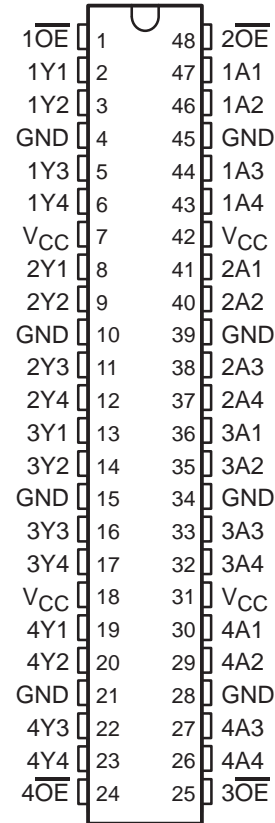


- Member of the Texas Instruments *Widebus™* Family
- State-of-the-Art *EPIC-IIB™* BiCMOS Design Significantly Reduces Power Dissipation
- Latch-Up Performance Exceeds 500 mA Per JEDEC Standard JESD-17
- Typical V_{OLP} (Output Ground Bounce) < 1 V at $V_{CC} = 5$ V, $T_A = 25^\circ\text{C}$
- Distributed V_{CC} and GND Pin Configuration Minimizes High-Speed Switching Noise
- Flow-Through Architecture Optimizes PCB Layout
- High-Drive Outputs ($-32\text{-mA } I_{OH}$, $64\text{-mA } I_{OL}$)
- Packaged in Plastic 300-mil Shrink Small-Outline (SSOP) Packages

DL PACKAGE
(TOP VIEW)



description

The SN74ABT16240 is a 16-bit buffer and line driver designed specifically to improve both the performance and density of 3-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters. The device can be used as four 4-bit buffers, two 8-bit buffers, or one 16-bit buffer. This device provides inverting outputs and symmetrical active-low output-enable (\overline{OE}) inputs.

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.

The SN74ABT16240 is available in TI's shrink small-outline package (DL), which provides twice the I/O pin count and functionality of standard small-outline packages in the same printed-circuit-board area.

The SN74ABT16240 is characterized for operation from -40°C to 85°C .

FUNCTION TABLE
(each 4-bit buffer)

INPUTS		OUTPUT
\overline{OE}	A	Y
L	H	L
L	L	H
H	X	Z

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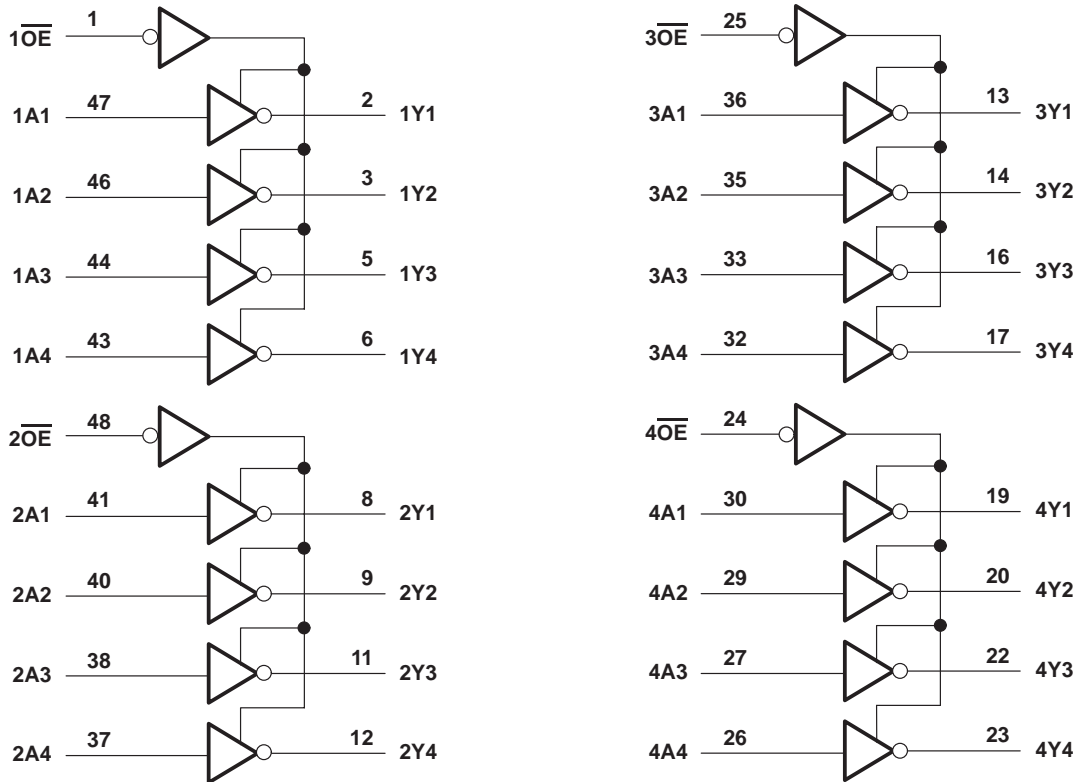
PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



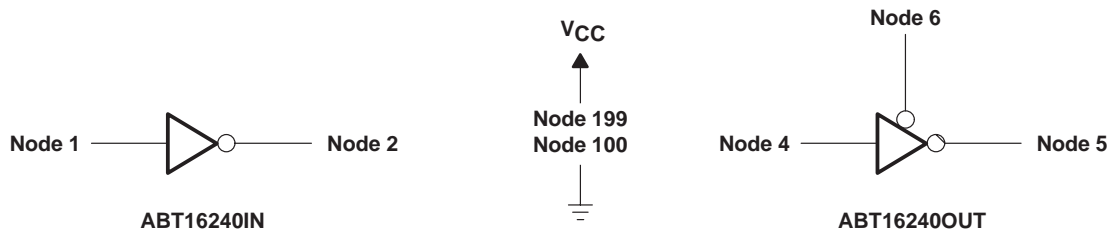
SN74ABT16240
16-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SCBS346 – MAY 1994

logic diagram (positive logic)



SPICE block diagram



SPICE FUNCTION TABLE

NODE		OPERATION	NODE			OPERATION
1	2		4	5	6	
L	H	Input	L	H	L	Output
H	L	Input	H	L	L	Output
X	X		X	Z	H	Hi-Z

SPICE netlist

```

*   ABT16240 SPICE I/O MODEL SUBCIRCUIT
*   ADVANCED BUS INTERFACE
*   ADVANCED SYSTEM LOGIC, TEXAS INSTRUMENTS
*
*   SUBCIRCUITS:  ABT16240IN, ABT16240OUT
*
*   PACKAGE PARASITICS
*     .LIB 'PKGS.LIB'    SSOP48
*
*   PROCESS MODELS
*     .LIB 'EPIC2B.LIB'  NOMINAL_L13
*     .LIB 'EPIC2B.LIB'  STRONG_L13
*     .LIB 'EPIC2B.LIB'  WEAK_L13
*
* ABT16240 INPUT SUBCIRCUIT
*   NODES:           INPUT NODE
*                   |         |
*                   |         | INTERNAL OUTPUT NODE
*                   |         | VCC      GND
*                   |         |         |
*                   |         |         |
* .SUBCKT ABT16240IN  1         2         199    100
* X_PKGIN            1         1001
* X_PKGVCC           199      1199
* X_PKG_GND          100      1100
* XABT16240IN        1001    2         1199    1100
*                   ABT16240__IN
* .ENDS ABT16240IN
*
* ABT16240 OUTPUT SUBCIRCUIT
*   NODES:           INTERNAL INPUT NODE
*                   |         |
*                   |         | OUTPUT NODE
*                   |         | INTERNAL OE NODE
*                   |         | VCC      GND
*                   |         |         |
*                   |         |         |
* .SUBCKT ABT16240OUT  4         5         6         199    100
* X_PKGOUT           5         1005
* X_PKGVCC           199      1199
* X_PKG_GND          100      1100
* XABT16240OUT       4         1005    6         1199    1100
*                   ABT16240__OUT
* .ENDS ABT16240OUT
*
* .SUBCKT ABT16240__IN  501    502    599    500
* XP1                502    504    506    599    PM            WP=200U    LP=0.8U
* XP2                509    502    599    599    PM            WP=20U     LP=0.8U
* XP3                506    509    599    599    PM            WP=85U    LP=0.8U
* XP4                508    500    599    599    PM            WP=50U    LP=0.8U
* XN1                502    504    500    500    NM            WN=220U   LN=0.8U
* XN2                509    502    500    500    NM            WN=20U    LN=0.8U
* XN4                599    500    508    500    NM            WN=20U    LN=0.8U
* QA                 599    508    507            Q2_NPN        10
* QB                 599    507    506            Q5_NPN        60
* Q_ESD1             501    500    500            Q7_NPN        200
* Q_ESD              504    505    500            Q5_NPN        46
* XR1                506    507    507    507    RMOS          WR=4U     RES=6K
* RESD1             501    504
* RESD2             505    500
* CBP                501    500
* CL                 502    500
* .ENDS ABT16240__IN
*
* .SUBCKT ABT16240__OUT  601    602    603    699    600
* XP1                605    603    699    699    PM            WP=200U   LP=0.8U
* XP4                601    603    621    699    PM            WP=40U    LP=0.8U
* XP5                613    601    605    699    PM            WP=30U    LP=0.8U
* XP10               618    603    699    699    PM            WP=50U    LP=0.8U
* XP11               607    612    605    699    PM            WP=60U    LP=0.8U
* XN1                607    601    608    600    NM            WN=100U   LN=0.8U
    
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SN74ABT16240
16-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SPICE I/O MODEL

SCBS346 – MAY 1994

SPICE netlist (continued)

```

XN2      606  619  607  600  NM      WN=50U      LN=0.8U
XN3      608  609  600  600  NM      WN=25U      LN=0.8U
XN4      608  603  600  600  NM      WN=80U      LN=0.8U
XN6      613  603  600  600  NM      WN=25U      LN=0.8U
XN7      602  621  600  600  NM      WN=100U     LN=0.8U
XN8      621  603  600  600  NM      WN=10U      LN=0.8U
XN9      601  622  621  600  NM      WN=20U      LN=0.8U
XN10     619  619  620  600  NM      WN=25U      LN=0.8U
XN11     620  604  602  600  NM      WN=25U      LN=0.8U
XN12     613  601  600  600  NM      WN=40U      LN=0.8U
QM1      616  615  602      Q9_NPN     200
QM2      602  608  600      Q11_NPN    600
QM3      614  613  615      Q4_NPN     15
QD4      614  614  616      Q2_NPN     8
QDR1     615  615  613      Q2_NPN     8
D1       613  614      D1_GDS     156
D2       699  617      D9_GSD     4700
XR1      606  605  605  605  RMOS     WR=6U      RES=1K
XR2      607  606  606  606  RMOS     WR=4U      RES=3K
XR3      614  605  605  605  RMOS     WR=6U      RES=1K
R4       616  617      10
XR10     619  618  618  618  RMOS     WR=3U      RES=20K
XPVREF   670  603  699  699  PM       WP=50U     LP=0.8U
XNVREF   671  671  600  600  NM       WN=30U     LN=0.8U
XRVREF1  604  670  670  670  RMOS     WR=3U      RES=20K
XRVREF2  671  604  604  604  RMOS     WR=3U      RES=1.5K
XNCLAMP  673  612  674  600  NM       WN=250U    LN=0.8U
DCLAMP1  608  673      D6_GSD     800
DCLAMP2  674  602      D6_GSD     800
XPNOR1   675  609  699  699  PM       WP=30U     LP=0.8U
XPNOR2   612  611  675  699  PM       WP=30U     LP=0.8U
XNNOR1   612  611  600  600  NM       WN=6U      LN=0.8U
XNNOR2   612  609  600  600  NM       WN=6U      LN=0.8U
XP_INV1  609  601  699  699  PM       WP=20U     LP=0.8U
XN_INV1  609  601  600  600  NM       WN=10U     LN=0.8U
XP_INV2  622  603  699  699  PM       WP=15U     LP=0.8U
XN_INV2  622  603  600  600  NM       WN=5U      LN=0.8U
XP_INV3  610  603  699  699  PM       WP=4U      LP=0.8U
XN_INV3  610  603  600  600  NM       WN=4U      LN=0.8U
XP_INV4  611  610  699  699  PM       WP=4U      LP=0.8U
XN_INV4  611  610  600  600  NM       WN=4U      LN=0.8U
CBP      602  600      0.3P
.ENDS ABT16240__OUT
*

```



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