OS}\S$ | | $V_{CC} = \text{MAX}$ | | | | mA |
| | | 54 Family | -20 | | -55 | |
| | | 74 Family | -18 | | -55 | |
| I_{CCH} | | $V_{CC} = \text{MAX}, \text{All inputs at } 0 \text{ V}$ | | 8 | 16 | mA |
| I_{CCL} | | $V_{CC} = \text{MAX}, \text{All inputs at } 5 \text{ V}$ | | 10 | 19 | mA |

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type. Expander inputs X and \bar{X} are open.

‡ 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.

electrical characteristics (SN5423 circuits) using expander inputs, $V_{CC} = 4.5 \text{ V}, T_A = -55^\circ\text{C}$

| PARAMETER | TEST CONDITIONS | MIN | TYP† | MAX | UNIT |
|---|---|-----|------|------|------|
| $I_{\bar{X}}$ Expander current | $V_{X\bar{X}} = 0.4 \text{ V}, I_{OL} = 16 \text{ mA}$ | | | -3.5 | mA |
| $V_{BE(Q)}$ Base-Emitter voltage of output transistor (Q) | $I_{OL} = 16 \text{ mA}, I_X + I_{\bar{X}} = 0.41 \text{ mA}, R_{X\bar{X}} = 0$ | | | 1.1 | V |
| V_{OH} High-level output voltage | $I_{OH} = -0.4 \text{ mA}, I_X = 0.15 \text{ mA}, I_{\bar{X}} = -0.15 \text{ mA}$ | 2.4 | 3.4 | | V |
| V_{OL} Low-level output voltage | $I_{OL} = 16 \text{ mA}, I_X + I_{\bar{X}} = 0.3 \text{ mA}, R_{X\bar{X}} = 114 \Omega$ | | 0.2 | 0.4 | V |

electrical characteristics (SN7423 circuits) using expander inputs, $V_{CC} = 4.75 \text{ V}, T_A = 0^\circ\text{C}$

| PARAMETER | TEST CONDITIONS | MIN | TYP† | MAX | UNIT |
|---|--|-----|------|------|------|
| $I_{\bar{X}}$ Expander current | $V_{X\bar{X}} = 0.4 \text{ V}, I_{OL} = 16 \text{ mA}$ | | | -3.8 | mA |
| $V_{BE(Q)}$ Base-Emitter voltage of output transistor (Q) | $I_{OL} = 16 \text{ mA}, I_X + I_{\bar{X}} = 0.62 \text{ mA}, R_{X\bar{X}} = 0$ | | | 1 | V |
| V_{OH} High-level output voltage | $I_{OH} = -0.4 \text{ mA}, I_X = 0.27 \text{ mA}, I_{\bar{X}} = -0.27 \text{ mA}$ | 2.4 | 3.4 | | V |
| V_{OL} Low-level output voltage | $I_{OL} = 16 \text{ mA}, I_X + I_{\bar{X}} = 0.43 \text{ mA}, R_{X\bar{X}} = 130 \Omega$ | | 0.2 | 0.4 | V |

† All typical values are at $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}$.

switching characteristics, $V_{CC} = 5 \text{ V}, T_A = 25^\circ\text{C}, N = 10$, (see note 3)

| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|-----------|---|-----|-----|-----|------|
| t_{PLH} | $R_L = 400 \Omega, C_L = 15 \text{ pF}$ | | 13 | 22 | ns |
| t_{PHL} | $R_L = 400 \Omega, C_L = 15 \text{ pF}$ | | 8 | 15 | ns |

NOTE 3: Switching characteristics of the SN5423 and SN7424 are tested with the expander pins open.

PACKAGING INFORMATION

| Orderable Device | Status ⁽¹⁾ | Package Type | Package Drawing | Pins | Package Qty | Eco Plan ⁽²⁾ | Lead/Ball Finish | MSL Peak Temp ⁽³⁾ |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| 5962-9763601QEA | ACTIVE | CDIP | J | 16 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| JM38510/00403BCA | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| JM38510/00403BCA | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SN5423J | ACTIVE | CDIP | J | 16 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SN5423J | ACTIVE | CDIP | J | 16 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SN5425J | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SN5425J | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SN7423N | OBSOLETE | PDIP | N | 16 | | TBD | Call TI | Call TI |
| SN7423N | OBSOLETE | PDIP | N | 16 | | TBD | Call TI | Call TI |
| SN7425N | ACTIVE | PDIP | N | 14 | 25 | Pb-Free (RoHS) | CU NIPDAU | N / A for Pkg Type |
| SN7425N | ACTIVE | PDIP | N | 14 | 25 | Pb-Free (RoHS) | CU NIPDAU | N / A for Pkg Type |
| SN7425N3 | OBSOLETE | PDIP | N | 14 | | TBD | Call TI | Call TI |
| SN7425N3 | OBSOLETE | PDIP | N | 14 | | TBD | Call TI | Call TI |
| SN7425NE4 | ACTIVE | PDIP | N | 14 | 25 | Pb-Free (RoHS) | CU NIPDAU | N / A for Pkg Type |
| SN7425NE4 | ACTIVE | PDIP | N | 14 | 25 | Pb-Free (RoHS) | CU NIPDAU | N / A for Pkg Type |
| SNJ5423J | ACTIVE | CDIP | J | 16 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SNJ5423J | ACTIVE | CDIP | J | 16 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SNJ5423W | OBSOLETE | | | 16 | | TBD | Call TI | Call TI |
| SNJ5423W | OBSOLETE | | | 16 | | TBD | Call TI | Call TI |
| SNJ5425J | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SNJ5425J | ACTIVE | CDIP | J | 14 | 1 | TBD | A42 SNPB | N / A for Pkg Type |
| SNJ5425W | ACTIVE | CFP | W | 14 | 1 | TBD | A42 | N / A for Pkg Type |
| SNJ5425W | ACTIVE | CFP | W | 14 | 1 | TBD | A42 | N / A for Pkg Type |

⁽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.

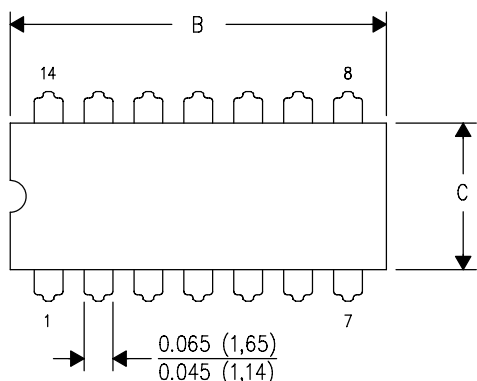
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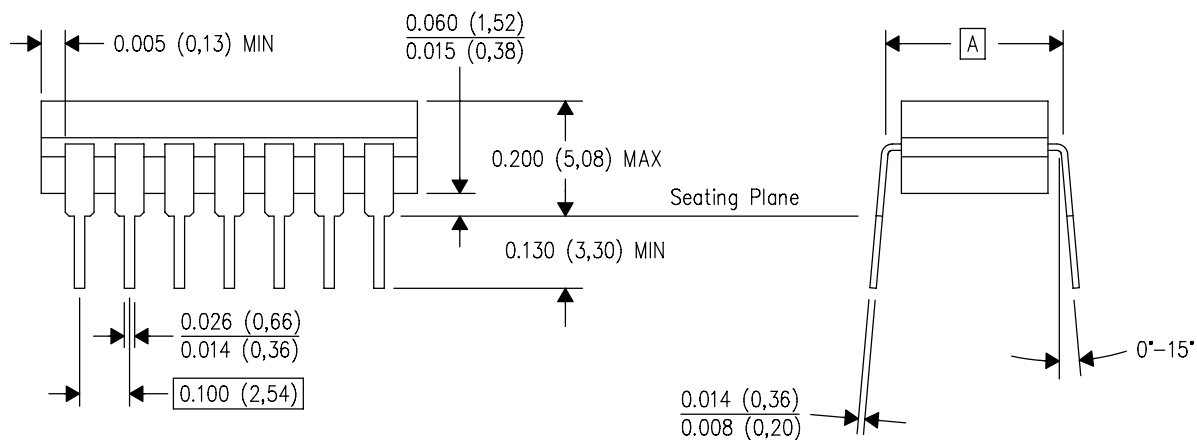
J (R-GDIP-T**)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



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

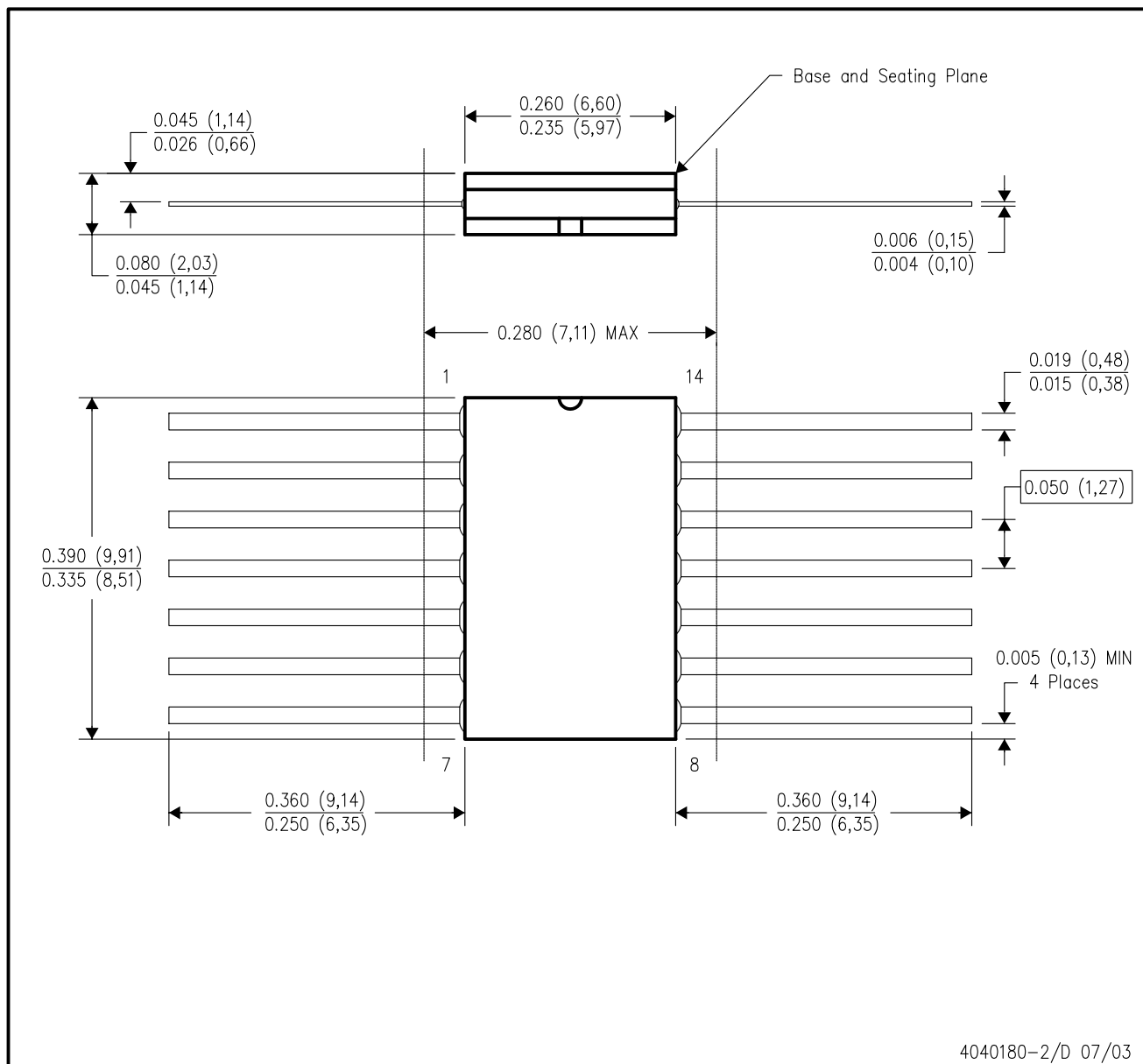


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- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package is hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal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

W (R-GDFP-F14)

CERAMIC DUAL FLATPACK

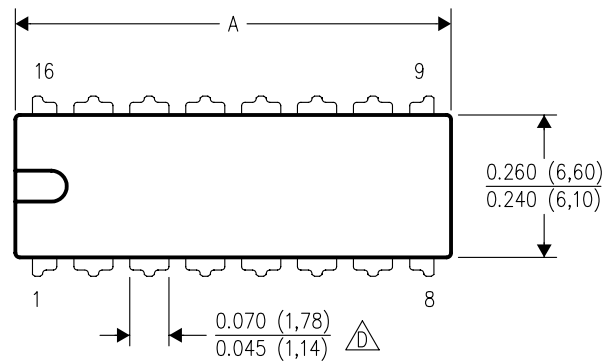


- NOTES:
- All linear dimensions are in inches (millimeters).
 - This drawing is subject to change without notice.
 - This package can be hermetically sealed with a ceramic lid using glass frit.
 - Index point is provided on cap for terminal identification only.
 - Falls within MIL STD 1835 GDFP1-F14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

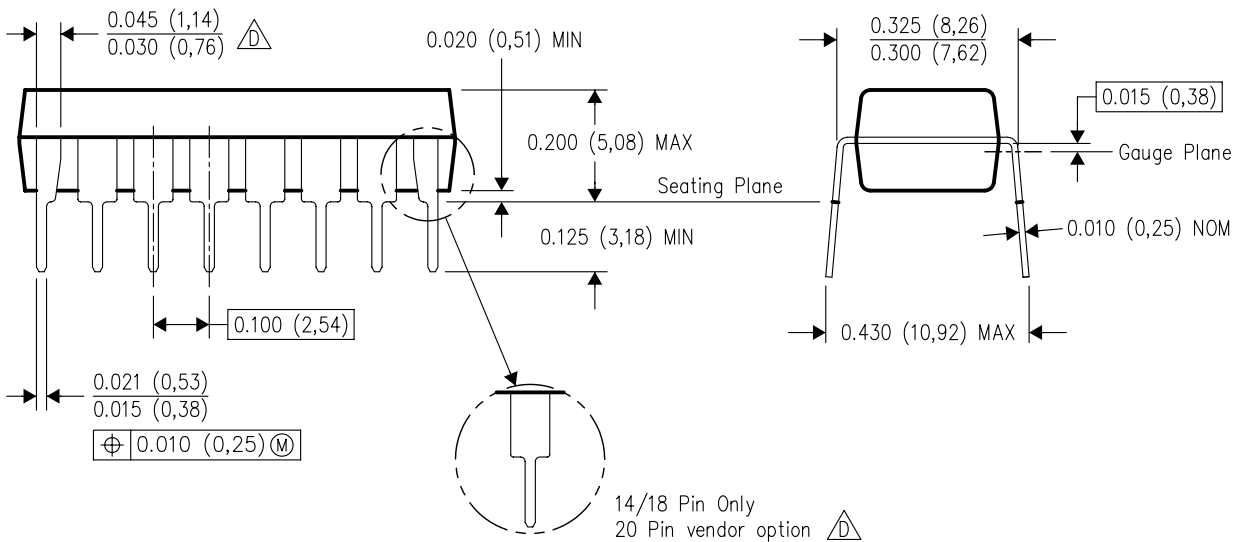
N (R-PDIP-T**)

16 PINS SHOWN

PLASTIC DUAL-IN-LINE PACKAGE



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



4040049/E 12/2002

- NOTES:
- All linear dimensions are in inches (millimeters).
 - 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.

PACKAGING INFORMATION

| Orderable part number | Status (1) | Material type (2) | Package Pins | Package qty Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|----------------------------------|---------------|----------------------|----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|--------------|---------------------------------|
| 5962-9763601QEA | Active | Production | CDIP (J) 16 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 5962-9763601QE A SNJ5423J |
| JM38510/00403BCA | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 00403BCA |
| JM38510/00403BCA | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 00403BCA |
| SN5425J | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN5425J |
| SN5425J | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN5425J |
| SN7425N | Active | Production | PDIP (N) 14 | 25 TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN7425N |
| SN7425N | Active | Production | PDIP (N) 14 | 25 TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN7425N |
| SNJ5423J | Active | Production | CDIP (J) 16 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 5962-9763601QE A SNJ5423J |
| SNJ5423J | Active | Production | CDIP (J) 16 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 5962-9763601QE A SNJ5423J |
| SNJ5425J | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SNJ5425J |
| SNJ5425J | Active | Production | CDIP (J) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SNJ5425J |
| SNJ5425W | Active | Production | CFP (W) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SNJ5425W |
| SNJ5425W | Active | Production | CFP (W) 14 | 25 TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SNJ5425W |

⁽¹⁾ **Status:** For more details on status, see our [product life cycle](#).

⁽²⁾ **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

⁽³⁾ **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

⁽⁴⁾ **Lead finish/Ball material:** Parts 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.

⁽⁵⁾ **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

⁽⁶⁾ **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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OTHER QUALIFIED VERSIONS OF SN5425, SN7425 :

- Catalog : [SN7425](#)
- Military : [SN5425](#)

NOTE: Qualified Version Definitions:

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

TUBE

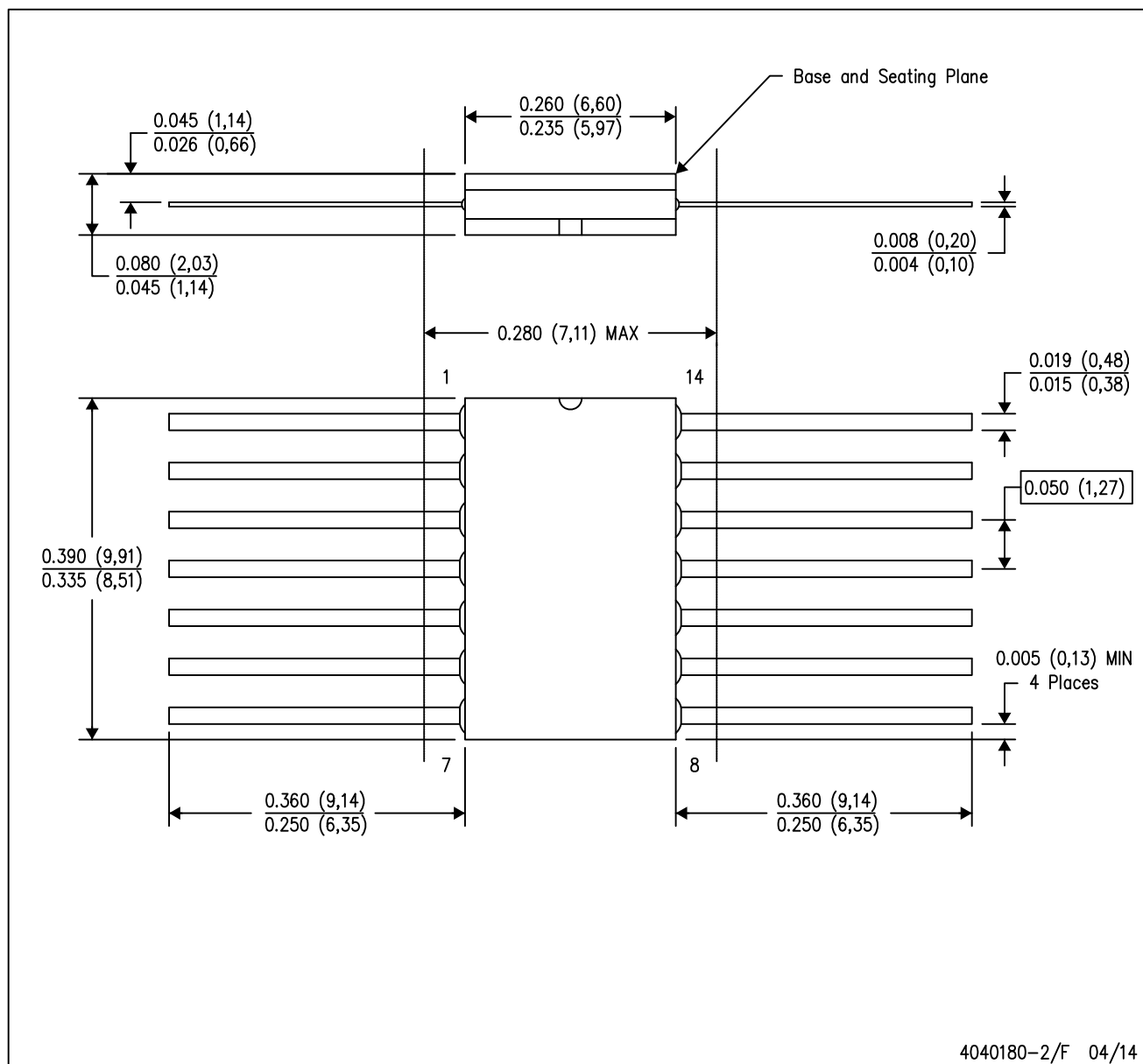


*All dimensions are nominal

| Device | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T (μm) | B (mm) |
|----------|--------------|--------------|------|-----|--------|--------|--------|--------|
| SN7425N | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN7425N | N | PDIP | 14 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SNJ5425W | W | CFP | 14 | 25 | 506.98 | 26.16 | 6220 | NA |

W (R-GDFP-F14)

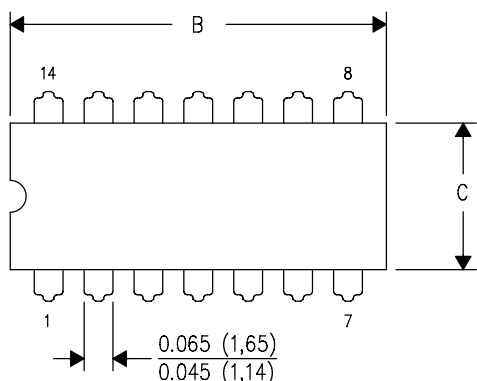
CERAMIC DUAL FLATPACK



J (R-GDIP-T**)

14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



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



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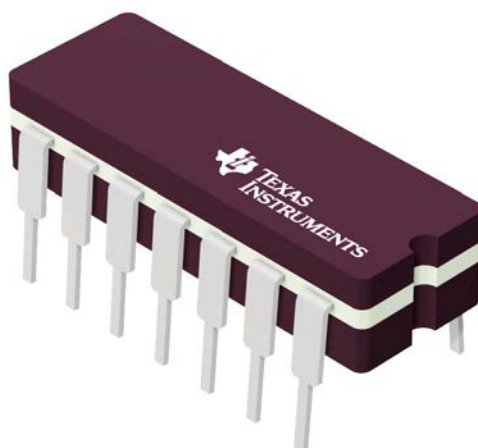
- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package is hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only on press ceramic glass frit seal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

J 14

GENERIC PACKAGE VIEW

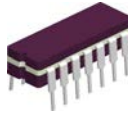
CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE

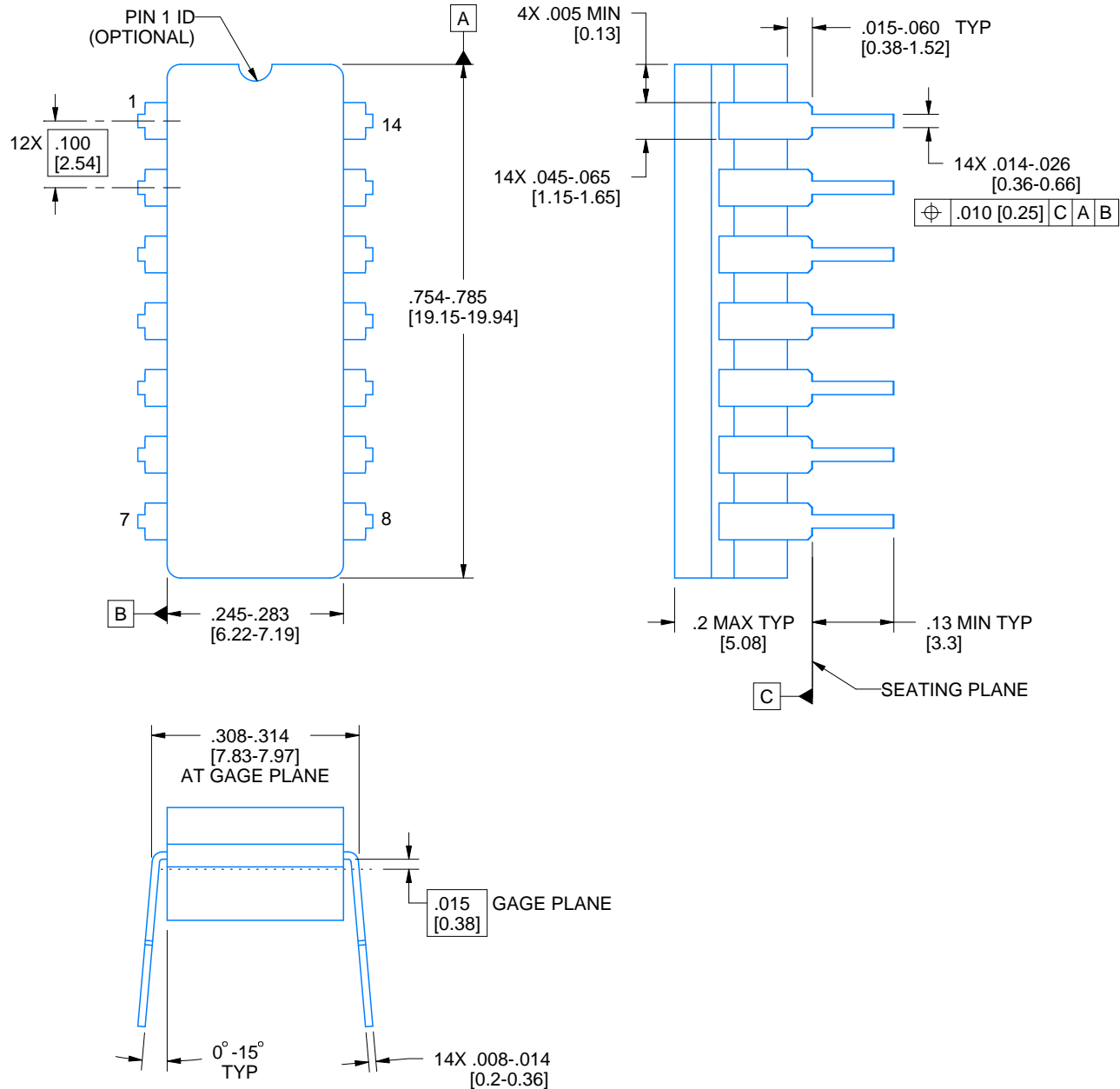


Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

4040083-5/G

J0014A**PACKAGE OUTLINE****CDIP - 5.08 mm max height**

CERAMIC DUAL IN LINE PACKAGE



4214771/A 05/2017

NOTES:

1. All controlling linear dimensions are in inches. Dimensions in brackets are in millimeters. Any dimension in brackets or parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This package is hermetically sealed with a ceramic lid using glass frit.
4. Index point is provided on cap for terminal identification only and on press ceramic glass frit seal only.
5. Falls within MIL-STD-1835 and GDIP1-T14.



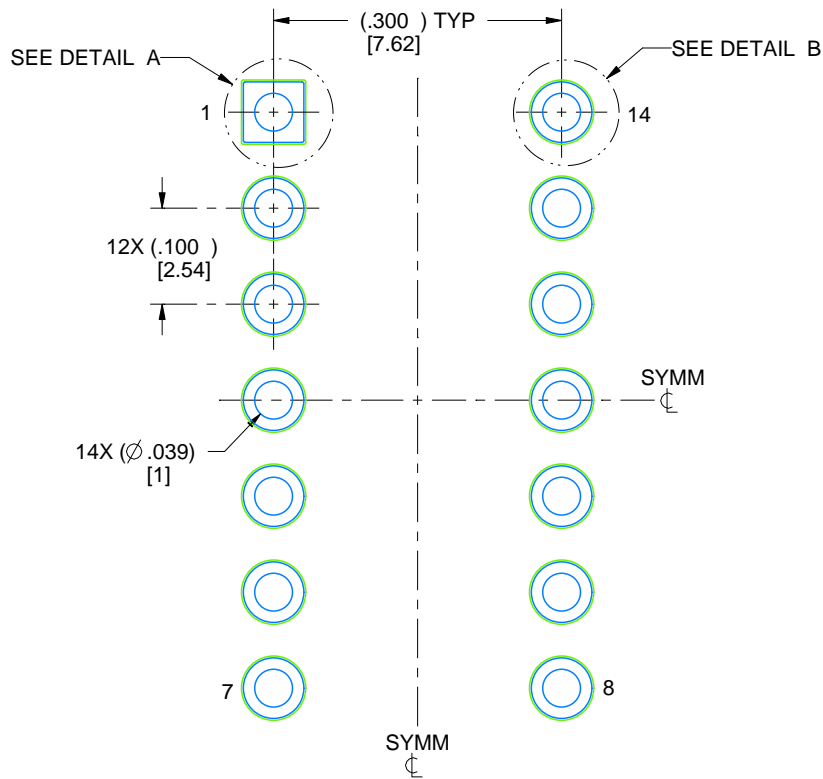
**TEXAS
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EXAMPLE BOARD LAYOUT

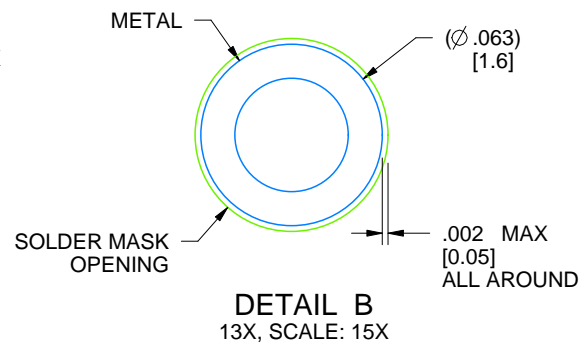
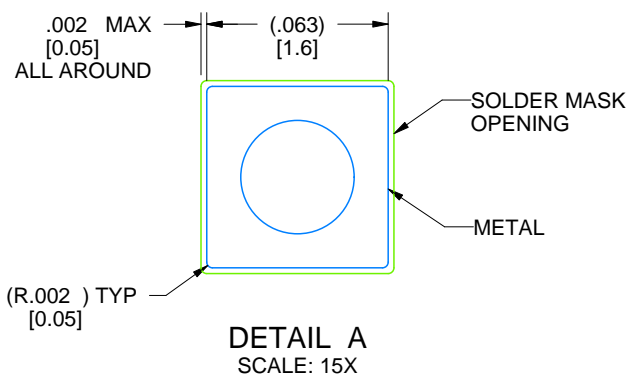
J0014A

CDIP - 5.08 mm max height

CERAMIC DUAL IN LINE PACKAGE



LAND PATTERN EXAMPLE
NON-SOLDER MASK DEFINED
SCALE: 5X

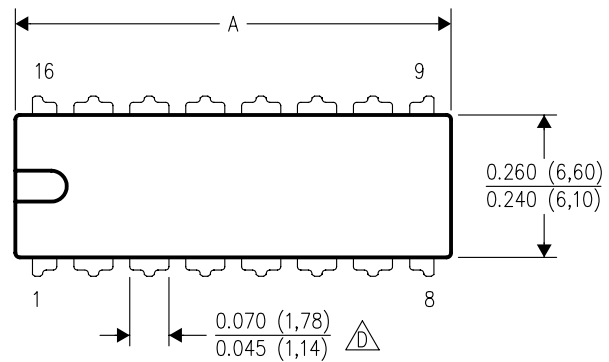


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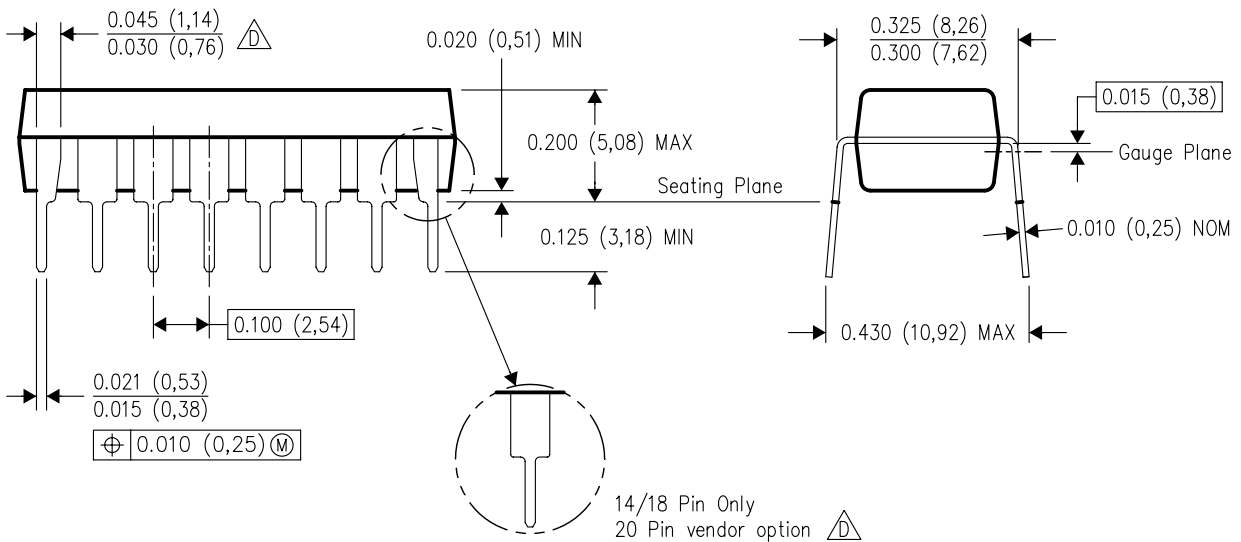
N (R-PDIP-T**)

16 PINS SHOWN

PLASTIC DUAL-IN-LINE PACKAGE



| PINS ** | 14 | 16 | 18 | 20 |
|---------------------|------------------|------------------|------------------|------------------|
| DIM | | | | |
| A MAX | 0.775 (19,69) | 0.775 (19,69) | 0.920 (23,37) | 1.060 (26,92) |
| A MIN | 0.745 (18,92) | 0.745 (18,92) | 0.850 (21,59) | 0.940 (23,88) |
| MS-001 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.

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