

# SN54ACT563, SN74ACT563 OCTAL D-TYPE TRANSPARENT LATCHES WITH 3-STATE OUTPUTS

SCAS550B – NOVEMBER 1995 – REVISED OCTOBER 2002

- 4.5-V to 5.5-V  $V_{CC}$  Operation
- Inputs Accept Voltages to 5.5 V
- Max  $t_{pd}$  of 8.5 ns at 5 V
- Inputs Are TTL-Voltage Compatible
- 3-State Inverted Outputs Drive Bus Lines Directly
- Flow-Through Architecture to Optimize PCB Layout

## description/ordering information

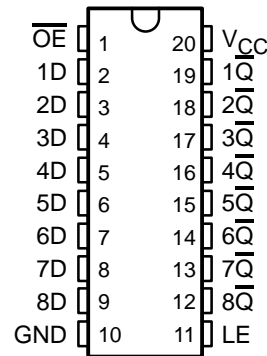
The 'ACT563 devices are octal D-type transparent latches with 3-state outputs. When the latch-enable (LE) input is high, the  $\bar{Q}$  outputs are set to the complements of the data (D) inputs. When LE is taken low, the  $\bar{Q}$  outputs are latched at the inverse logic levels set up at the D inputs.

A buffered output-enable ( $\overline{OE}$ ) input places 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 high logic level provide the capability to drive bus lines without interface or pullup components.

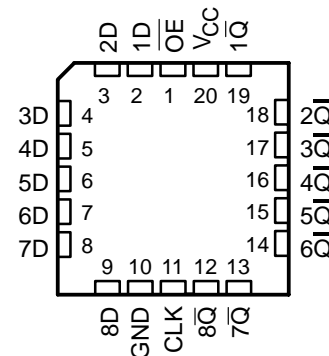
$\overline{OE}$  does not affect internal operations of the latches. Old data can be retained or new data can be entered while the outputs are in the high-impedance state.

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.

## SN54ACT563 . . . J OR W PACKAGE SN74ACT563 . . . DB, DW, N, NS, OR PW PACKAGE (TOP VIEW)



## SN54ACT563 . . . FK PACKAGE (TOP VIEW)



## ORDERING INFORMATION

| $T_A$          | PACKAGE†      |               | ORDERABLE PART NUMBER | TOP-SIDE MARKING |
|----------------|---------------|---------------|-----------------------|------------------|
| -40°C to 85°C  | PDIP – N      | Tube          | SN74ACT563N           | SN74ACT563N      |
|                | SOIC – DW     | Tube          | SN74ACT563DW          | ACT563           |
|                |               | Tape and reel | SN74ACT563DWR         |                  |
|                | SOP – NS      | Tape and reel | SN74ACT563NSR         | ACT563           |
|                | SSOP – DB     | Tape and reel | SN74ACT563DBR         | AD563            |
| TSSOP – PW     | Tape and reel | SN74ACT563PWR | AD563                 |                  |
| -55°C to 125°C | CDIP – J      | Tube          | SNJ54ACT5634J         | SNJ54ACT563J     |
|                | CFP – W       | Tube          | SNJ54ACT563W          | SNJ54ACT563W     |
|                | LCCC – FK     | Tube          | SNJ54ACT563FK         | SNJ54ACT563FK    |

† 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.

UNLESS OTHERWISE NOTED this document contains PRODUCTION DATA 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 655303 • DALLAS, TEXAS 75265

Copyright © 2002, Texas Instruments Incorporated

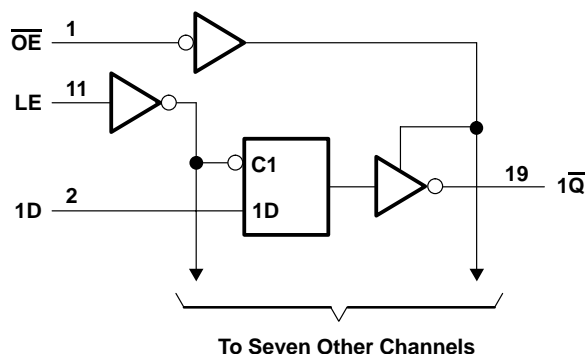
# SN54ACT563, SN74ACT563 OCTAL D-TYPE TRANSPARENT LATCHES WITH 3-STATE OUTPUTS

SCAS550B – NOVEMBER 1995 – REVISED OCTOBER 2002

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.

# SN54ACT563, SN74ACT563 OCTAL D-TYPE TRANSPARENT LATCHES WITH 3-STATE OUTPUTS

SCAS550B – NOVEMBER 1995 – REVISED OCTOBER 2002

## recommended operating conditions (see Note 3)

|                     |                                    | SN54ACT563 |          | SN74ACT563 |          | UNIT |
|---------------------|------------------------------------|------------|----------|------------|----------|------|
|                     |                                    | MIN        | MAX      | MIN        | MAX      |      |
| $V_{CC}$            | Supply voltage                     | 4.5        | 5.5      | 4.5        | 5.5      | V    |
| $V_{IH}$            | High-level input voltage           | 2          |          | 2          |          | V    |
| $V_{IL}$            | Low-level input voltage            |            | 0.8      |            | 0.8      | V    |
| $V_I$               | 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          |            | -24      |            | -24      | mA   |
| $I_{OL}$            | Low-level output current           |            | 24       |            | 24       | mA   |
| $\Delta t/\Delta v$ | 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                                     | $V_{CC}$ | $T_A = 25^\circ\text{C}$ |       |            | SN54ACT563 |           | SN74ACT563    |     | UNIT |
|-----------------------------------|---|----------|--------------------------|-------|------------|------------|-----------|---------------|-----|------|
|                                   |   |          | MIN                      | TYP   | MAX        | MIN        | MAX       | MIN           | MAX |      |
| $V_{OH}$                          | $I_{OH} = -50 \mu\text{A}$                          | 4.5 V    | 4.4                      | 4.49  | 4.4        |            | 4.4       |               | V   |      |
|                                   |   | 5.5 V    | 5.4                      | 5.49  | 5.4        |            | 5.4       |               |     |      |
|                                   | $I_{OH} = -24 \text{ mA}$                           | 4.5 V    | 3.86                     |       | 3.7        |            | 3.76      |               |     |      |
|                                   |   | 5.5 V    | 4.86                     |       | 4.7        |            | 4.76      |               |     |      |
|                                   | $I_{OH} = -50 \text{ mA}^\dagger$                   | 5.5 V    |                          |       | 3.85       |            |           |               |     |      |
| $I_{OH} = -75 \text{ mA}^\dagger$ | 5.5 V   |          |                          |       |            | 3.85       |           |               |     |      |
| $V_{OL}$                          | $I_{OL} = 50 \mu\text{A}$                           | 4.5 V    |                          | 0.001 | 0.1        |            | 0.1       | 0.1           | V   |      |
|                                   |   | 5.5 V    |                          | 0.001 | 0.1        |            | 0.1       | 0.1           |     |      |
|                                   | $I_{OL} = 24 \text{ mA}$                            | 4.5 V    |                          |       | 0.36       |            | 0.5       | 0.44          |     |      |
|                                   |   | 5.5 V    |                          |       | 0.36       |            | 0.5       | 0.44          |     |      |
|                                   | $I_{OL} = 50 \text{ mA}^\dagger$                    | 5.5 V    |                          |       |            | 1.65       |           |               |     |      |
| $I_{OL} = 75 \text{ mA}^\dagger$  | 5.5 V   |          |                          |       |            | 1.65       |           |               |     |      |
| $I_{OZ}$                          | $V_O = V_{CC}$ 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        | $\mu\text{A}$ |     |      |
| $\Delta I_{CC}^\ddagger$          | One input at 3.4 V, Other inputs at GND or $V_{CC}$ | 5.5 V    |                          | 0.6   |            | 1.6        | 1.5       | mA            |     |      |
| $C_i$                             | $V_I = V_{CC}$ or GND                               | 5 V      |                          | 4.5   |            |            |           | pF            |     |      |

$^\dagger$  Not more than one output should be tested at a time, and the duration of the test should not exceed 2 ms.

$^\ddagger$  This is the increase in supply current for each input that is at one of the specified TTL voltage levels, rather than 0 V or  $V_{CC}$ .

## 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)

|          |   | $T_A = 25^\circ\text{C}$ |     | SN54ACT563 |     | SN74ACT563 |     | UNIT |
|----------|---|--------------------------|-----|------------|-----|------------|-----|------|
|          |   | MIN                      | MAX | MIN        | MAX | MIN        | MAX |      |
| $t_w$    | Pulse duration, LE high                 | 3                        |     | 5          |     | 3          |     | ns   |
| $t_{su}$ | Setup time, data before LE $\downarrow$ | 4                        |     | 4.5        |     | 4.5        |     | ns   |
| $t_h$    | Hold time, data after LE $\downarrow$   | 0                        |     | 1.5        |     | 0          |     | ns   |

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

**SN54ACT563, SN74ACT563  
OCTAL D-TYPE TRANSPARENT LATCHES  
WITH 3-STATE OUTPUTS**

SCAS550B – NOVEMBER 1995 – REVISED OCTOBER 2002

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) | $T_A = 25^\circ\text{C}$ |     |      | SN54ACT563 |      | SN74ACT563 |      | UNIT |
|-----------|-----------------|-------------|--------------------------|-----|------|------------|------|------------|------|------|
|           |                 |             | MIN                      | TYP | MAX  | MIN        | MAX  | MIN        | MAX  |      |
| $t_{PLH}$ | D               | $\bar{Q}$   | 3                        | 7   | 11.5 | 1          | 14.5 | 2.5        | 12.5 | ns   |
| $t_{PHL}$ |                 |             | 3                        | 6   | 10   | 1          | 12   | 2.5        | 11   |      |
| $t_{PLH}$ | LE              | $\bar{Q}$   | 3                        | 6.5 | 10.5 | 1          | 12.5 | 2.5        | 11.5 | ns   |
| $t_{PHL}$ |                 |             | 2.5                      | 5.5 | 9.5  | 1          | 11.5 | 2          | 10.5 |      |
| $t_{PZH}$ | $\overline{OE}$ | $\bar{Q}$   | 2.5                      | 5.5 | 9    | 1          | 11.5 | 2          | 10   | ns   |
| $t_{PZL}$ |                 |             | 2                        | 5.5 | 8.5  | 1          | 11   | 2          | 9.5  |      |
| $t_{PHZ}$ | $\overline{OE}$ | $\bar{Q}$   | 3.5                      | 6.5 | 10.5 | 1          | 12   | 2.5        | 11.5 | ns   |
| $t_{PLZ}$ |                 |             | 2                        | 4.5 | 8    | 1          | 9.5  | 1          | 8.5  |      |

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

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

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.

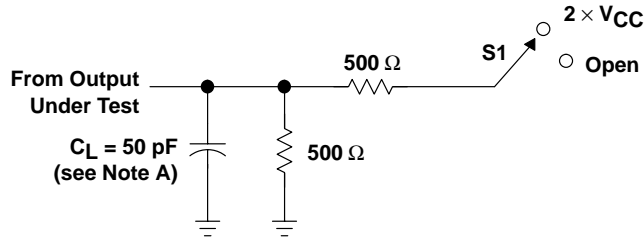


POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

# SN54ACT563, SN74ACT563 OCTAL D-TYPE TRANSPARENT LATCHES WITH 3-STATE OUTPUTS

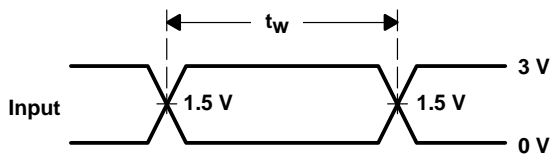
SCAS550B – NOVEMBER 1995 – REVISED OCTOBER 2002

## PARAMETER MEASUREMENT INFORMATION

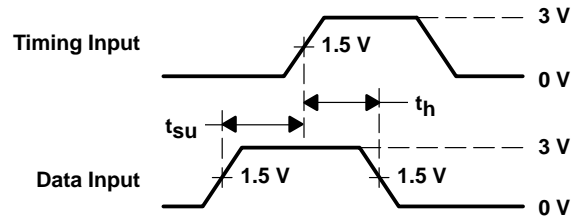


LOAD CIRCUIT

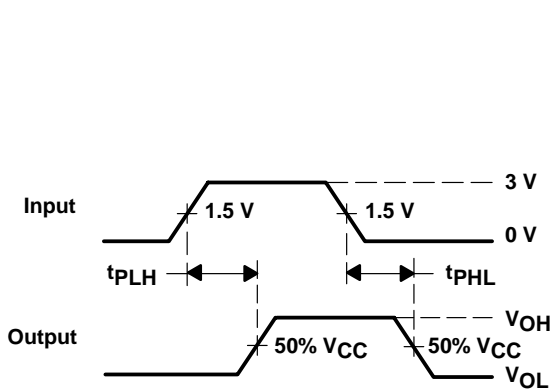
| TEST              | S1                |
|-------------------|-------------------|
| $t_{PLH}/t_{PHL}$ | Open              |
| $t_{PLZ}/t_{PZL}$ | $2 \times V_{CC}$ |
| $t_{PHZ}/t_{PZH}$ | Open              |



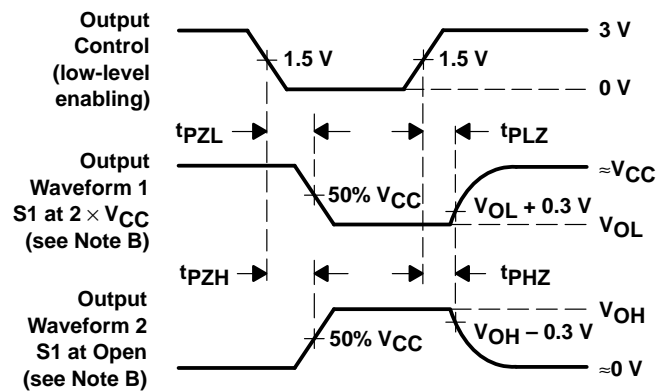
VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS



VOLTAGE WAVEFORMS

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:  $PRR \leq 1 \text{ MHz}$ ,  $Z_O = 50 \Omega$ ,  $t_r \leq 2.5 \text{ ns}$ ,  $t_f \leq 2.5 \text{ ns}$ .

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> |
|------------------|-----------------------|--------------|-----------------|------|-------------|-------------------------|------------------|------------------------------|
| SN74ACT563DBLE   | OBSOLETE              | SSOP         | DB              | 20   |             | TBD                     | Call TI          | Call TI                      |
| SN74ACT563DBR    | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DBRE4  | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DBRG4  | ACTIVE                | SSOP         | DB              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DW     | ACTIVE                | SOIC         | DW              | 20   | 25          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DWG4   | ACTIVE                | SOIC         | DW              | 20   | 25          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DWR    | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DWRE4  | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563DWRG4  | ACTIVE                | SOIC         | DW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563N      | ACTIVE                | PDIP         | N               | 20   | 20          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| SN74ACT563NE4    | ACTIVE                | PDIP         | N               | 20   | 20          | Pb-Free (RoHS)          | CU NIPDAU        | N / A for Pkg Type           |
| SN74ACT563NSR    | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563NSRE4  | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563NSRG4  | ACTIVE                | SO           | NS              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PW     | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PWE4   | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PWG4   | ACTIVE                | TSSOP        | PW              | 20   | 70          | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PWLE   | OBSOLETE              | TSSOP        | PW              | 20   |             | TBD                     | Call TI          | Call TI                      |
| SN74ACT563PWR    | ACTIVE                | TSSOP        | PW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PWRE4  | ACTIVE                | TSSOP        | PW              | 20   | 2000        | Green (RoHS & no Sb/Br) | CU NIPDAU        | Level-1-260C-UNLIM           |
| SN74ACT563PWRG4  | 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.

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

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

**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 |
|---------------|--------------|-----------------|------|------|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| SN74ACT563DBR | SSOP         | DB              | 20   | 2000 | 330.0              | 16.4               | 8.2     | 7.5     | 2.5     | 12.0    | 16.0   | Q1            |
| SN74ACT563DWR | SOIC         | DW              | 20   | 2000 | 330.0              | 24.4               | 10.8    | 13.0    | 2.7     | 12.0    | 24.0   | Q1            |
| SN74ACT563NSR | SO           | NS              | 20   | 2000 | 330.0              | 24.4               | 8.2     | 13.0    | 2.5     | 12.0    | 24.0   | Q1            |
| SN74ACT563PWR | TSSOP        | PW              | 20   | 2000 | 330.0              | 16.4               | 6.95    | 7.1     | 1.6     | 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) |
|---------------|--------------|-----------------|------|------|-------------|------------|-------------|
| SN74ACT563DBR | SSOP         | DB              | 20   | 2000 | 346.0       | 346.0      | 33.0        |
| SN74ACT563DWR | SOIC         | DW              | 20   | 2000 | 346.0       | 346.0      | 41.0        |
| SN74ACT563NSR | SO           | NS              | 20   | 2000 | 346.0       | 346.0      | 41.0        |
| SN74ACT563PWR | TSSOP        | PW              | 20   | 2000 | 346.0       | 346.0      | 33.0        |

## IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

### Products

|                             |  |
|-----------------------------|--|
| Amplifiers                  | <a href="http://amplifier.ti.com">amplifier.ti.com</a>             |
| Data Converters             | <a href="http://dataconverter.ti.com">dataconverter.ti.com</a>     |
| DSP                         | <a href="http://dsp.ti.com">dsp.ti.com</a>                         |
| Clocks and Timers           | <a href="http://www.ti.com/clocks">www.ti.com/clocks</a>           |
| Interface                   | <a href="http://interface.ti.com">interface.ti.com</a>             |
| Logic                       | <a href="http://logic.ti.com">logic.ti.com</a>                     |
| Power Mgmt                  | <a href="http://power.ti.com">power.ti.com</a>                     |
| Microcontrollers            | <a href="http://microcontroller.ti.com">microcontroller.ti.com</a> |
| RFID                        | <a href="http://www.ti-rfid.com">www.ti-rfid.com</a>               |
| RF/IF and ZigBee® Solutions | <a href="http://www.ti.com/lprf">www.ti.com/lprf</a>               |

### Applications

|                    |  |
|--------------------|--|
| Audio              | <a href="http://www.ti.com/audio">www.ti.com/audio</a>                   |
| Automotive         | <a href="http://www.ti.com/automotive">www.ti.com/automotive</a>         |
| Broadband          | <a href="http://www.ti.com/broadband">www.ti.com/broadband</a>           |
| Digital Control    | <a href="http://www.ti.com/digitalcontrol">www.ti.com/digitalcontrol</a> |
| Medical            | <a href="http://www.ti.com/medical">www.ti.com/medical</a>               |
| Military           | <a href="http://www.ti.com/military">www.ti.com/military</a>             |
| Optical Networking | <a href="http://www.ti.com/opticalnetwork">www.ti.com/opticalnetwork</a> |
| Security           | <a href="http://www.ti.com/security">www.ti.com/security</a>             |
| Telephony          | <a href="http://www.ti.com/telephony">www.ti.com/telephony</a>           |
| Video & Imaging    | <a href="http://www.ti.com/video">www.ti.com/video</a>                   |
| Wireless           | <a href="http://www.ti.com/wireless">www.ti.com/wireless</a>             |

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
Copyright © 2008, Texas Instruments Incorporated