

- 2-V to 6-V  $V_{CC}$  Operation
- Inputs Accept Voltages to 6 V
- Max  $t_{pd}$  of 10.5 ns at 5 V
- 3-State Inverting Outputs Drive Bus Lines Directly
- Full Parallel Access for Loading

**description/ordering information**

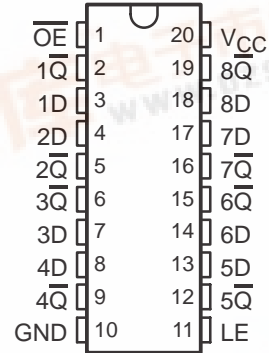
The 'AC533 devices are octal transparent D-type latches with 3-state outputs. When the latch-enable (LE) input is high, the  $\bar{Q}$  outputs follow the complements of the data (D) inputs. When LE is taken low, the  $\bar{Q}$  outputs are latched at the inverse logic levels set up at the D inputs.

A buffered output-enable ( $\overline{OE}$ ) input can be used to place the eight outputs in either a normal logic state (high or low logic levels) or the high-impedance state. In the high-impedance state, the outputs neither load nor drive the bus lines significantly. The high-impedance state and increased drive provide the capability to drive bus lines without need for interface or pullup components.

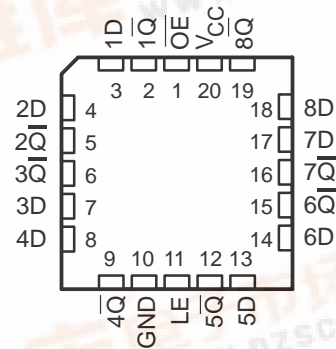
$\overline{OE}$  does not affect the internal operations of the latches. Old data can be retained or new data can be entered while the outputs are in the high-impedance state.

To ensure the high-impedance state during power up or power down,  $\overline{OE}$  should be tied to  $V_{CC}$  through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

SN54AC533 . . . J OR W PACKAGE  
 SN74AC533 . . . DB, DW, N, NS, OR PW PACKAGE  
 (TOP VIEW)



SN54AC533 . . . FK PACKAGE  
 (TOP VIEW)

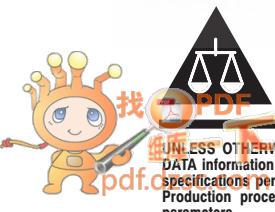


**ORDERING INFORMATION**

| TA             | PACKAGE†   |               | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|------------|---------------|-----------------------|------------------|
| -40°C to 85°C  | PDIP – N   | Tube          | SN74AC533N            | SN74AC533N       |
|                | SOIC – DW  | Tube          | SN74AC533DW           | AC533            |
|                |            | Tape and reel | SN74AC533DWR          |                  |
|                | SOP – NS   | Tape and reel | SN74AC533NSR          | AC533            |
|                | SSOP – DB  | Tape and reel | SN74AC533DBR          | AC533            |
|                | TSSOP – PW | Tube          | SN74AC533PW           | AC533            |
| Tape and reel  |            | SN74AC533PWR  |                       |                  |
| -55°C to 125°C | CDIP – J   | Tube          | SNJ54AC533J           | SNJ54AC533J      |
|                | CFP – W    | Tube          | SNJ54AC533W           | SNJ54AC533W      |
|                | LCCC – FK  | Tube          | SNJ54AC533FK          | SNJ54AC533FK     |

† 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.



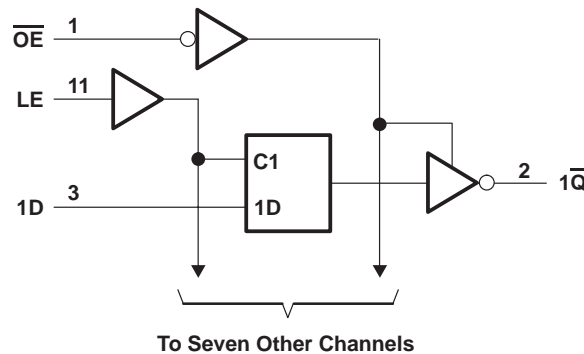
# SN54AC533, SN74AC533 OCTAL TRANSPARENT D-TYPE LATCHES WITH 3-STATE OUTPUTS

SCAS555C – NOVEMBER 1995 – REVISED OCTOBER 2003

FUNCTION TABLE  
(each latch)

| INPUTS          |    |   | OUTPUT           |
|-----------------|----|---|------------------|
| $\overline{OE}$ | LE | D | $\overline{Q}$   |
| L               | H  | H | L                |
| L               | H  | L | H                |
| L               | L  | X | $\overline{Q}_0$ |
| H               | X  | X | Z                |

## logic diagram (positive logic)



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

|                                                                |                            |
|----------------------------------------------------------------|----------------------------|
| Supply voltage range, $V_{CC}$                                 | -0.5 V to 7 V              |
| Input voltage range, $V_I$ (see Note 1)                        | -0.5 V to $V_{CC} + 0.5$ V |
| Output voltage range, $V_O$ (see Note 1)                       | -0.5 V to $V_{CC} + 0.5$ V |
| Input clamp current, $I_{IK}$ ( $V_I < 0$ or $V_I > V_{CC}$ )  | $\pm 20$ mA                |
| Output clamp current, $I_{OK}$ ( $V_O < 0$ or $V_O > V_{CC}$ ) | $\pm 20$ mA                |
| Continuous output current, $I_O$ ( $V_O = 0$ to $V_{CC}$ )     | $\pm 50$ mA                |
| Continuous current through $V_{CC}$ or GND                     | $\pm 200$ mA               |
| Package thermal impedance, $\theta_{JA}$ (see Note 2):         |                            |
| DB package                                                     | 70°C/W                     |
| DW package                                                     | 58°C/W                     |
| N package                                                      | 69°C/W                     |
| NS package                                                     | 60°C/W                     |
| PW package                                                     | 83°C/W                     |
| Storage temperature range, $T_{stg}$                           | -65°C to 150°C             |

† Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

- NOTES: 1. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.  
2. The package thermal impedance is calculated in accordance with JESD 51-7.

# SN54AC533, SN74AC533 OCTAL TRANSPARENT D-TYPE LATCHES WITH 3-STATE OUTPUTS

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## recommended operating conditions (see Note 3)

|                     |                                    | SN54AC533               |          | SN74AC533 |          | UNIT |
|---------------------|------------------------------------|-------------------------|----------|-----------|----------|------|
|                     |                                    | MIN                     | MAX      | MIN       | MAX      |      |
| $V_{CC}$            | Supply voltage                     | 2                       | 6        | 2         | 6        | V    |
| $V_{IH}$            | High-level input voltage           | $V_{CC} = 3\text{ V}$   |          | 2.1       |          | V    |
|                     |                                    | $V_{CC} = 4.5\text{ V}$ |          | 3.15      |          |      |
|                     |                                    | $V_{CC} = 5.5\text{ V}$ |          | 3.85      |          |      |
| $V_{IL}$            | Low-level input voltage            | $V_{CC} = 3\text{ V}$   |          | 0.9       |          | V    |
|                     |                                    | $V_{CC} = 4.5\text{ V}$ |          | 1.35      |          |      |
|                     |                                    | $V_{CC} = 5.5\text{ V}$ |          | 1.65      |          |      |
| $V_I$               | Input voltage                      | 0                       | $V_{CC}$ | 0         | $V_{CC}$ | V    |
| $V_O$               | Output voltage                     | 0                       | $V_{CC}$ | 0         | $V_{CC}$ | V    |
| $I_{OH}$            | High-level output current          | $V_{CC} = 3\text{ V}$   |          | -12       |          | mA   |
|                     |                                    | $V_{CC} = 4.5\text{ V}$ |          | -24       |          |      |
|                     |                                    | $V_{CC} = 5.5\text{ V}$ |          | -24       |          |      |
| $I_{OL}$            | Low-level output current           | $V_{CC} = 3\text{ V}$   |          | 12        |          | mA   |
|                     |                                    | $V_{CC} = 4.5\text{ V}$ |          | 24        |          |      |
|                     |                                    | $V_{CC} = 5.5\text{ V}$ |          | 24        |          |      |
| $\Delta t/\Delta v$ | Input transition rise or fall rate | 8                       |          | 8         |          | ns/V |
| $T_A$               | Operating free-air temperature     | -55                     | 125      | -40       | 85       | °C   |

NOTE 3: All unused inputs of the device must be held at  $V_{CC}$  or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

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

| PARAMETER | TEST CONDITIONS                  | $V_{CC}$ | $T_A = 25^\circ\text{C}$ |     |     | SN54AC533  |     | SN74AC533 |           | UNIT          |
|-----------|----------------------------------|----------|--------------------------|-----|-----|------------|-----|-----------|-----------|---------------|
|           |                                  |          | MIN                      | TYP | MAX | MIN        | MAX | MIN       | MAX       |               |
| $V_{OH}$  | $I_{OH} = -50\ \mu\text{A}$      | 3 V      | 2.9                      |     |     | 2.9        |     | 2.9       | V         |               |
|           |                                  | 4.5 V    | 4.4                      |     |     | 4.4        |     | 4.4       |           |               |
|           |                                  | 5.5 V    | 5.4                      |     |     | 5.4        |     | 5.4       |           |               |
|           | $I_{OH} = -12\ \text{mA}$        | 3 V      | 2.56                     |     |     | 2.4        |     | 2.46      |           |               |
|           |                                  | 4.5 V    | 3.86                     |     |     | 3.7        |     | 3.76      |           |               |
|           |                                  | 5.5 V    | 4.86                     |     |     | 4.7        |     | 4.76      |           |               |
| $V_{OL}$  | $I_{OL} = 50\ \mu\text{A}$       | 3 V      |                          |     |     | 0.1        |     | 0.1       | V         |               |
|           |                                  | 4.5 V    |                          |     |     | 0.1        |     | 0.1       |           |               |
|           |                                  | 5.5 V    |                          |     |     | 0.1        |     | 0.1       |           |               |
|           | $I_{OL} = 12\ \text{mA}$         | 3 V      |                          |     |     | 0.36       |     | 0.44      |           |               |
|           |                                  | 4.5 V    |                          |     |     | 0.36       |     | 0.44      |           |               |
|           |                                  | 5.5 V    |                          |     |     | 0.36       |     | 0.44      |           |               |
| $I_{OZ}$  | $V_O = V_{CC}$ or GND            | 5.5 V    |                          |     |     | $\pm 0.25$ |     | $\pm 5$   | $\pm 2.5$ | $\mu\text{A}$ |
| $I_I$     | $V_I = V_{CC}$ or GND            | 5.5 V    |                          |     |     | $\pm 0.1$  |     | $\pm 1$   | $\pm 1$   | $\mu\text{A}$ |
| $I_{CC}$  | $V_I = V_{CC}$ or GND, $I_O = 0$ | 5.5 V    |                          |     |     | 4          |     | 80        | 40        | $\mu\text{A}$ |
| $C_i$     | $V_I = V_{CC}$ or GND            | 5 V      |                          | 4.5 |     |            |     |           |           | pF            |

# SN54AC533, SN74AC533 OCTAL TRANSPARENT D-TYPE LATCHES WITH 3-STATE OUTPUTS

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timing requirements over recommended operating free-air temperature range,  $V_{CC} = 3.3\text{ V} \pm 0.3\text{ V}$  (unless otherwise noted) (see Figure 1)

|          |                                         | $T_A = 25^\circ\text{C}$ |     | SN54AC533 |     | SN74AC533 |     | UNIT |
|----------|-----------------------------------------|--------------------------|-----|-----------|-----|-----------|-----|------|
|          |                                         | MIN                      | MAX | MIN       | MAX | MIN       | MAX |      |
| $t_w$    | Pulse duration, LE high                 | 6                        |     | 8         |     | 6.5       |     | ns   |
| $t_{su}$ | Setup time, data before LE $\downarrow$ | 5.5                      |     | 7.5       |     | 6         |     | ns   |
| $t_h$    | Hold time, data after LE $\downarrow$   | 1.5                      |     | 2.5       |     | 1         |     | ns   |

timing requirements over recommended operating free-air temperature range,  $V_{CC} = 5\text{ V} \pm 0.5\text{ V}$  (unless otherwise noted) (see Figure 1)

|          |                                         | $T_A = 25^\circ\text{C}$ |     | SN54AC533 |     | SN74AC533 |     | UNIT |
|----------|-----------------------------------------|--------------------------|-----|-----------|-----|-----------|-----|------|
|          |                                         | MIN                      | MAX | MIN       | MAX | MIN       | MAX |      |
| $t_w$    | Pulse duration, LE high                 | 4.5                      |     | 6.5       |     | 5         |     | ns   |
| $t_{su}$ | Setup time, data before LE $\downarrow$ | 4                        |     | 6         |     | 4.5       |     | ns   |
| $t_h$    | Hold time, data after LE $\downarrow$   | 1.5                      |     | 2.5       |     | 1         |     | ns   |

switching characteristics over recommended operating free-air temperature range,  $V_{CC} = 3.3\text{ V} \pm 0.3\text{ V}$  (unless otherwise noted) (see Figure 1)

| PARAMETER | FROM (INPUT)    | TO (OUTPUT) | $T_A = 25^\circ\text{C}$ |      | SN54AC533 |      | SN74AC533 |      | UNIT |
|-----------|-----------------|-------------|--------------------------|------|-----------|------|-----------|------|------|
|           |                 |             | MIN                      | MAX  | MIN       | MAX  | MIN       | MAX  |      |
| $t_{PLH}$ | D               | $\bar{Q}$   | 2                        | 14   | 1         | 17.5 | 1.5       | 16   | ns   |
| $t_{PHL}$ |                 |             | 2                        | 13   | 1         | 16   | 1.5       | 14.5 |      |
| $t_{PLH}$ | LE              | $\bar{Q}$   | 2                        | 14.5 | 1         | 18   | 1.5       | 16.5 | ns   |
| $t_{PHL}$ |                 |             | 2                        | 13   | 1         | 16   | 1.5       | 14.5 |      |
| $t_{PZH}$ | $\overline{OE}$ | $\bar{Q}$   | 2                        | 12.5 | 1         | 15.5 | 1.5       | 14   | ns   |
| $t_{PZL}$ |                 |             | 2                        | 12.5 | 1         | 15.5 | 1.5       | 14   |      |
| $t_{PHZ}$ | $\overline{OE}$ | $\bar{Q}$   | 2                        | 13   | 1         | 16   | 1.5       | 14.5 | ns   |
| $t_{PLZ}$ |                 |             | 2                        | 13   | 1         | 16   | 1.5       | 14.5 |      |

switching characteristics over recommended operating free-air temperature range,  $V_{CC} = 5\text{ V} \pm 0.5\text{ V}$  (unless otherwise noted) (see Figure 1)

| PARAMETER | FROM (INPUT)    | TO (OUTPUT) | $T_A = 25^\circ\text{C}$ |      | SN54AC533 |      | SN74AC533 |      | UNIT |
|-----------|-----------------|-------------|--------------------------|------|-----------|------|-----------|------|------|
|           |                 |             | MIN                      | MAX  | MIN       | MAX  | MIN       | MAX  |      |
| $t_{PLH}$ | D               | $\bar{Q}$   | 2                        | 10   | 1         | 12.5 | 1.5       | 11   | ns   |
| $t_{PHL}$ |                 |             | 2                        | 9.5  | 1         | 12   | 1.5       | 10.5 |      |
| $t_{PLH}$ | LE              | $\bar{Q}$   | 2                        | 10.5 | 1         | 13   | 1.5       | 11.5 | ns   |
| $t_{PHL}$ |                 |             | 2                        | 10   | 1         | 13   | 1.5       | 11   |      |
| $t_{PZH}$ | $\overline{OE}$ | $\bar{Q}$   | 2                        | 9.5  | 1         | 12   | 1.5       | 10.5 | ns   |
| $t_{PZL}$ |                 |             | 2                        | 9.5  | 1         | 12   | 1.5       | 10.5 |      |
| $t_{PHZ}$ | $\overline{OE}$ | $\bar{Q}$   | 2                        | 10   | 1         | 12.5 | 1.5       | 11   | ns   |
| $t_{PLZ}$ |                 |             | 2                        | 10   | 1         | 12.5 | 1.5       | 11   |      |

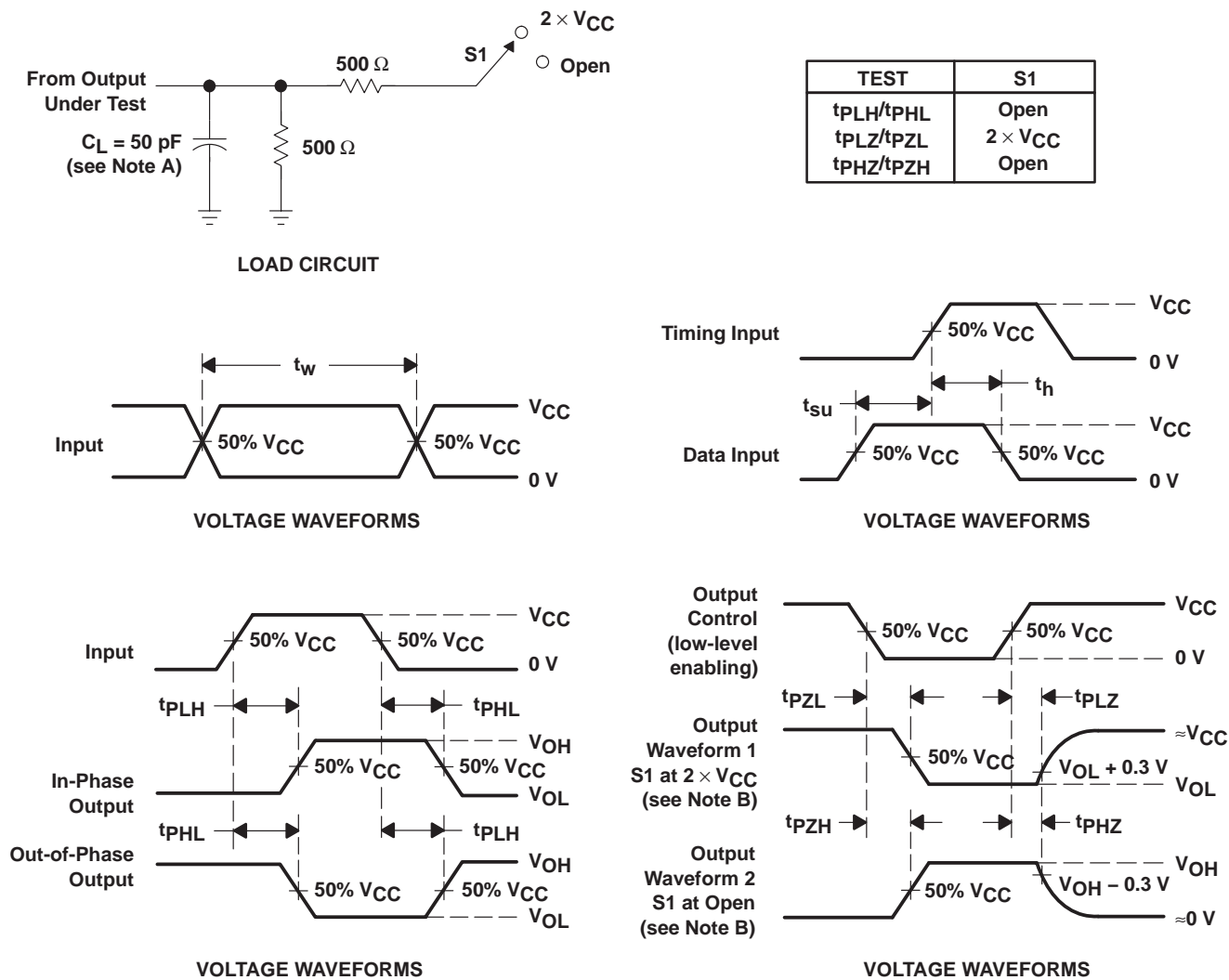
operating characteristics,  $V_{CC} = 5\text{ V}$ ,  $T_A = 25^\circ\text{C}$

| PARAMETER | TEST CONDITIONS               | TYP                                       | UNIT |    |
|-----------|-------------------------------|-------------------------------------------|------|----|
| $C_{pd}$  | Power dissipation capacitance | $C_L = 50\text{ pF}$ , $f = 1\text{ MHz}$ | 40   | pF |

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## PARAMETER MEASUREMENT INFORMATION



- NOTES: A.  $C_L$  includes probe and jig capacitance.  
 B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control.  
 Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.  
 C. All input pulses are supplied by generators having the following characteristics:  $PRR \leq 1$  MHz,  $Z_O = 50 \Omega$ ,  $t_r \leq 2.5$  ns,  $t_f \leq 2.5$  ns.  
 D. The outputs are measured one at a time with one input transition per measurement.

**Figure 1. Load Circuit and Voltage Waveforms**

**PACKAGING INFORMATION**

| Orderable Device | Status <sup>(1)</sup> | Package Type | Package Drawing | Pins | Package Qty | Eco Plan <sup>(2)</sup> | Lead/Ball Finish | MSL Peak Temp <sup>(3)</sup> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| SN74AC533DBLE    | OBSOLETE              | SSOP         | DB              | 20   |             | TBD                     | Call TI          | Call TI                      |
| SN74AC533DBR     | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DBRE4   | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DBRG4   | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DW      | ACTIVE                | SOIC         | DW              | 20   | 25          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DWG4    | ACTIVE                | SOIC         | DW              | 20   | 25          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DWR     | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DWRE4   | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533DWRG4   | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533N       | ACTIVE                | PDIP         | N               | 20   | 20          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| SN74AC533NE4     | ACTIVE                | PDIP         | N               | 20   | 20          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| SN74AC533NSR     | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533NSRE4   | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533NSRG4   | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PW      | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PWE4    | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PWG4    | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PWLE    | OBSOLETE              | TSSOP        | PW              | 20   |             | TBD                     | Call TI          | Call TI                      |
| SN74AC533PWR     | ACTIVE                | TSSOP        | PW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PWRE4   | ACTIVE                | TSSOP        | PW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74AC533PWRG4   | ACTIVE                | TSSOP        | PW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |

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

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

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

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

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

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

<sup>(2)</sup> Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), 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.

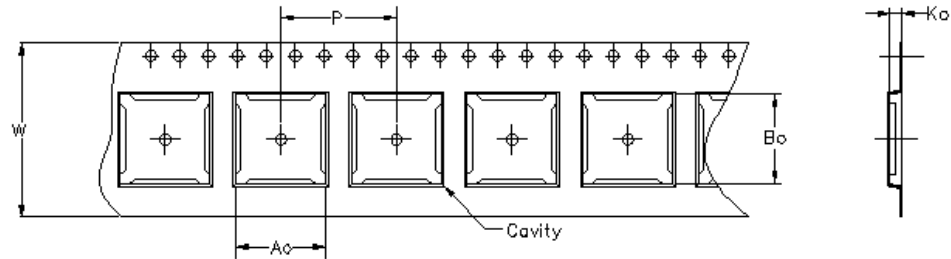
**Pb-Free (RoHS Exempt):** This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

**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)

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

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Carrier tape design is defined largely by the component length, width, and thickness.

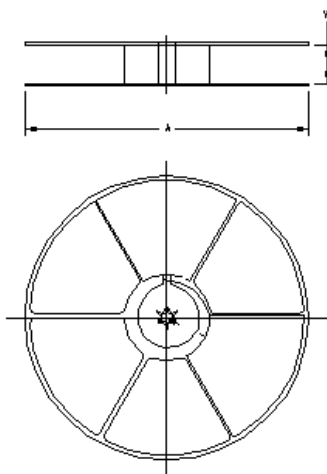
|                                                                    |
|--------------------------------------------------------------------|
| $A_0$ = Dimension designed to accommodate the component width.     |
| $B_0$ = Dimension designed to accommodate the component length.    |
| $K_0$ = Dimension designed to accommodate the component thickness. |
| $W$ = Overall width of the carrier tape.                           |
| $P$ = Pitch between successive cavity centers.                     |



**TAPE AND REEL INFORMATION**

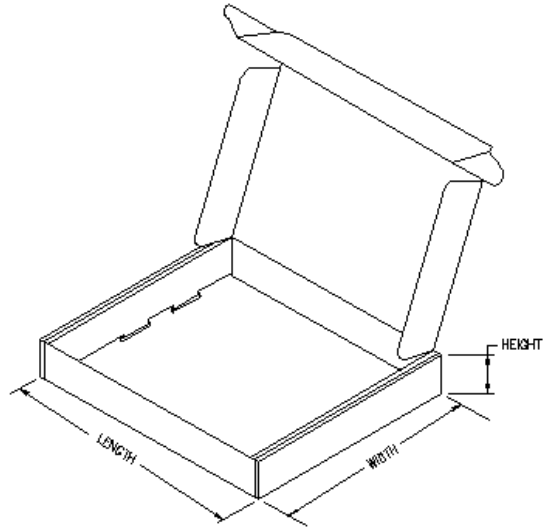


| Device       | Package | Pins | Site | Reel Diameter (mm) | Reel Width (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|--------------|---------|------|------|--------------------|-----------------|---------|---------|---------|---------|--------|---------------|
| SN74AC533DBR | DB      | 20   | MLA  | 330                | 16              | 8.2     | 7.5     | 2.5     | 12      | 16     | Q1            |
| SN74AC533DWR | DW      | 20   | MLA  | 330                | 24              | 10.8    | 13.0    | 2.7     | 12      | 24     | Q1            |
| SN74AC533NSR | NS      | 20   | MLA  | 330                | 24              | 8.2     | 13.0    | 2.5     | 12      | 24     | Q1            |
| SN74AC533PWR | PW      | 20   | MLA  | 330                | 16              | 6.95    | 7.1     | 1.6     | 8       | 16     | Q1            |



## TAPE AND REEL BOX INFORMATION

| Device       | Package | Pins | Site | Length (mm) | Width (mm) | Height (mm) |
|--------------|---------|------|------|-------------|------------|-------------|
| SN74AC533DBR | DB      | 20   | MLA  | 342.9       | 336.6      | 28.58       |
| SN74AC533DWR | DW      | 20   | MLA  | 333.2       | 333.2      | 31.75       |
| SN74AC533NSR | NS      | 20   | MLA  | 333.2       | 333.2      | 31.75       |
| SN74AC533PWR | PW      | 20   | MLA  | 342.9       | 336.6      | 28.58       |

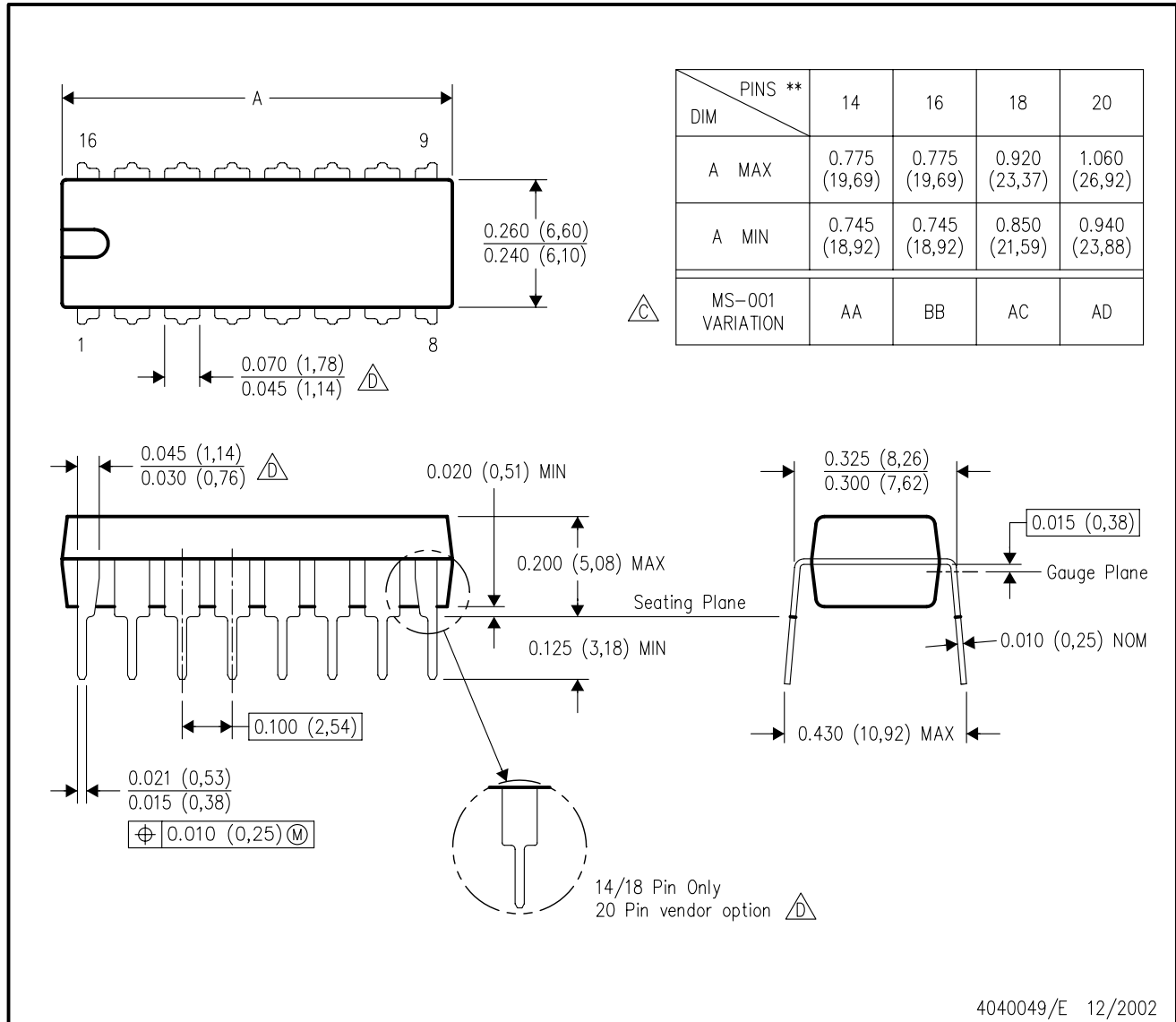


# MECHANICAL DATA

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

16 PINS SHOWN

## PLASTIC DUAL-IN-LINE PACKAGE

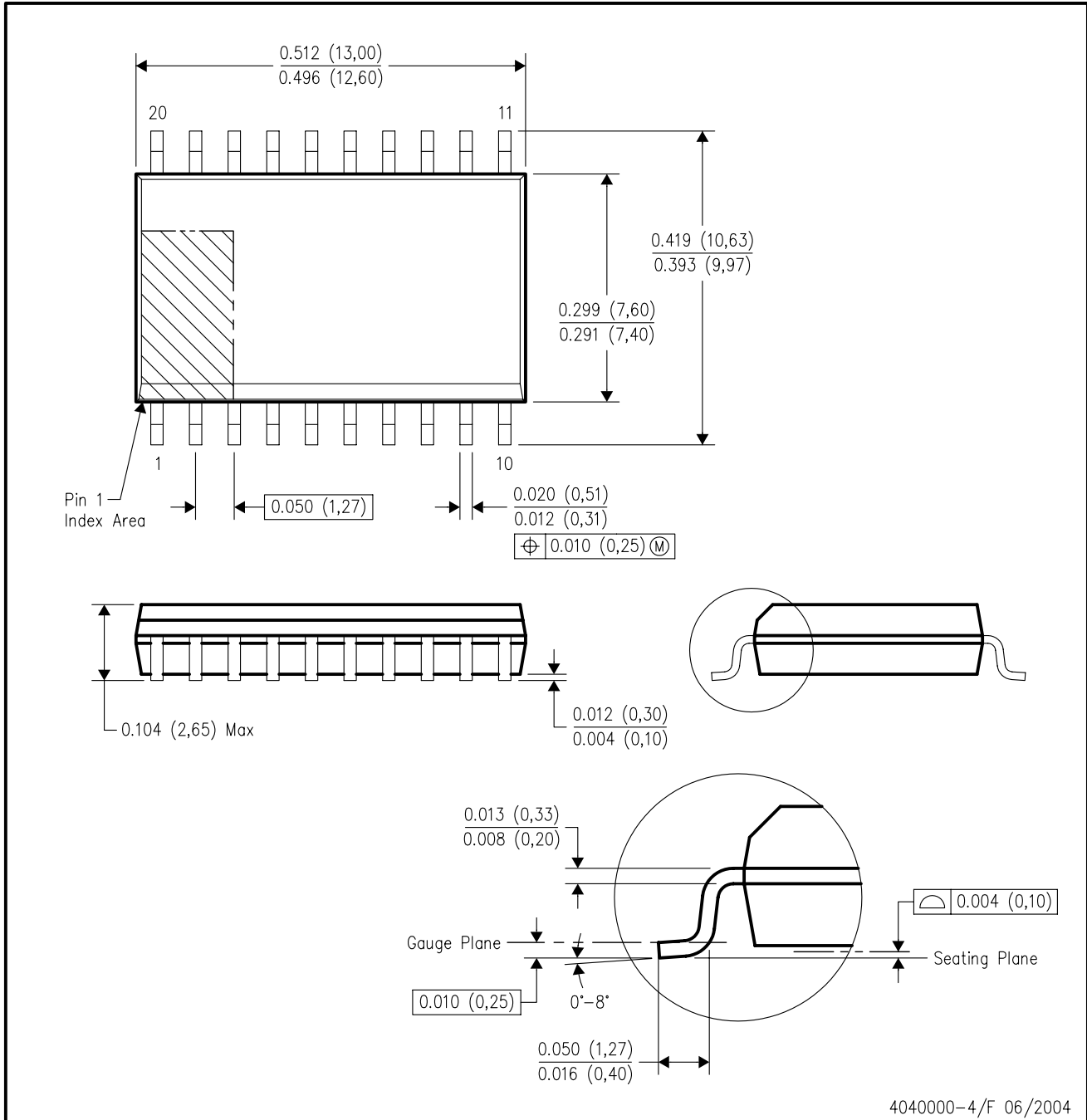


- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
  - D. The 20 pin end lead shoulder width is a vendor option, either half or full width.

4040049/E 12/2002

DW (R-PDSO-G20)

PLASTIC SMALL-OUTLINE PACKAGE



4040000-4/F 06/2004

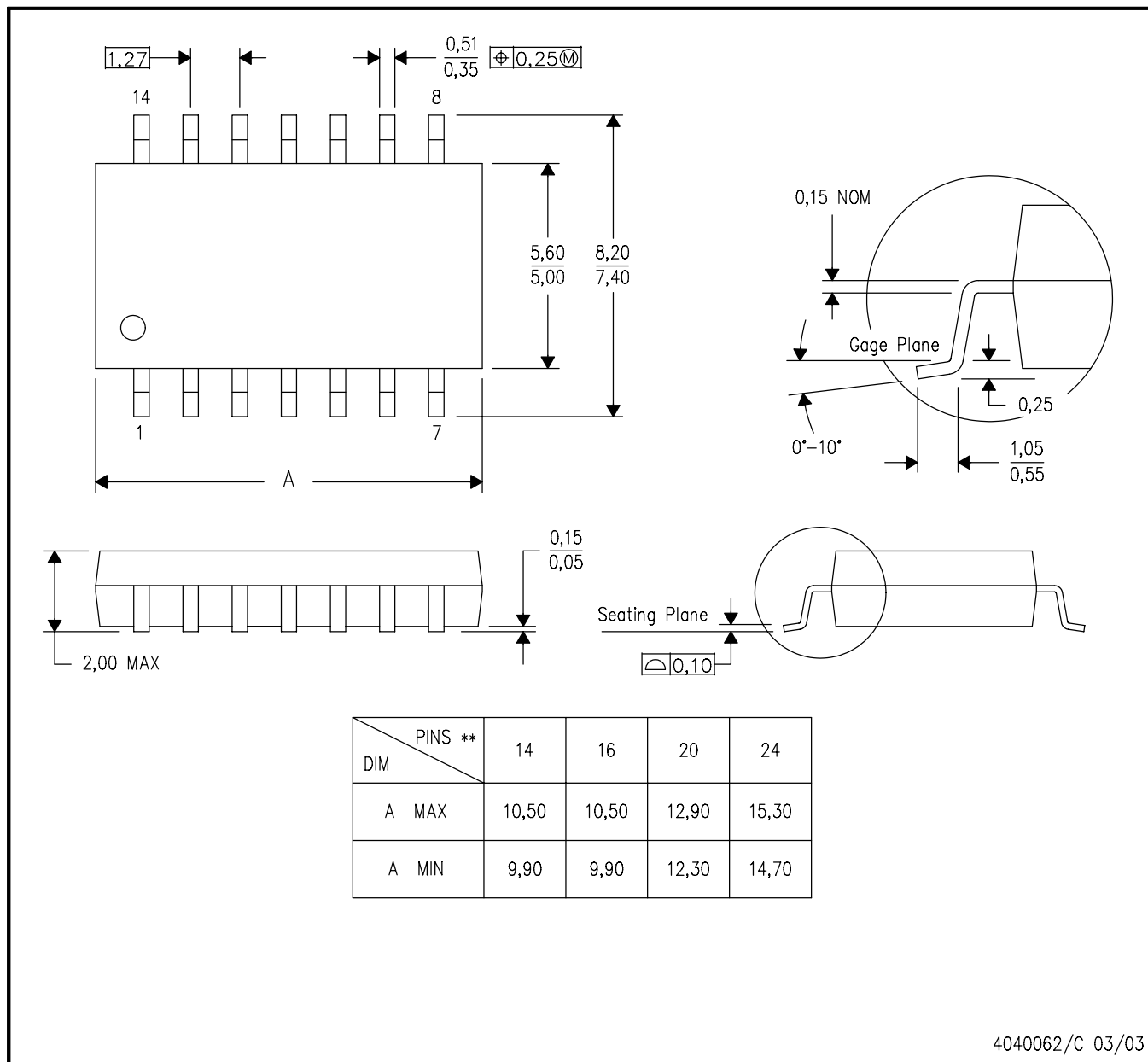
- NOTES:
- A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
  - D. Falls within JEDEC MS-013 variation AC.

## MECHANICAL DATA

**NS (R-PDSO-G\*\*)**

**PLASTIC SMALL-OUTLINE PACKAGE**

**14-PINS SHOWN**



4040062/C 03/03

- 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.

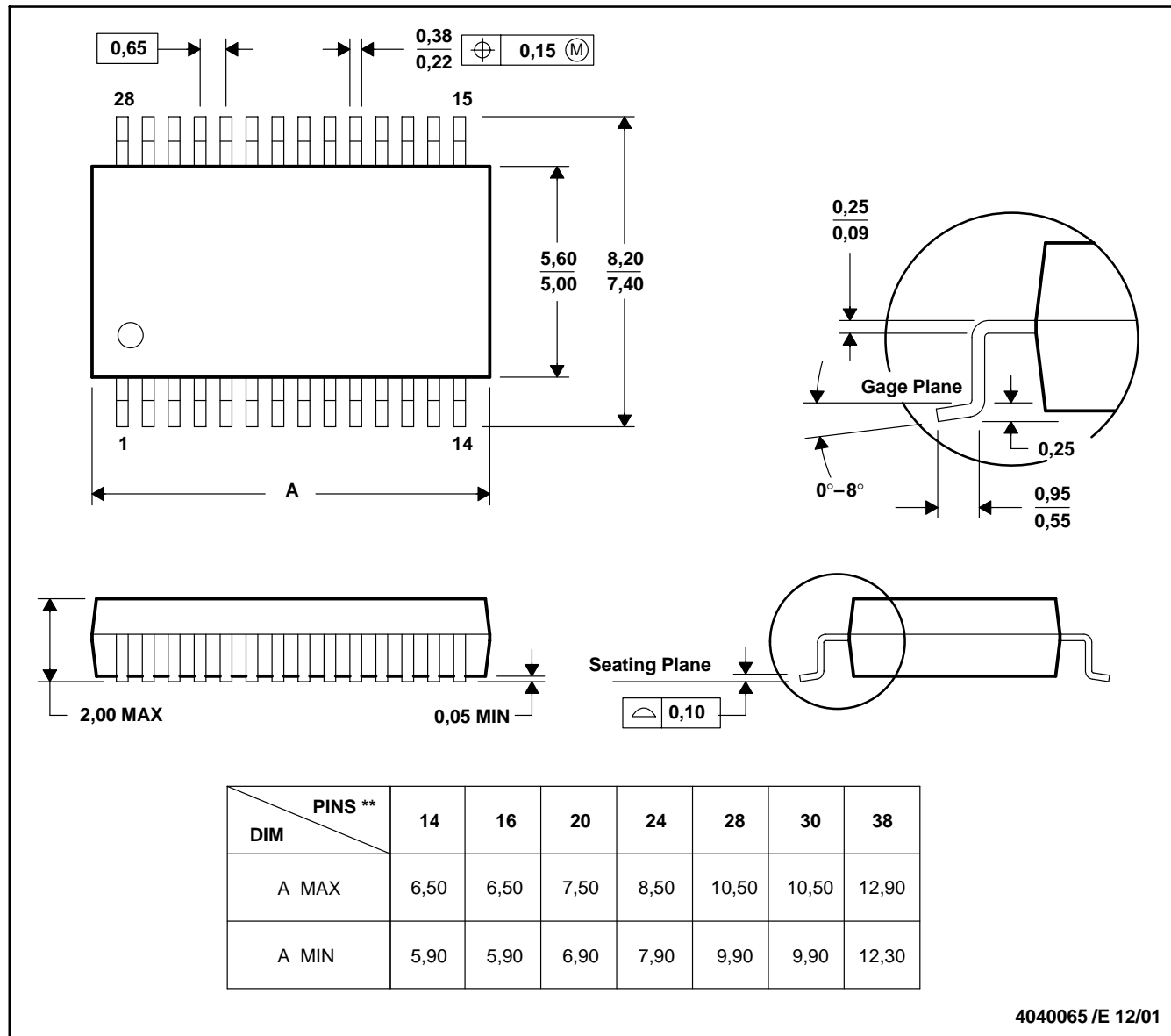
# MECHANICAL DATA

MSS0002E – JANUARY 1995 – REVISED DECEMBER 2001

## DB (R-PDSO-G\*\*)

## PLASTIC SMALL-OUTLINE

28 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.  
 D. Falls within JEDEC MO-150

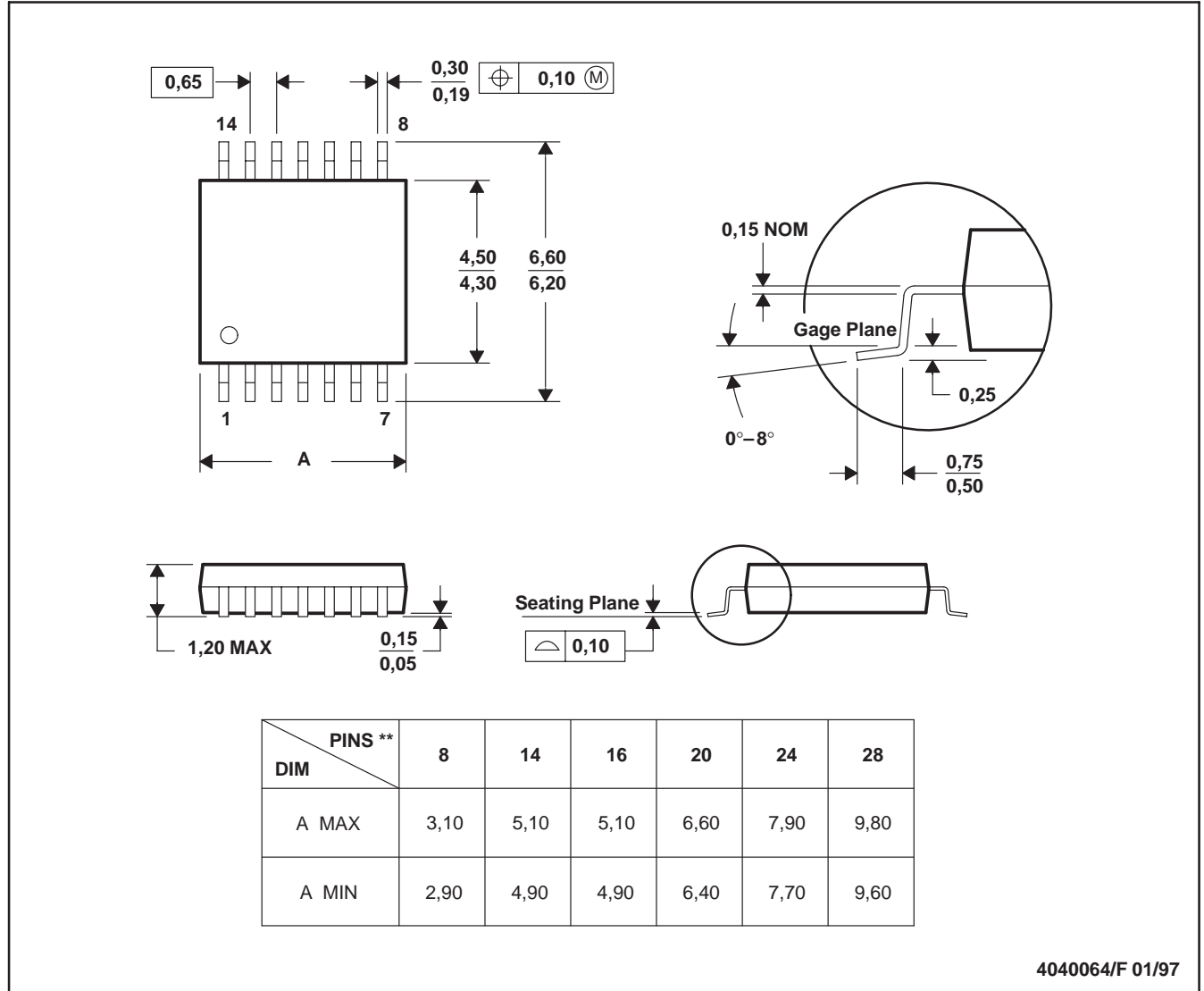
# MECHANICAL DATA

MTSS001C – JANUARY 1995 – REVISED FEBRUARY 1999

**PW (R-PDSO-G\*\*)**

**PLASTIC SMALL-OUTLINE PACKAGE**

14 PINS SHOWN



4040064/F 01/97

- 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.  
 D. Falls within JEDEC MO-153

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