

## 74LVT543 3.3V ABT Octal Registered Transceiver with TRI-STATE® Outputs

### General Description

The 74LVT543 octal transceiver contains two sets of D-type latches for temporary storage of data flowing in either direction. Separate Latch Enable and Output Enable inputs are provided for each register to permit independent control of inputting and outputting in either direction of data flow.

These octal registered transceivers is/are designed for low-voltage (3.3V)  $V_{CC}$  applications, but with the capability to provide a TTL interface to a 5V environment. The 74LVT543 is fabricated with an advanced BiCMOS technology to achieve high speed operation similar to 5V ABT while maintaining a low power dissipation.

### Features

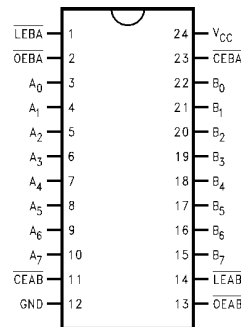
- Input and output interface capability to systems at 5V  $V_{CC}$
- Bus-Hold data inputs eliminate the need for external pull-up resistors to hold unused inputs
- Live insertion/extraction permitted
- Power Up/Down high impedance provides glitch-free bus loading
- Outputs source/sink  $-32\text{ mA}/+64\text{ mA}$
- Available in SOIC JEDEC and TSSOP
- Functionally compatible with the 74 series 543
- Latch-up performance exceeds 500 mA

### Pin Descriptions

Pin Names	Description
$\overline{OEAB}$ , $\overline{OEBA}$	Output Enable Inputs
$\overline{LEAB}$ , $\overline{LEBA}$	Latch Enable Inputs
$\overline{CEAB}$ , $\overline{CEBA}$	Chip Enable Inputs
$A_0$ – $A_7$	Side A Inputs or TRI-STATE Outputs
$B_0$ – $B_7$	Side B Inputs or TRI-STATE Outputs

### Connection Diagram

Pin Assignment  
for SOIC, SSOP II and TSSOP



TL/F/12448-1

	SOIC JEDEC	TSSOP	SSOP II
Order Number	74LVT543WM 74LVT543WMX	74LVT543MTC 74LVT543MTCX	74LTV543MSA 74LTV543MSAX
See NS Package Number	M24B	MTC24	MSA24

TRI-STATE® is a registered trademark of National Semiconductor Corporation.

## Functional Description

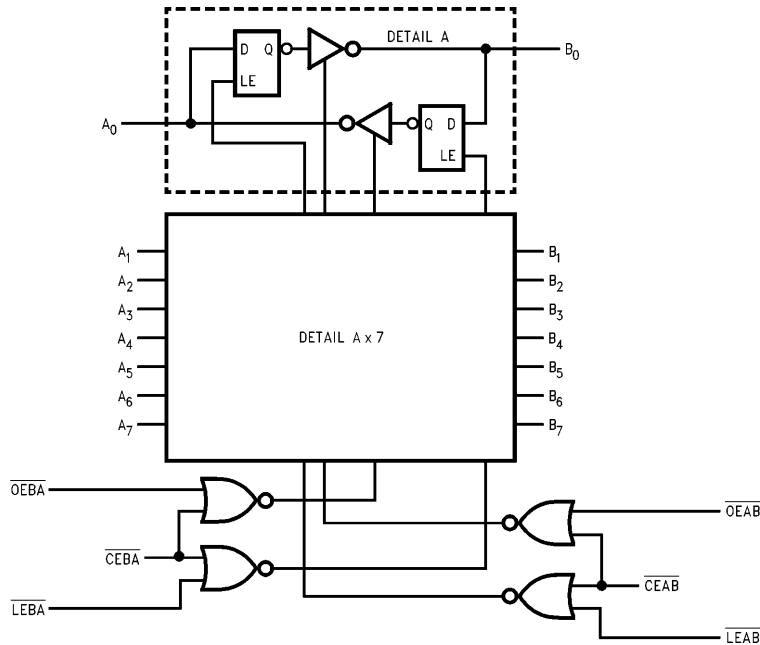
The 'LVT543 contains two sets of D-type latches, with separate input and output controls for each. For data flow from A to B, for example, the A to B Enable ( $\overline{CEAB}$ ) input must be low in order to enter data from the A port or take data from the B port as indicated in the Data I/O Control Table. With  $\overline{CEAB}$  low, a low signal on ( $\overline{LEAB}$ ) input makes the A to B latches transparent; a subsequent low to high transition of the  $\overline{LEAB}$  line puts the A latches in the storage mode and their outputs no longer change with the A inputs. With  $\overline{CEAB}$  and  $\overline{OEAB}$  both low, the B output buffers are active and reflect the data present on the output of the A latches. Control of data flow from B to A is similar, but using the  $\overline{CEBA}$ ,  $\overline{LEBA}$  and  $\overline{OEBA}$ .

Data I/O Control Table

Inputs			Latch Status	Output Buffers
$\overline{CEAB}$	$\overline{LEAB}$	$\overline{OEAB}$		
H	X	X	Latched	High Z
X	H	X	Latched	—
L	L	X	Transparent	—
X	X	H	—	High Z
L	X	L	—	Driving

H = High Voltage Level  
L = Low Voltage Level  
X = Immaterial

## Logic Diagram



TL/F/12448-2

### LIFE SUPPORT POLICY

NATIONAL'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF NATIONAL SEMICONDUCTOR CORPORATION. As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.



**National Semiconductor Corporation**  
Americas  
Tel: 1(800) 272-9959  
Fax: 1(800) 737-7018  
Email: support@nsc.com

**National Semiconductor Europe**  
Fax: +49 (0) 180-530 85 86  
Email: europe.support@nsc.com  
Deutsch Tel: +49 (0) 180-530 85 85  
English Tel: +49 (0) 180-532 78 32  
Français Tel: +49 (0) 180-532 93 58  
Italiano Tel: +49 (0) 180-534 16 80

**National Semiconductor Southeast Asia**  
Fax: (852) 2376 3901  
Email: sea.support@nsc.com

**National Semiconductor Japan Ltd.**  
Tel: 81-3-5620-7561  
Fax: 81-3-5620-6179

<http://www.national.com>

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.