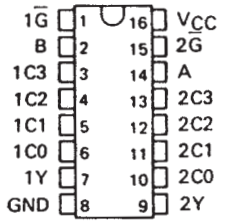
# SN54LS253, SN54S253, SN74LS253, SN74S253
# DUAL 4-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS WITH 3-STATE OUTPUTS

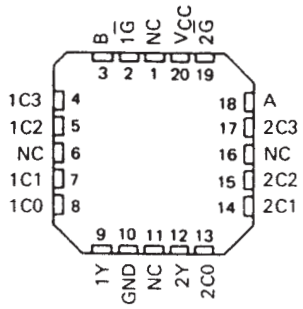
SDLS147 – SEPTEMBER 1972 – REVISED MARCH 1988

- **Three-State Version of SN54/74LS153, SN54/74S153**
- **Schottky-Diode-Clamped Transistors**
- **Permits Multiplexing from N Lines to 1 Line**
- **Performs Parallel-to Serial Conversion**
- **Fully Compatible with Most TTL Circuits**
- **Low Power Dissipation**
  **'LS253 . . . 35 mW Typical**
  **'S253 . . . 225 mW Typical**

**SN54LS253, SN54S253 . . . J OR W PACKAGE**
**SN74LS253, SN74S253 . . . D OR N PACKAGE**
**(TOP VIEW)**




**SN54LS253, SN54S253 . . . FK PACKAGE**
**(TOP VIEW)**




NC-No internal connection

## description

Each of these Schottky-clamped data selectors/multiplexers contains inverters and drivers to supply fully complementary, on-chip, binary decoding data selection to the AND-OR gates. Separate output control inputs are provided for each of the two four-line sections.

The three-state outputs can interface with and drive data lines of bus-organized systems. With all but one of the common outputs disabled (at a high-impedance state) the low-impedance of the single enabled output will drive the bus line to a high or low logic level.

**FUNCTION TABLE**

| SELECT INPUTS | | DATA INPUTS | | | | OUTPUT CONTROL | OUTPUT |
|---|---|---|---|---|---|---|---|
| B | A | C0 | C1 | C2 | C3 | $\overline{G}$ | Y |
| X | X | X | X | X | X | H | Z |
| L | L | L | X | X | X | L | L |
| L | L | H | X | X | X | L | H |
| L | H | X | L | X | X | L | L |
| L | H | X | H | X | X | L | H |
| H | L | X | X | L | X | L | L |
| H | L | X | X | H | X | L | H |
| H | H | X | X | X | L | L | L |
| H | H | X | X | X | H | L | H |

Address inputs A and B are common to both sections.

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

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

Supply voltage, $V_{CC}$ (see Note 1) . . . . . 7 V
Input voltage: 'LS253 . . . . . 7 V
'S253 . . . . . 5.5 V
Off-state output voltage . . . . . 5.5 V
Operating free-air temperature range: SN54LS253, SN54S253 . . . . . – 55°C to 125°C
SN74LS253, SN74S253 . . . . . 0°C to 70°C
Storage temperature range . . . . . – 65°C to 150°C

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

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.

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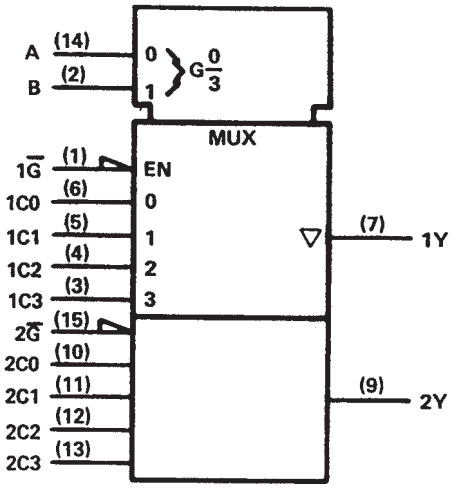
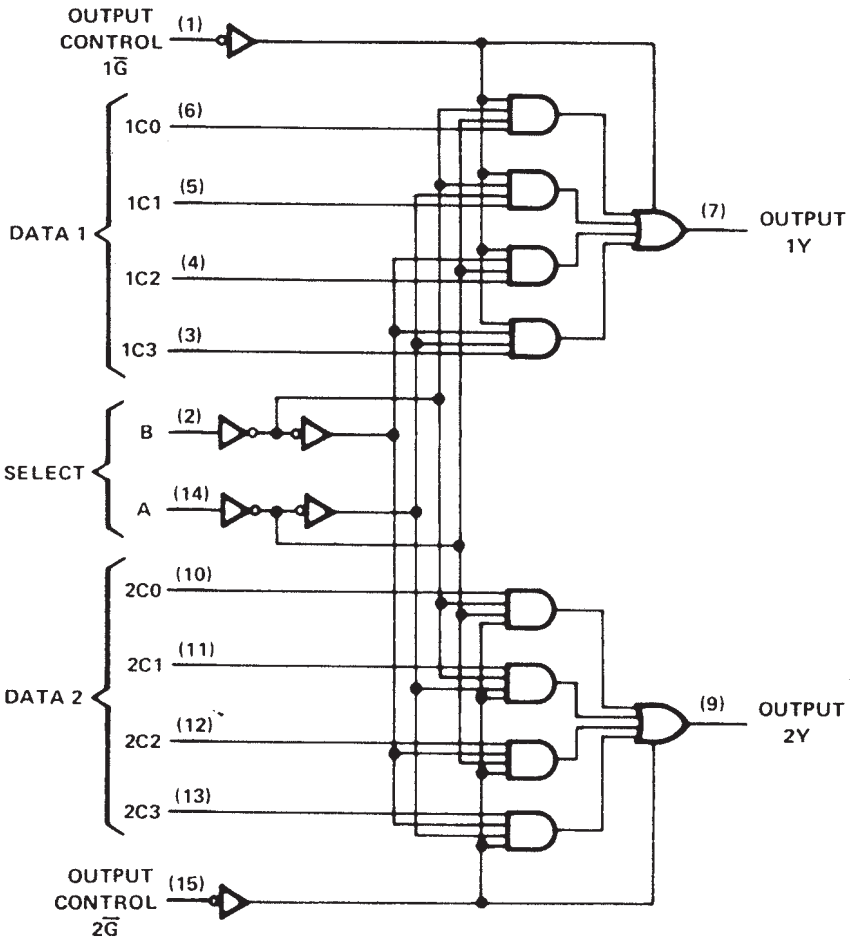
### logic symbol†



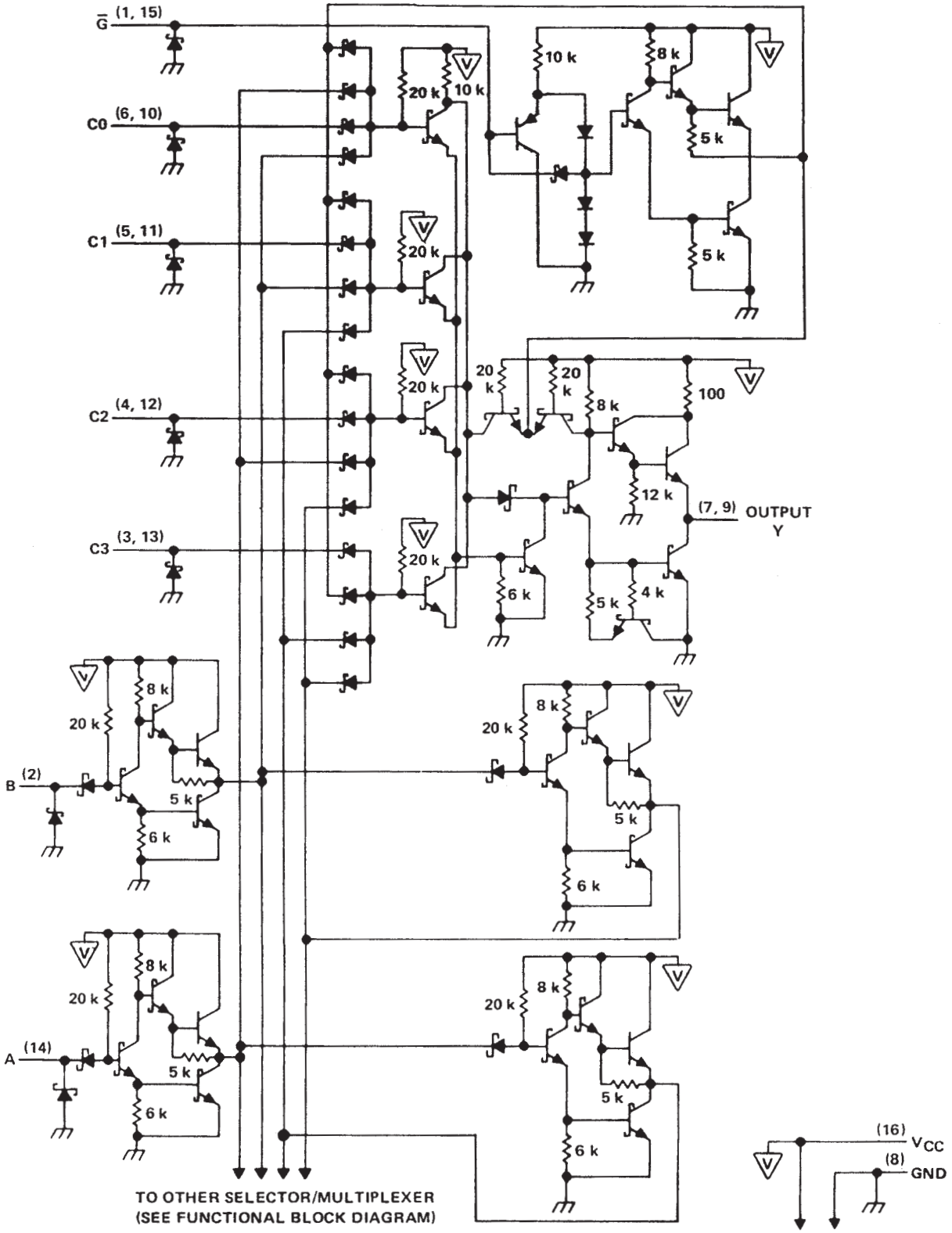

† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

### logic diagram (positive logic)




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

schematic (each selector/multiplexer, and the common select section)




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

## recommended operating conditions

| | | SN54LS253 | | | SN74LS253 | | | UNIT |
|---|---|---|---|---|---|---|---|---|
| | | MIN | NOM | MAX | MIN | NOM | MAX | |
| $V_{CC}$ | Supply voltage | 4.5 | 5 | 5.5 | 4.75 | 5 | 5.25 | V |
| $V_{IH}$ | High-level input voltage | 2 | | | 2 | | | V |
| $V_{IL}$ | Low-level input voltage | | | 0.7 | | | 0.8 | V |
| $I_{OH}$ | High-level output current | | | – 1 | | | – 2.6 | mA |
| $I_{OL}$ | Low-level output current | | | 4 | | | 8 | mA |
| $T_A$ | Operating free-air temperature | – 55 | | 125 | 0 | | 70 | °C |

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

| PARAMETER | TEST CONDITIONS† | | | SN54LS253 | | | SN74LS253 | | | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MIN | TYP‡ | MAX | MIN | TYP‡ | MAX | |
| $V_{IK}$ | $V_{CC}$ = MIN, $I_I$ = – 18 mA | | | | | – 1.5 | | | – 1.5 | V |
| $V_{OH}$ | $V_{CC}$ = MIN, $V_{IH}$ = 2 V, $V_{IL}$ = MAX, | | $I_{OH}$ = MAX | 2.4 | 3.4 | | 2.4 | 3.1 | | V |
| $V_{OL}$ | $V_{CC}$ = MIN, $V_{IH}$ = 2 V, $V_{IL}$ = MAX | | $I_{OL}$ = 4 mA | | 0.25 | 0.4 | | 0.25 | 0.4 | V |
| | | | $I_{OL}$ = 8 mA | | | | | 0.25 | 0.5 | |
| $I_{OZ}$ | $V_{CC}$ = MAX, $V_{IH}$ = 2 V | | $V_O$ = 2.7 V | | | 20 | | | 20 | μA |
| | | | $V_O$ = 0.4 V | | | – 20 | | | – 20 | |
| $I_I$ | $V_{CC}$ = MAX, $V_I$ = 7 V | | | | | 0.1 | | | 0.1 | mA |
| $I_{IH}$ | $V_{CC}$ = MAX, $V_I$ = 2.7 V | | | | | 20 | | | 20 | μA |
| $I_{IL}$ | $V_{CC}$ = MAX, $V_I$ = 0.4 V | | $\overline{G}$ | | | – 0.2 | | | – 0.2 | mA |
| | | | All other | | | – 0.4 | | | – 0.4 | |
| $I_{OS}$§ | $V_{CC}$ = MAX | | | – 30 | | – 130 | – 30 | | – 130 | mA |
| $I_{CC}$ | $V_{CC}$ = MAX, See Note 2 | | Condition A | | 7 | 12 | | 7 | 12 | mA |
| | | | Condition B | | 8.5 | 14 | | 8.5 | 14 | |

† For conditions shown as MIN or MAX, use the appropriate value spcified under recommended operating conditions.
‡ All typical values are at $V_{CC}$ = 5 V, $T_A$ = 25°C.
§ Not more than one output should be shorted at a time, and duration for the short-circuit should exceed one second.
NOTE 2: $I_{CC}$ is measured with the outputs open under the following conditions:
A. All inputs grounded.
B. Output control at 4.5 V, all inputs grounded.

## switching characteristics, $V_{CC}$ = 5 V, $T_A$ = 25°C

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $t_{PLH}$ | Data | Y | $C_L$ = 15 pF, $R_L$ = 2 kΩ, See Note 3 | | 17 | 25 | ns |
| $t_{PHL}$ | | | | | 13 | 20 | |
| $t_{PLH}$ | Select | Y | | | 30 | 45 | ns |
| $t_{PHL}$ | | | | | 21 | 32 | |
| $t_{PZH}$ | Output Control | Y | | | 15 | 28 | ns |
| $t_{PZL}$ | | | | | 15 | 23 | |
| $t_{PHZ}$ | Output Control | Y | $C_L$ = 5 pF, $R_L$ = 2 kΩ, See Note 3 | | 27 | 41 | ns |
| $t_{PLZ}$ | | | | | 18 | 27 | |

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

## recommended operating conditions

| | SN54S253 | | | SN74S253 | | | UNIT |
|---|---|---|---|---|---|---|---|
| | MIN | NOM | MAX | MIN | NOM | MAX | |
| $V_{CC}$ Supply voltage | 4.5 | 5 | 5.5 | 4.75 | 5 | 5.25 | V |
| $V_{IH}$ High-level input voltage | 2 | | | 2 | | | V |
| $V_{IL}$ Low-level input voltage | | | 0.8 | | | 0.8 | V |
| $I_{OH}$ High-level output current | | | −2 | | | −6.5 | mA |
| $I_{OL}$ Low-level output current | | | 20 | | | 20 | mA |
| $T_A$ Operating free-air temperature | −55 | | 125 | 0 | | 70 | °C |

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

| PARAMETER | TEST CONDITIONS† | | MIN | TYP‡ | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{IK}$ | $V_{CC}$ = MIN, $I_I$ = −18 mA | | | | −1.2 | V |
| $V_{OH}$ | $V_{CC}$ = MIN, $V_{IH}$ = 2 V, $V_{IL}$ = 0.8 V, $I_{OH}$ = MAX | Series 54S | 2.5 | 3.4 | | V |
| | | Series 74S | 2.7 | 3.4 | | |
| $V_{OL}$ | $V_{CC}$ = MIN, $V_{IH}$ = 2 V, $V_{IL}$ = 0.8 V, $I_{OL}$ = 20 mA | | | | 0.5 | V |
| $I_{OZ}$ | $V_{CC}$ = MAX, $V_{IH}$ = 2 V | $V_O$ = 2.4 V | | | 50 | μA |
| | | $V_O$ = 0.5 V | | | −50 | |
| $I_I$ | $V_{CC}$ = MAX, $V_I$ = 5.5 V | | | | 1 | mA |
| $I_{IH}$ | $V_{CC}$ = MAX, $V_I$ = 2.7 V | | | | 50 | μA |
| $I_{IL}$ | $V_{CC}$ = MAX, $V_I$ = 0.5 V | $\overline{G}$ = 0.8 V | | | −2 | mA |
| | | $\overline{G}$ = 2 V | | | −0.25 | |
| $I_{OS}$§ | $V_{CC}$ = MAX | | −40 | | −100 | mA |
| $I_{CC}$ | $V_{CC}$ = MAX, See Note 2 | Condition A | | 45 | 70 | mA |
| | | Condition B | | 65 | 85 | |

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at $V_{CC}$ = 5 V, $T_A$ = 25°C.
§ Not more than one output should be shorted at a time and duration of short-circuit should not exceed one second.
NOTE 2: $I_{CC}$ is measured with the outputs open under the following conditions:
A. All inputs grounded.
B. Output control at 4.5 V, all inputs grounded.

## switching characteristics, $V_{CC}$ = 5 V, $T_A$ = 25°C

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $t_{PLH}$ | Data | Y | $R_L$ = 280 Ω, $C_L$ = 15 pF, See Note 3 | | 6 | 9 | ns |
| $t_{PHL}$ | | | | | 6 | 9 | |
| $t_{PLH}$ | Select | Y | | | 11.5 | 18 | ns |
| $t_{PHL}$ | | | | | 12 | 18 | |
| $t_{PZH}$ | Output Control | Y | | | 11 | 16.5 | ns |
| $t_{PZL}$ | | | | | 12 | 18 | |
| $t_{PHZ}$ | Output Control | Y | $R_L$ = 280 Ω, $C_L$ = 5 pF, See Note 3 | | 6.5 | 9.5 | ns |
| $t_{PLZ}$ | | | | | 10 | 15 | |

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

## 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) |
|---|---|---|---|---|---|---|---|---|---|
| 76017012A | Active | Production | LCCC (FK) \| 20 | 55 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 76017012A SNJ54LS 253FK |
| 7601701EA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |
| 7601701EA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |
| JM38510/30908BEA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| JM38510/30908BEA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| JM38510/30908BEA.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| JM38510/30908BEA.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| JM38510/30908BFA | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| JM38510/30908BFA | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| JM38510/30908BFA.A | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| JM38510/30908BFA.A | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| M38510/30908BEA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| M38510/30908BEA | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BEA |
| M38510/30908BFA | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| M38510/30908BFA | Active | Production | CFP (W) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | JM38510/ 30908BFA |
| SN54LS253J | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN54LS253J |
| SN54LS253J | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN54LS253J |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| SN54LS253J.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN54LS253J |
| SN54LS253J.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | SN54LS253J |
| SN74LS253DR | Active | Production | SOIC (D) \| 16 | 2500 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS253 |
| SN74LS253DR | Active | Production | SOIC (D) \| 16 | 2500 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS253 |
| SN74LS253DR.A | Active | Production | SOIC (D) \| 16 | 2500 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS253 |
| SN74LS253DR.A | Active | Production | SOIC (D) \| 16 | 2500 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | 0 to 70 | LS253 |
| SN74LS253N | Active | Production | PDIP (N) \| 16 | 25 \| TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN74LS253N |
| SN74LS253N | Active | Production | PDIP (N) \| 16 | 25 \| TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN74LS253N |
| SN74LS253N.A | Active | Production | PDIP (N) \| 16 | 25 \| TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN74LS253N |
| SN74LS253N.A | Active | Production | PDIP (N) \| 16 | 25 \| TUBE | Yes | NIPDAU | N/A for Pkg Type | 0 to 70 | SN74LS253N |
| SNJ54LS253FK | Active | Production | LCCC (FK) \| 20 | 55 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 76017012A SNJ54LS 253FK |
| SNJ54LS253FK | Active | Production | LCCC (FK) \| 20 | 55 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 76017012A SNJ54LS 253FK |
| SNJ54LS253FK.A | Active | Production | LCCC (FK) \| 20 | 55 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 76017012A SNJ54LS 253FK |
| SNJ54LS253FK.A | Active | Production | LCCC (FK) \| 20 | 55 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 76017012A SNJ54LS 253FK |
| SNJ54LS253J | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |
| SNJ54LS253J | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |
| SNJ54LS253J.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |
| SNJ54LS253J.A | Active | Production | CDIP (J) \| 16 | 25 \| TUBE | No | SNPB | N/A for Pkg Type | -55 to 125 | 7601701EA SNJ54LS253J |

(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 SN54LS253, SN74LS253 :**

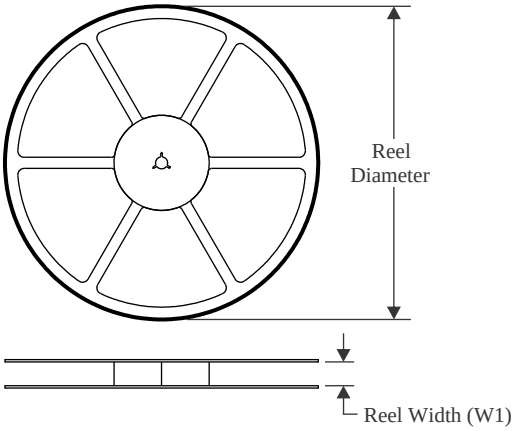
- Catalog : SN74LS253
- Military : SN54LS253

NOTE: Qualified Version Definitions:

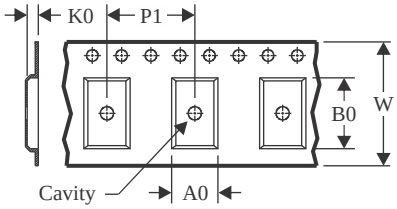
- Catalog - TI's standard catalog product
- Military - QML certified for Military and Defense Applications

## TAPE AND REEL INFORMATION

**REEL DIMENSIONS**

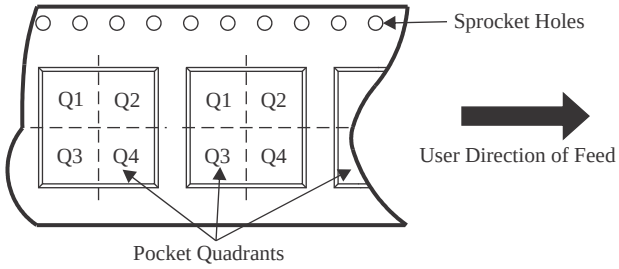



**TAPE DIMENSIONS**




| | |
|---|---|
| A0 | Dimension designed to accommodate the component width |
| B0 | Dimension designed to accommodate the component length |
| K0 | Dimension designed to accommodate the component thickness |
| W | Overall width of the carrier tape |
| P1 | Pitch between successive cavity centers |

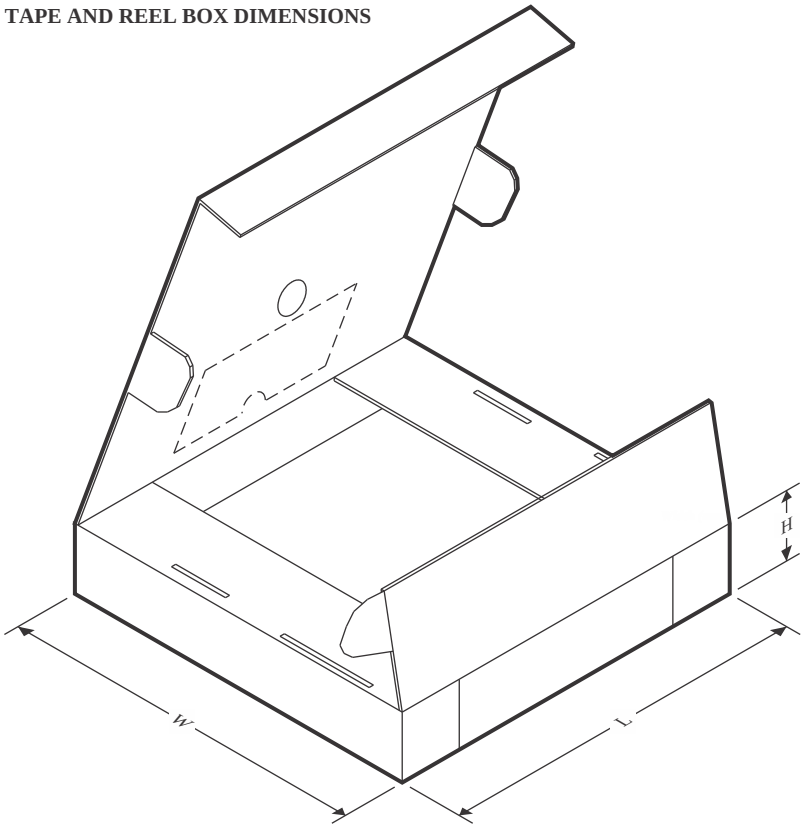
**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**




*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SN74LS253DR | SOIC | D | 16 | 2500 | 330.0 | 16.4 | 6.5 | 10.3 | 2.1 | 8.0 | 16.0 | Q1 |

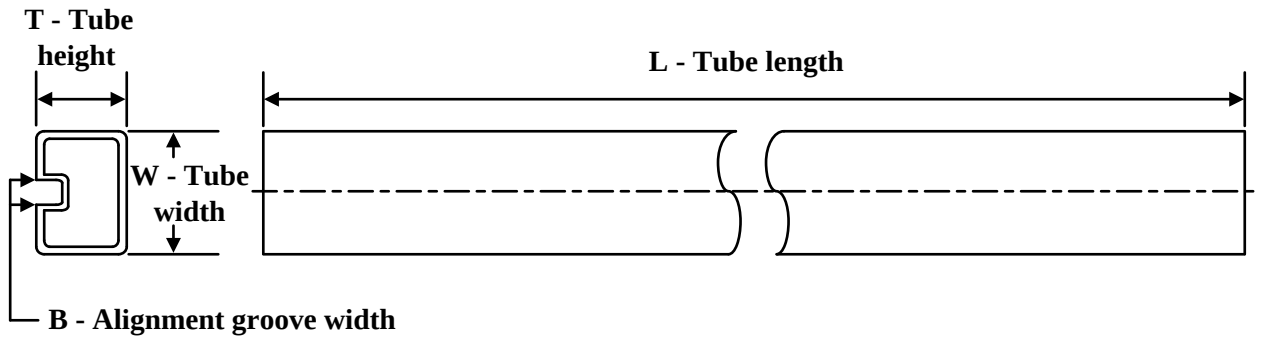
TAPE AND REEL BOX DIMENSIONS




*All dimensions are nominal

| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
|---|---|---|---|---|---|---|---|
| SN74LS253DR | SOIC | D | 16 | 2500 | 340.5 | 336.1 | 32.0 |

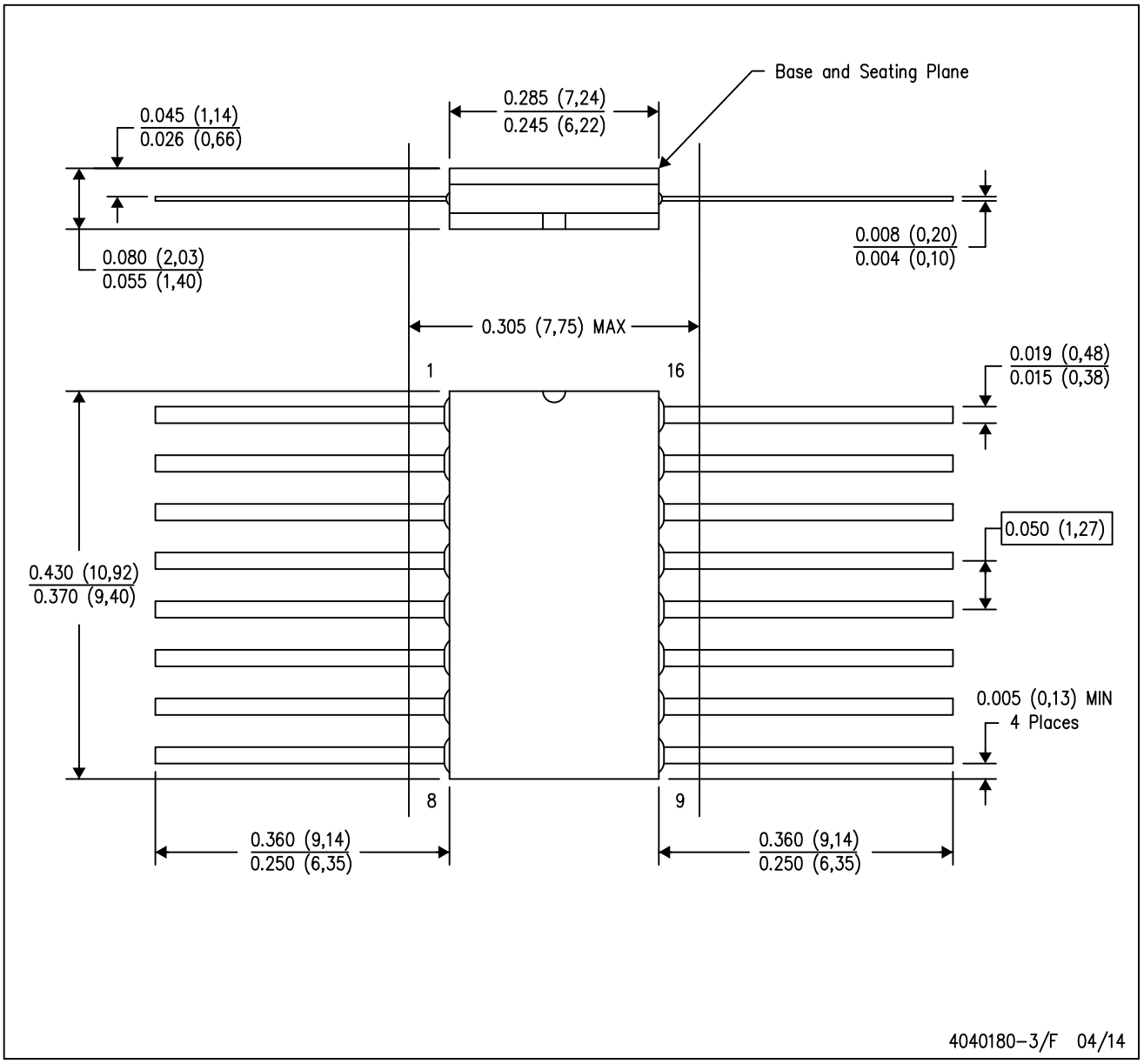
## TUBE




*All dimensions are nominal

| Device | Package Name | Package Type | Pins | SPQ | L (mm) | W (mm) | T (µm) | B (mm) |
|---|---|---|---|---|---|---|---|---|
| 76017012A | FK | LCCC | 20 | 55 | 506.98 | 12.06 | 2030 | NA |
| JM38510/30908BFA | W | CFP | 16 | 25 | 506.98 | 26.16 | 6220 | NA |
| JM38510/30908BFA.A | W | CFP | 16 | 25 | 506.98 | 26.16 | 6220 | NA |
| M38510/30908BFA | W | CFP | 16 | 25 | 506.98 | 26.16 | 6220 | NA |
| SN74LS253N | N | PDIP | 16 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS253N | N | PDIP | 16 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS253N.A | N | PDIP | 16 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SN74LS253N.A | N | PDIP | 16 | 25 | 506 | 13.97 | 11230 | 4.32 |
| SNJ54LS253FK | FK | LCCC | 20 | 55 | 506.98 | 12.06 | 2030 | NA |
| SNJ54LS253FK.A | FK | LCCC | 20 | 55 | 506.98 | 12.06 | 2030 | NA |

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

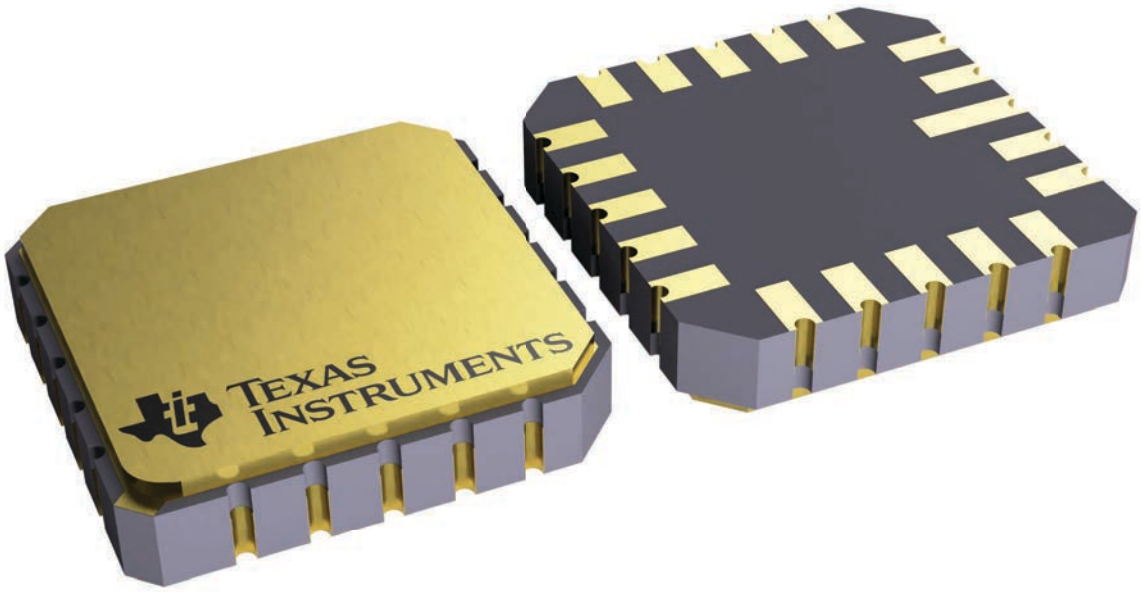
## FK 20

## 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.

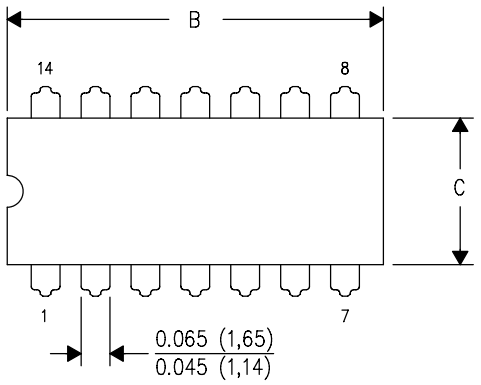



4229370VA\

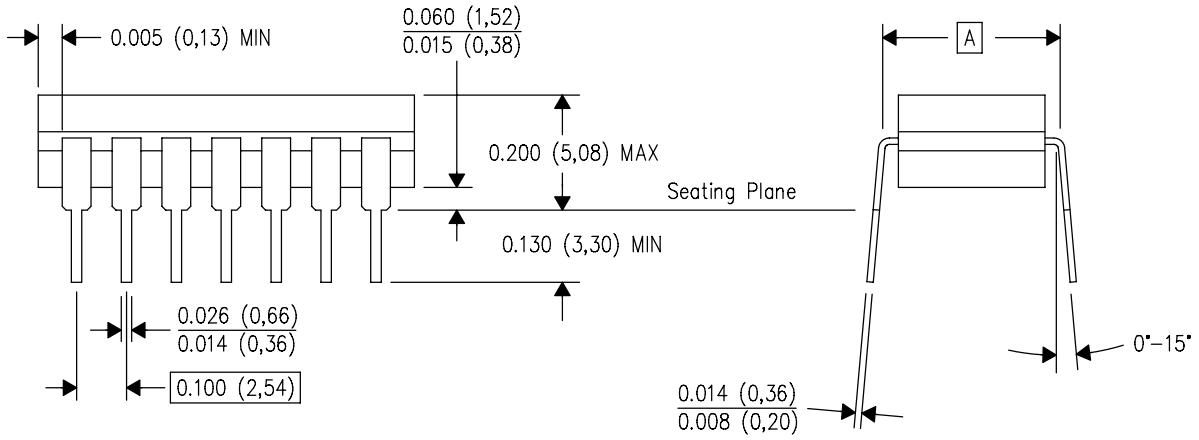
J (R–GDIP–T**)

14 LEADS SHOWN

# CERAMIC DUAL IN–LINE PACKAGE




| DIM \ PINS ** | 14 | 16 | 18 | 20 |
|---|---|---|---|---|
| A | 0.300 (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) |



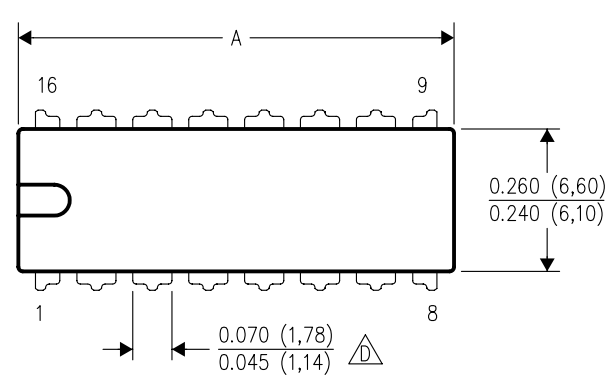

4040083/F 03/03

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.

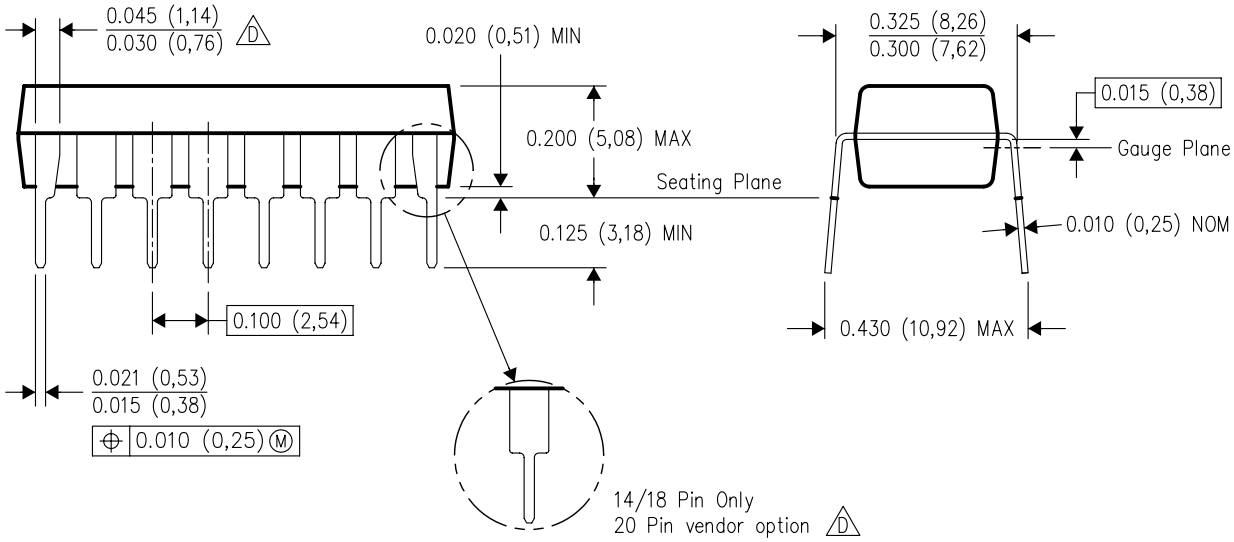
## N (R–PDIP–T**)

## PLASTIC DUAL–IN–LINE PACKAGE

16 PINS SHOWN



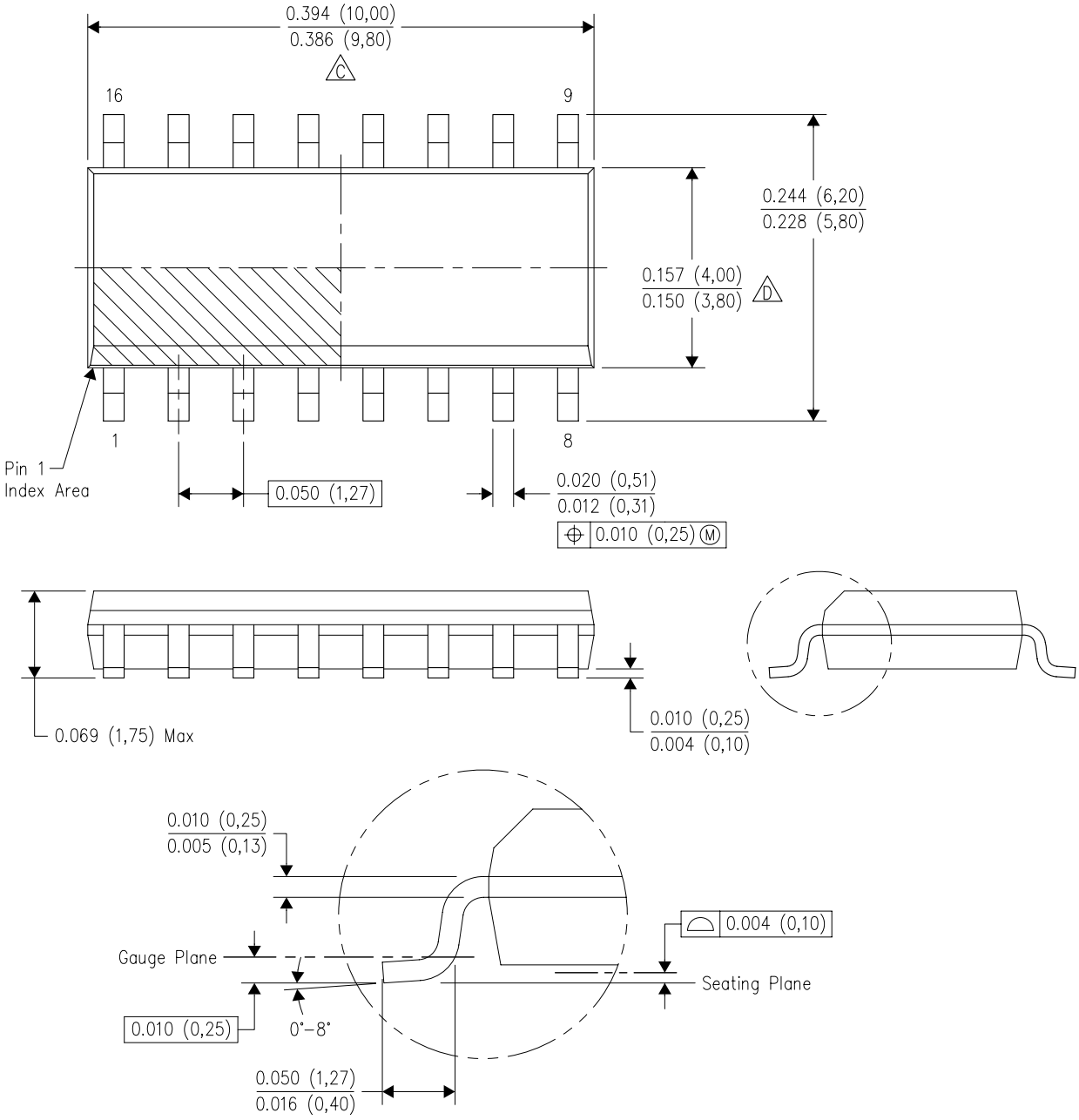

| DIM \ PINS ** | 14 | 16 | 18 | 20 |
|---|---|---|---|---|
| A MAX | 0.775 (19,69) | 0.775 (19,69) | 0.920 (23,37) | 1.060 (26,92) |
| A MIN | 0.745 (18,92) | 0.745 (18,92) | 0.850 (21,59) | 0.940 (23,88) |
| MS–001 VARIATION (C) | AA | BB | AC | AD |




4040049/E 12/2002

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

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.

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