

SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

- State-of-the-Art *EPIC-II^B*™ BiCMOS Design Significantly Reduces Power Dissipation
- ESD Protection Exceeds 2000 V Per MIL-STD-883, Method 3015; Exceeds 200 V Using Machine Model (C = 200 pF, R = 0)
- Latch-Up Performance Exceeds 500 mA Per JEDEC Standard JESD-17
- Typical V_{OLP} (Output Ground Bounce) < 1 V at $V_{CC} = 5$ V, $T_A = 25^\circ\text{C}$
- High-Drive Outputs (–32-mA I_{OH} , 64-mA I_{OL})
- Package Options Include Plastic Small-Outline (DW), Shrink Small-Outline (DB), and Thin Shrink Small-Outline (PW) Packages, Ceramic Chip Carriers (FK), Ceramic Flat (W) Package, and Plastic (NT) and Ceramic (JT) DIPs

description

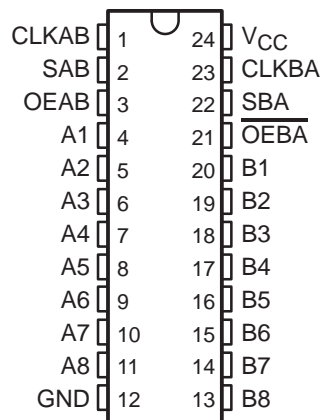
These devices consist of bus-transceiver circuits, D-type flip-flops, and control circuitry arranged for multiplexed transmission of data directly from the data bus or from the internal storage registers.

Output-enable (OEAB and \overline{OEBA}) inputs are provided to control the transceiver functions. Select-control (SAB and SBA) inputs are provided to select either real-time or stored data for transfer. The circuitry used for select control eliminates the typical decoding glitch that occurs in a multiplexer during the transition between stored and real-time data. A low input selects real-time data, and a high input selects stored data. Figure 1 illustrates the four fundamental bus-management functions that can be performed with the 'ABT652A.

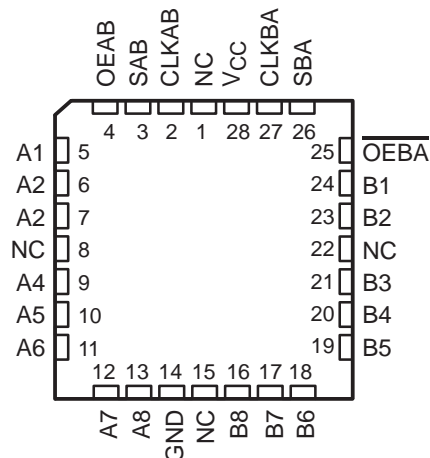
Data on the A- or B-data bus, or both, can be stored in the internal D-type flip-flops by low-to-high transitions at the appropriate clock (CLKAB or CLKBA) inputs, regardless of the select- or enable-control inputs. When SAB and SBA are in the real-time transfer mode, it is possible to store data without using the internal D-type flip-flops by simultaneously enabling OEAB and \overline{OEBA} . In this configuration, each output reinforces its input. When all other data sources to the two sets of bus lines are at high impedance, each set of bus lines remains at its last state.

To ensure the high-impedance state during power up or power down, \overline{OEBA} 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 (B to A). OEAB should be tied to GND through a pulldown resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver (A to B).

SN54ABT652A . . . JT OR W PACKAGE
SN74ABT652A . . . DB, DW, NT, OR PW PACKAGE
(TOP VIEW)



SN54ABT652A . . . FK PACKAGE
(TOP VIEW)



NC – No internal connection



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.

EPIC-II^B is a trademark of Texas Instruments Incorporated.

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

 **TEXAS
INSTRUMENTS**

POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

Copyright © 1997, Texas Instruments Incorporated

SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

description (continued)

The SN54ABT652A is characterized for operation over the full military temperature range of -55°C to 125°C .
The SN74ABT652A is characterized for operation from -40°C to 85°C .

FUNCTION TABLE

| INPUTS | | | | | | DATA I/O† | | OPERATION OR FUNCTION |
|--------|--------------------------|--------|--------|-----|-----|--------------|--------------|---|
| OEAB | $\overline{\text{OEBA}}$ | CLKAB | CLKBA | SAB | SBA | A1–A8 | B1–B8 | |
| L | H | H or L | H or L | X | X | Input | Input | Isolation |
| L | H | ↑ | ↑ | X | X | Input | Input | Store A and B data |
| X | H | ↑ | H or L | X | X | Input | Unspecified‡ | Store A, hold B |
| H | H | ↑ | ↑ | X‡ | X | Input | Output | Store A in both registers |
| L | X | H or L | ↑ | X | X | Unspecified‡ | Input | Hold A, store B |
| L | L | ↑ | ↑ | X | X‡ | Output | Input | Store B in both registers |
| L | L | X | X | X | L | Output | Input | Real-time B data to A bus |
| L | L | X | H or L | X | H | Output | Input | Stored B data to A bus |
| H | H | X | X | L | X | Input | Output | Real-time A data to B bus |
| H | H | H or L | X | H | X | Input | Output | Stored A data to B bus |
| H | L | H or L | H or L | H | H | Output | Output | Stored A data to B bus and stored B data to A bus |

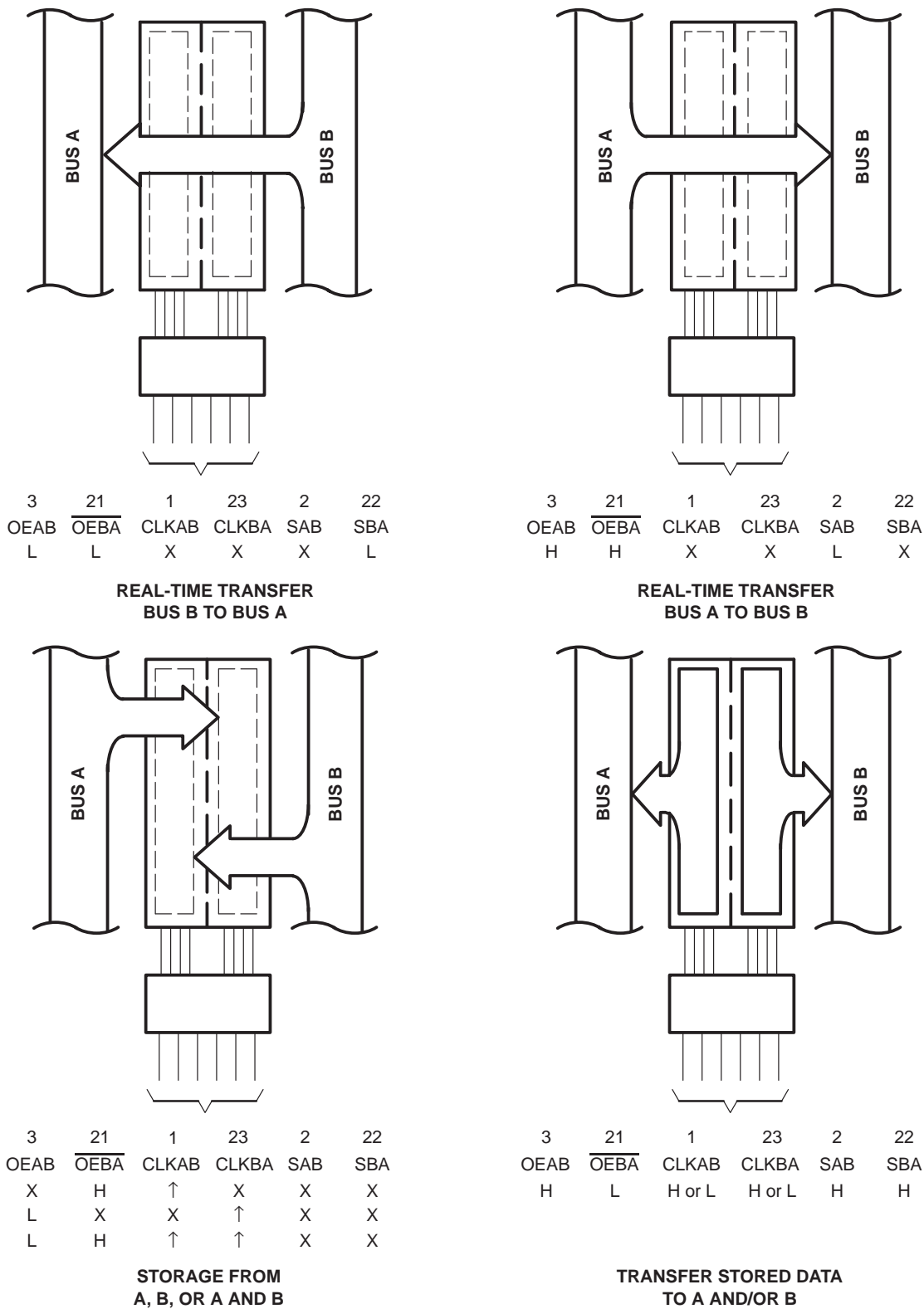
† The data-output functions may be enabled or disabled by a variety of level combinations at OEAB or $\overline{\text{OEBA}}$. Data-input functions are always enabled; i.e., data at the bus terminals is stored on every low-to-high transition of the clock inputs.

‡ Select control = L; clocks can occur simultaneously.

Select control = H; clocks must be staggered to load both registers.

SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997



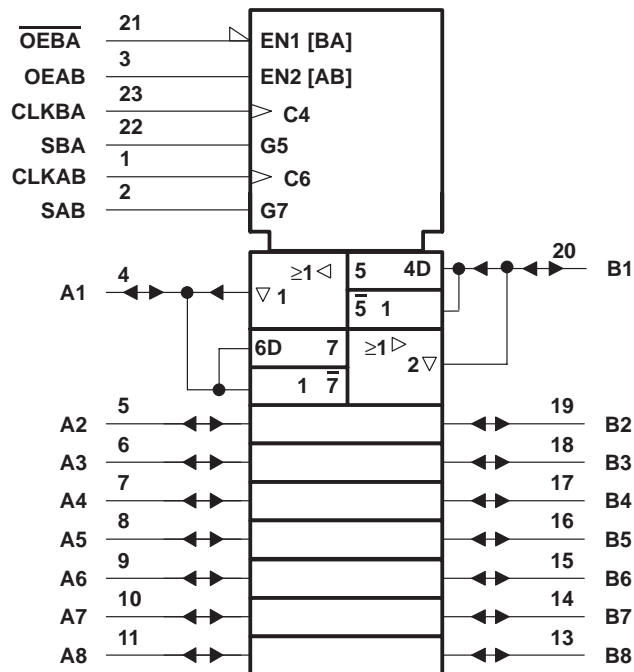
Pin numbers shown are for the DB, DW, JT, NT, PW, and W packages.

Figure 1. Bus-Management Functions

SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

logic symbol†

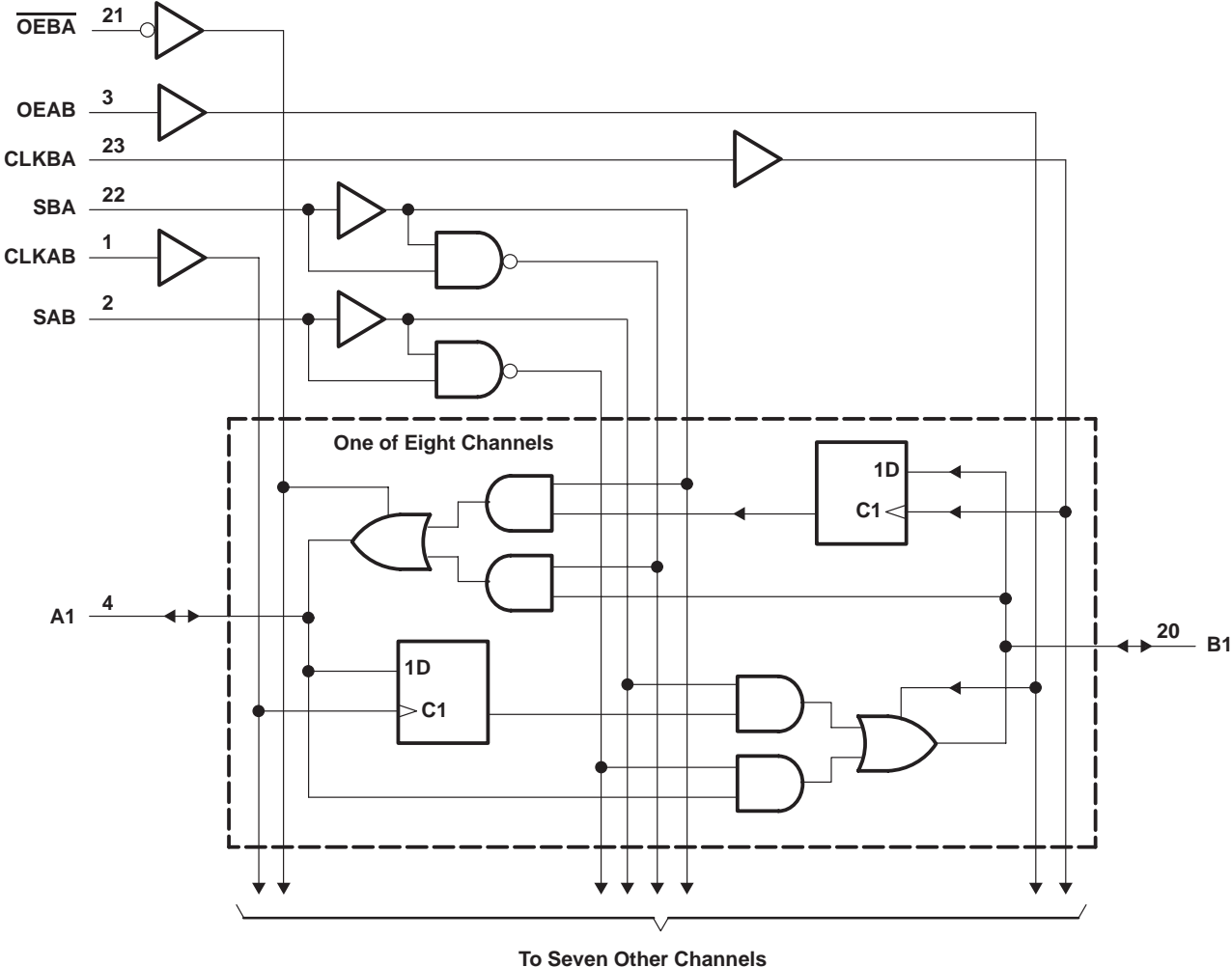


† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12. Pin numbers shown are for the DB, DW, JT, NT, PW, and W packages.

SN54ABT652A, SN74ABT652A
 OCTAL REGISTERED TRANSCEIVERS
 WITH 3-STATE OUTPUTS

SCBS072F - JANUARY 1991 - REVISED MAY 1997

logic diagram (positive logic)



Pin numbers shown are for the DB, DW, JT, NT, PW, and W packages.



SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

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 (except I/O ports) (see Note 1) | -0.5 V to 7 V |
| Voltage range applied to any output in the high or power-off state, V_O | -0.5 V to 5.5 V |
| Current into any output in the low state, I_O : SN54ABT652A | 96 mA |
| SN74ABT652A | 128 mA |
| Input clamp current, I_{IK} ($V_I < 0$) | -18 mA |
| Output clamp current, I_{OK} ($V_O < 0$) | -50 mA |
| Package thermal impedance, θ_{JA} (see Note 2): DB package | 104°C/W |
| DW package | 81°C/W |
| NT package | 67°C/W |
| PW package | 120°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 negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
2. The package thermal impedance is calculated in accordance with EIA/JEDEC Std JESD51, except for through-hole packages, which use a trace length of zero.

recommended operating conditions (see Note 3)

| | | SN54ABT652A | | SN74ABT652A | | 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 |
| I_{OH} | High-level output current | | -24 | | -32 | mA |
| I_{OL} | Low-level output current | | 48 | | 64 | mA |
| $\Delta t/\Delta v$ | Input transition rise or fall rate | Outputs enabled | | 5 | 5 | ns/V |
| T_A | Operating free-air temperature | -55 | 125 | -40 | 85 | °C |

NOTE 3: Unused pins (input or I/O) must be held high or low to prevent them from floating.



SN54ABT652A, SN74ABT652A
OCTAL REGISTERED TRANSCEIVERS
WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

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

| PARAMETER | TEST CONDITIONS | T _A = 25°C | | | SN54ABT652A | | SN74ABT652A | | UNIT | |
|--------------------------|--|--|------|-------|-------------|-------|-------------|------|------|----|
| | | MIN | TYP† | MAX | MIN | MAX | MIN | MAX | | |
| V _{IK} | V _{CC} = 4.5 V, I _I = -18 mA | | | -1.2 | | -1.2 | | -1.2 | V | |
| V _{OH} | V _{CC} = 4.5 V, I _{OH} = -3 mA | | | 2.5 | | 2.5 | | 2.5 | V | |
| | V _{CC} = 5 V, I _{OH} = -3 mA | | | 3 | | 3 | | 3 | | |
| | V _{CC} = 4.5 V | I _{OH} = -24 mA | | | 2 | | 2 | | | |
| I _{OH} = -32 mA | | | | 2* | | | | 2 | | |
| V _{OL} | V _{CC} = 4.5 V | I _{OL} = 48 mA | | | | 0.55 | | | V | |
| | | I _{OL} = 64 mA | | | | 0.55* | | 0.55 | | |
| V _{hys} | | | | 100 | | | | | mV | |
| I _I | Control inputs | V _{CC} = 5.5 V, V _I = V _{CC} or GND | | | | ±1 | | ±1 | μA | |
| | A or B ports | | | | | ±100 | | ±100 | | |
| I _{OZH} ‡ | V _{CC} = 5.5 V, V _O = 2.7 V | | | 50** | | 10 | | 50 | μA | |
| I _{OZL} ‡ | V _{CC} = 5.5 V, V _O = 0.5 V | | | -50** | | -10 | | -50 | μA | |
| I _{off} | V _{CC} = 0, V _I or V _O ≤ 4.5 V | | | ±100 | | | | ±100 | μA | |
| I _{CEX} | V _{CC} = 5.5 V, V _O = 5.5 V | Outputs high | | | | 50 | | 50 | μA | |
| I _O § | V _{CC} = 5.5 V, V _O = 2.5 V | | | -50 | -100 | -180 | | -50 | -180 | mA |
| I _{CC} | V _{CC} = 5.5 V, I _O = 0, V _I = V _{CC} or GND | Outputs high | | | | 250 | | 250 | μA | |
| | | Outputs low | | | | 30 | | 30 | mA | |
| | | Outputs disabled | | | | 250 | | 250 | μA | |
| ΔI _{CC} ¶ | V _{CC} = 5.5 V, One input at 3.4 V, Other inputs at V _{CC} or GND | | | | | 1.5 | | 1.5 | mA | |
| C _i | Control inputs | V _I = 2.5 V or 0.5 V | | | | 7 | | | pF | |
| C _{io} | A or B ports | V _O = 2.5 V or 0.5 V | | | | 12 | | | pF | |

* On products compliant to MIL-PRF-38535, this parameter does not apply.

** These limits apply only to the SN74ABT652A.

† All typical values are at V_{CC} = 5 V.

‡ The parameters I_{OZH} and I_{OZL} include the input leakage current.

§ Not more than one output should be tested at a time, and the duration of the test should not exceed one second.

¶ This is the increase in supply current for each input that is at the specified TTL voltage level rather than V_{CC} or GND.



SN54ABT652A, SN74ABT652A
OCTAL REGISTERED TRANSCEIVERS
WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

timing requirements over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted) (see Figure 2)

| | SN54ABT652A | | | | UNIT |
|--|---|-----|-----|-----|------|
| | V _{CC} = 5 V, T _A = 25°C | | MIN | MAX | |
| | MIN | MAX | | | |
| f _{clock} Clock frequency | 0 | 125 | 0 | 125 | MHz |
| t _w Pulse duration, CLK high or low | 4 | | 4 | | ns |
| t _{su} Setup time, A or B before CLKAB↑ or CLKBA↑ | 3 | | 3.5 | | ns |
| t _h Hold time, A or B after CLKAB↑ or CLKBA↑ | 1.5 | | 1.5 | | ns |

timing requirements over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted) (see Figure 2)

| | SN74ABT652A | | | | UNIT |
|--|---|-----|-----|-----|------|
| | V _{CC} = 5 V, T _A = 25°C | | MIN | MAX | |
| | MIN | MAX | | | |
| f _{clock} Clock frequency | 0 | 125 | 0 | 125 | MHz |
| t _w Pulse duration, CLK high or low | 4 | | 4 | | ns |
| t _{su} Setup time, A or B before CLKAB↑ or CLKBA↑ | 3 | | 3 | | ns |
| t _h Hold time, A or B after CLKAB↑ or CLKBA↑ | 0 | | 0 | | ns |



SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

SCBS072F – JANUARY 1991 – REVISED MAY 1997

switching characteristics over recommended ranges of supply voltage and operating free-air temperature, $C_L = 50$ pF (unless otherwise noted) (see Figure 2)

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | SN54ABT652A | | | | | UNIT |
|-----------|-------------------|-------------|---------------------------------------|-----|-----|-----|-----|------|
| | | | $V_{CC} = 5$ V, $T_A = 25^\circ$ C | | | MIN | MAX | |
| | | | MIN | TYP | MAX | | | |
| f_{max} | | | 125 | 200 | | 125 | MHz | |
| t_{PLH} | CLK | B or A | 2.2 | 4 | 5.1 | 1.7 | 5.9 | ns |
| t_{PHL} | | | 1.7 | 4 | 5.1 | 1.7 | 5.9 | |
| t_{PLH} | A or B | B or A | 1.5 | 3 | 4.8 | 1 | 5 | ns |
| t_{PHL} | | | 1.5 | 3.3 | 4.6 | 1 | 5.6 | |
| t_{PLH} | SAB or SBA† | B or A | 1.5 | 4 | 5.5 | 1.5 | 6.8 | ns |
| t_{PHL} | | | 1.5 | 3.6 | 4.9 | 1.5 | 6.2 | |
| t_{PZH} | \overline{OEBA} | A | 2 | 3.6 | 5.4 | 2 | 6.8 | ns |
| t_{PZL} | | | 3 | 5.7 | 7.7 | 3 | 9.2 | |
| t_{PHZ} | \overline{OEBA} | A | 1.5 | 3.2 | 5.8 | 1 | 7.5 | ns |
| t_{PLZ} | | | 1.5 | 3 | 4.3 | 1 | 4.6 | |
| t_{PZH} | OEAB | B | 2 | 4.3 | 6.1 | 2 | 7.8 | ns |
| t_{PZL} | | | 3 | 5.5 | 7.4 | 3 | 8.9 | |
| t_{PHZ} | OEAB | B | 1.5 | 3.3 | 6 | 1 | 8 | ns |
| t_{PLZ} | | | 1.5 | 3.4 | 5 | 1.5 | 6.8 | |

† These parameters are measured with the internal output state of the storage register opposite that of the bus input.

switching characteristics over recommended ranges of supply voltage and operating free-air temperature, $C_L = 50$ pF (unless otherwise noted) (see Figure 2)

| PARAMETER | FROM (INPUT) | TO (OUTPUT) | SN74ABT652A | | | | | UNIT |
|-----------|-------------------|-------------|---------------------------------------|-----|-----|-----|-----|------|
| | | | $V_{CC} = 5$ V, $T_A = 25^\circ$ C | | | MIN | MAX | |
| | | | MIN | TYP | MAX | | | |
| f_{max} | | | 125 | 200 | | 125 | MHz | |
| t_{PLH} | CLK | B or A | 2.2 | 4 | 5.1 | 2.2 | 5.6 | ns |
| t_{PHL} | | | 1.7 | 4 | 5.1 | 1.7 | 5.6 | |
| t_{PLH} | A or B | B or A | 1.5 | 3 | 4.3 | 1.5 | 4.8 | ns |
| t_{PHL} | | | 1.5 | 3.3 | 4.6 | 1.5 | 5.4 | |
| t_{PLH} | SAB or SBA† | B or A | 1.5 | 4 | 5.1 | 1.5 | 6.5 | ns |
| t_{PHL} | | | 1.5 | 3.6 | 4.9 | 1.5 | 5.9 | |
| t_{PZH} | \overline{OEBA} | A | 2 | 3.6 | 4.6 | 2 | 5.8 | ns |
| t_{PZL} | | | 3 | 5.7 | 6.8 | 3 | 8.5 | |
| t_{PHZ} | \overline{OEBA} | A | 1.5 | 3.2 | 4.5 | 1.5 | 5 | ns |
| t_{PLZ} | | | 1.5 | 3 | 3.8 | 1.5 | 4.1 | |
| t_{PZH} | OEAB | B | 2 | 4.3 | 6.1 | 2 | 6.5 | ns |
| t_{PZL} | | | 3 | 5.5 | 6.5 | 3 | 7.4 | |
| t_{PHZ} | OEAB | B | 1.5 | 3.3 | 4.5 | 1.5 | 5.5 | ns |
| t_{PLZ} | | | 1.5 | 3.4 | 4.4 | 1.5 | 5.1 | |

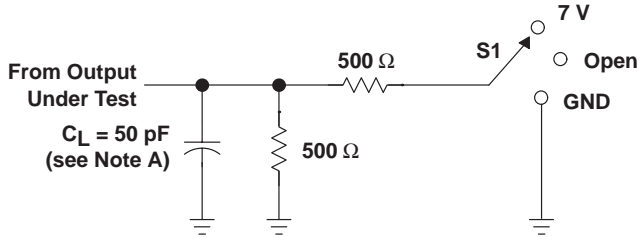
† These parameters are measured with the internal output state of the storage register opposite that of the bus input.



SN54ABT652A, SN74ABT652A OCTAL REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS

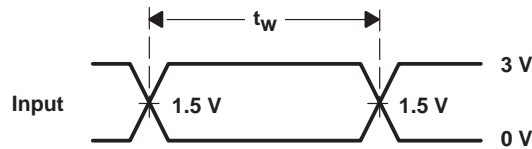
SCBS072F – JANUARY 1991 – REVISED MAY 1997

PARAMETER MEASUREMENT INFORMATION

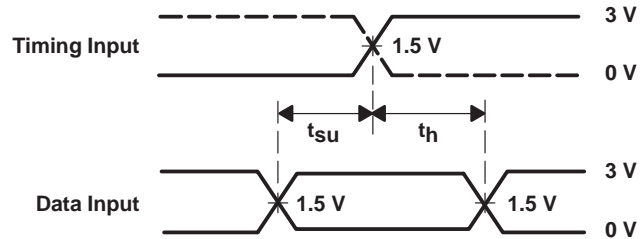


LOAD CIRCUIT

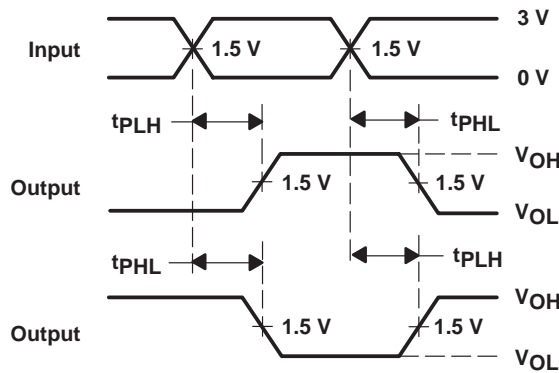
| TEST | S1 |
|-------------------|------|
| t_{PLH}/t_{PHL} | Open |
| t_{PLZ}/t_{PZL} | 7 V |
| t_{PHZ}/t_{PZH} | Open |



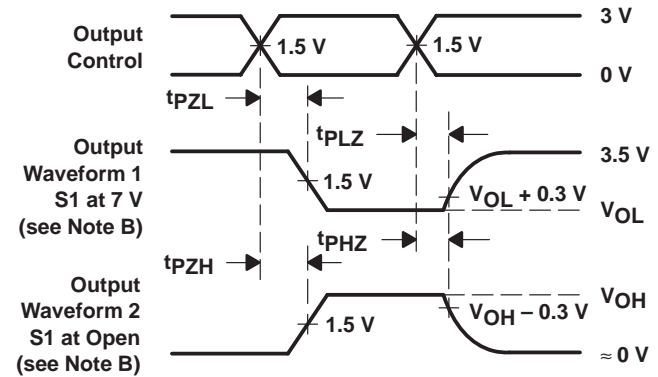
VOLTAGE WAVEFORMS
PULSE DURATION



VOLTAGE WAVEFORMS
SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES
INVERTING AND NONINVERTING OUTPUTS



VOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES
LOW- AND HIGH-LEVEL ENABLING

- 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: $PRR \leq 10 \text{ MHz}$, $Z_O = 50 \Omega$, $t_r \leq 2.5 \text{ ns}$, $t_f \leq 2.5 \text{ ns}$.
 D. The outputs are measured one at a time with one transition per measurement.

Figure 2. Load Circuit and Voltage Waveforms

IMPORTANT NOTICE

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgement, including those pertaining to warranty, patent infringement, and limitation of liability.

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

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF TI PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.

PRODUCT FOLDER | PRODUCT INFO: [FEATURES](#) | [DESCRIPTION](#) | [DATASHEETS](#) | [PRICING/AVAILABILITY/PKG](#) | [APPLICATION NOTES](#) | [USER GUIDES](#) | [MORE LITERATURE](#)

PRODUCT SUPPORT: [TRAINING](#)

SN54ABT652A, Octal Bus Transceivers And Registers With 3-State Outputs

DEVICE STATUS: **ACTIVE**

| PARAMETER NAME | SN54ABT652A | SN74ABT652A |
|---------------------------|-------------|-------------|
| Voltage Nodes (V) | 5 | 5 |
| V _{CC} range (V) | 4.5 to 5.5 | 4.5 to 5.5 |
| Input Level | TTL | TTL |
| Output Level | TTL | TTL |
| No. of Outputs | 8 | 8 |
| Static Current | | 15.12 |

FEATURES

[▲Back to Top](#)

- State-of-the-Art **EPIC-II B™** BiCMOS Design Significantly Reduces Power Dissipation
- ESD Protection Exceeds 2000 V Per MIL-STD-883, Method 3015; Exceeds 200 V Using Machine Model (C = 200 pF, R = 0)
- Latch-Up Performance Exceeds 500 mA Per JEDEC Standard JESD-17
- Typical **V_{OLP}** (Output Ground Bounce) < 1 V at V_{CC} = 5 V, T_A = 25°C
- High-Drive Outputs (-32-mA **I_{OH}**, 64-mA **I_{OL}**)
- Package Options Include Plastic Small-Outline (DW), Shrink Small-Outline (DB), and Thin Shrink Small-Outline (PW) Packages, Ceramic Chip Carriers (FK), Ceramic Flat (W) Package, and Plastic (NT) and Ceramic (JT) DIPs

EPIC-IIB is a trademark of Texas Instruments Incorporated.

DESCRIPTION

[▲Back to Top](#)

These devices consist of bus-transceiver circuits, D-type flip-flops, and control circuitry arranged for multiplexed transmission of data directly from the data bus or from the internal storage registers.

Output-enable (OEAB and OEBA\) inputs are provided to control the transceiver functions. Select-control (SAB and SBA) inputs are provided to select either real-time or stored data for transfer. The circuitry used for select control eliminates the typical decoding glitch that occurs in a multiplexer during the transition between stored and real-time data. A low input selects real-time data, and a high input selects stored data. Figure 1 illustrates the four fundamental bus-management functions that can be performed with the 'ABT652A.

Data on the A- or B-data bus, or both, can be stored in the internal D-type flip-flops by low-to-high transitions at the appropriate clock (CLKAB or CLKBA) inputs, regardless of the select- or enable-control inputs. When SAB and SBA are in the real-time transfer mode, it is possible to store data without using the internal D-type flip-flops by simultaneously enabling OEAB and OEBA\ . In this configuration, each output reinforces its input. When all other data sources to the two sets of bus lines are at high impedance, each set of bus lines remains at its last state.

To ensure the high-impedance state during power up or power down, OEBA\ 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 (B to A). OEAB should be tied to GND through a pulldown resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver (A to B).

The SN54ABT652A is characterized for operation over the full military temperature range of -55°C to 125°C. The SN74ABT652A is characterized for operation from -40°C to 85°C.

TECHNICAL DOCUMENTS

[▲Back to Top](#)

To view the following documents, [Acrobat Reader 4.0](#) is required.

To download a document to your hard drive, right-click on the link and choose 'Save'.

DATASHEET

[▲Back to Top](#)

APPLICATION NOTES

[▲Back to Top](#)

View Application Notes for [Digital Logic](#)

- [Advanced BiCMOS Technology \(ABT\) Logic Characterization Information \(Rev. B\)](#) (SCBA008B - Updated: 06/01/1997)
- [Advanced BiCMOS Technology \(ABT\) Logic Enables Optimal System Design \(Rev. A\)](#) (SCBA001A - Updated: 03/01/1997)
- [Bus-Interface Devices With Output-Damping Resistors Or Reduced-Drive Outputs \(Rev. A\)](#) (SCBA012A - Updated: 08/01/1997)
- [Designing With Logic \(Rev. C\)](#) (SDYA009C - Updated: 06/01/1997)
- [Evaluation of Nickel/Palladium/Gold-Finished Surface-Mount Integrated Circuits](#) (SZZA026 - Updated: 06/20/2001)
- [Family of Curves Demonstrating Output Skews for Advanced BiCMOS Devices \(Rev. A\)](#) (SCBA006A - Updated: 12/01/1996)
- [Implications of Slow or Floating CMOS Inputs \(Rev. C\)](#) (SCBA004C - Updated: 02/01/1998)
- [Input and Output Characteristics of Digital Integrated Circuits](#) (SDYA010 - Updated: 10/01/1996)
- [Live Insertion](#) (SDYA012 - Updated: 10/01/1996)
- [Power-Up 3-State \(PU3S\) Circuits in TI Standard Logic Devices](#) (SZZA033 - Updated: 05/10/2002)
- [Quad Flatpack No-Lead Logic Packages \(Rev. C\)](#) (SCBA017C - Updated: 11/22/2002)
- [TI IBIS File Creation, Validation, and Distribution Processes](#) (SZZA034 - Updated: 08/29/2002)
- [Understanding Advanced Bus-Interface Products Design Guide](#) (SCAA029, 253 KB - Updated: 05/01/1996)
- [Understanding and Interpreting Texas Instruments Standard-Logic Products Data Sh \(Rev. A\)](#) (SZZA036A - Updated: 02/27/2003)

MORE LITERATURE

[▲Back to Top](#)

- [Enhanced Plastic Portfolio Brochure](#) (SGZB004, 387 KB - Updated: 08/19/2002)
- [Logic Reference Guide](#) (SCYB004, 1032 KB - Updated: 10/23/2001)
- [MicroStar Junior BGA Design Summary](#) (SCET004, 167 KB - Updated: 07/28/2000)
- [Military Brief](#) (SGYN138, 803 KB - Updated: 10/10/2000)
- [Overview of IEEE Std 91-1984, Explanation of Logic Symbols Training Booklet \(Rev. A\)](#) (SDYZ001A, 138 KB - Updated: 07/01/1996)
- [Palladium Lead Finish User's Manual](#) (SDYV001, 2041 KB - Updated: 11/01/1996)
- [QML Class V Space Products Military Brief \(Rev. A\)](#) (SGZN001A, 257 KB - Updated: 10/07/2002)

USER GUIDES

[▲Back to Top](#)

- [LOGIC Pocket Data Book](#) (SCYD013, 4837 KB - Updated: 12/05/2002)

PRICING/AVAILABILITY/PKG

[▲Back to Top](#)


| DEVICE INFORMATION Updated Daily | | | | | | | | TI INVENTORY STATUS As Of 09:00 AM GMT, 17 Apr 2003 | | | REPORTED DISTRIBUTOR INVENTORY As Of 09:00 AM GMT, 17 Apr 2003 | | |
|-------------------------------------|--------|---------------------|------------|-----------------|-------------------------------|-----------------------------|--------------|--|------------------------|-----------|---|----------|----------|
| ORDERABLE DEVICE | STATUS | PACKAGE TYPE PINS | TEMP (°C) | DSCC NUMBER | PRODUCT CONTENT | BUDGETARY PRICING QTY SUS | STD PACK QTY | IN STOCK | IN PROGRESS QTY DATE | LEAD TIME | DISTRIBUTOR COMPANY REGION | IN STOCK | PURCHASE |
| 5962-9324202Q3A | ACTIVE | LCCC (FK) 28 | -55 TO 125 | | View Contents | 1KU 15.36 | 1 | 59* | 3770 20 May | 8 WKS | None Reported View Distributors | | |
| | | | | | | | | | > 10k 27 May | | | | |
| 5962-9324202QKA | ACTIVE | CFP (W) 24 | -55 TO 125 | | View Contents | 1KU 15.09 | 1 | 0* | > 10k 20 May | 8 WKS | None Reported View Distributors | | |
| 5962-9324202QLA | ACTIVE | CDIP (JT) 24 | -55 TO 125 | | View Contents | 1KU 10.55 | 1 | 137* | > 10k 20 May | 8 WKS | None Reported View Distributors | | |
| SNJ54ABT652AFK | ACTIVE | LCCC (FK) 28 | -55 TO 125 | 5962-9324202Q3A | View Contents | 1KU 15.36 | 1 | 0* | 3359 20 May | 8 WKS | None Reported View Distributors | | |
| | | | | | | | | | > 10k 27 May | | | | |

Product Folder: SN54ABT652A, Octal Bus Transceivers And Registers With 3-State Outputs

| | | | | | | | | | | | | | |
|----------------|--------|--------------------------------|------------|-----------------|-------------------------------|-------------|---|---------------------|----------------|-------|--|----|-------------------------|
| SNJ54ABT652AJT | ACTIVE | CDIP (JT) 24 | -55 TO 125 | 5962-9324202QLA | View Contents | 1KU 10.55 | 1 | 0* | 275 21 Apr | 8 WKS | None Reported View Distributors | | |
| | | | | | | | | | > 10k 20 May | | | | |
| SNJ54ABT652AW | ACTIVE | CFP (W) 24 | -55 TO 125 | 5962-9324202QKA | View Contents | 1KU 15.09 | 1 | 25* | > 10k 20 May | 8 WKS | Avnet-SILICA Europe | 70 | BUY NOW |

Table Data Updated on: 4/17/2003

[Products](#) | [Applications](#) | [Support](#) | [my.TI](#)

 TEXAS INSTRUMENTS © Copyright 1995-2002 Texas Instruments Incorporated. All rights reserved.

[Trademarks](#) | [Privacy Policy](#) | [Terms of Use](#)