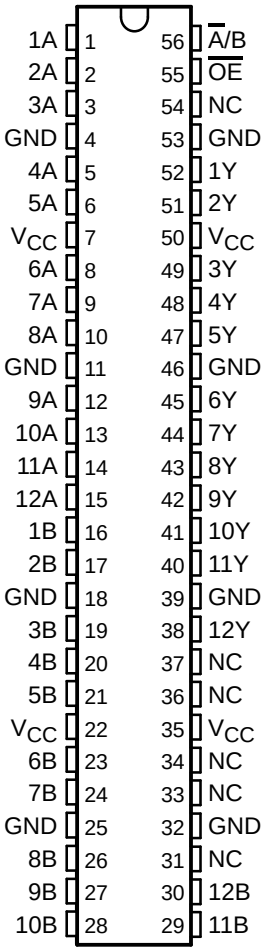
- **Member of the Texas Instruments *Widebus*™ Family**
- ***EPIC*™ (Enhanced-Performance Implanted CMOS) Submicron Process**
- **Designed to Facilitate Incident-Wave Switching for Line Impedances of 50 Ω or Greater**
- **Typical V_{OLP} (Output Ground Bounce) < 0.8 V at V_{CC} = 3.3 V, T_A = 25°C**
- **Typical V_{OHV} (Output V_{OH} Undershoot) > 2 V at V_{CC} = 3.3 V, T_A = 25°C**
- **ESD Protection Exceeds 2000 V Per MIL-STD-883C, Method 3015; Exceeds 200 V Using Machine Model (C = 200 pF, R = 0)**
- **Bus-Hold On Data Inputs Eliminates the Need for External Pullup/Pulldown Resistors**
- **Latch-Up Performance Exceeds 250 mA Per JEDEC Standard JESD-17**
- **Package Options Include Plastic 300-mil Shrink Small-Outline (DL) and Thin Shrink Small-Outline (DGG) Packages**

DGG OR DL PACKAGE
(TOP VIEW)



description

This 24-bit to 12-bit multiplexer is designed for 2.7-V to 3.6-V V_{CC} operation.

This device is designed to multiplex signals from 24-bit data sources to 12-output data lines in bus-organized systems. The 3-state outputs will not load the data lines when the output-enable ($\overline{OE}$) input is at a high logic level.

The SN74ALVC16258 is available in TI's shrink small-outline (DL) and thin shrink small-outline (DGG) packages, which provide twice the I/O pin count and functionality of standard small-outline packages in the same printed-circuit-board area.

The 74ALVC16258 is characterized for operation from – 40°C to 85°C.

FUNCTION TABLE

INPUTS				OUTPUT
$\overline{OE}$	SELECT $\overline{A}$/B	DATA A	DATA B	Y
H	X	X	X	Z
L	L	L	X	H
L	L	H	X	L
L	H	X	L	H
L	H	X	H	L

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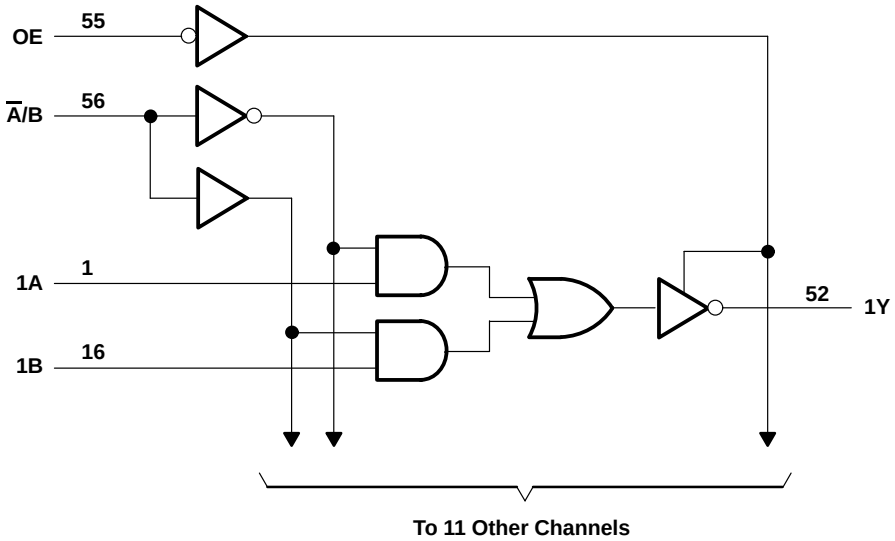
logic diagram (positive logic)



PRODUCT PREVIEW

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

Supply voltage range, V_{CC} . . . . . –0.5 V to 4.6 V
Input voltage range, V_I (see Note 1) . . . . . –0.5 V to 4.6 V
Output voltage range, V_O (see Notes 1 and 2) . . . . . –0.5 V to V_{CC} + 0.5 V
Input clamp current, I_{IK} (V_I < 0) . . . . . –50 mA
Output clamp current, I_{OK} (V_O < 0 or V_O > V_{CC}) . . . . . ±50 mA
Continuous output current, I_O (V_O = 0 to V_{CC}) . . . . . ±50 mA
Continuous current through V_{CC} or GND pins . . . . . ±100 mA
Maximum power dissipation at T_A = 55°C (in still air): DGG package . . . . . 1 W
DL package . . . . . 1.4 W
Storage temperature range . . . . . –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 clamp-current ratings are observed.
2. This value is limited to 4.6 V maximum.

recommended operating conditions

			MIN	MAX	UNIT
V_{CC}	Supply voltage		2.7	3.6	V
V_{IH}	High-level input voltage	V_{CC} = 2.7 V to 3.6 V	2		V
V_{IL}	Low-level input voltage	V_{CC} = 2.7 V to 3.6 V		0.8	V
V_I	Input voltage		0	V_{CC}	V
V_O	Output voltage		0	V_{CC}	V
I_{OH}	High-level output current	V_{CC} = 2.7 V		–12	mA
		V_{CC} = 3 V		–24†	
I_{OL}	Low-level output current	V_{CC} = 2.7 V		12	mA
		V_{CC} = 3 V		24†	
$\Delta t/\Delta v$	Input transition rise or fall rate		0	10	ns/V
T_A	Operating free-air temperature		–40	85	°C

† Current duty cycle ≤ 50%, f ≥ 1 kHz

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

PARAMETER	TEST CONDITIONS		V_{CC}‡	MIN	TYP	MAX	UNIT
V_{IK}	I_I = –18 mA		2.7 V			–1.2	V
V_{OH}	I_{OH} = –100 μA		MIN to MAX	V_{CC}–0.2			V
	I_{OH} = –12 mA		2.7 V	2.2			
			3 V	2.4			
	I_{OH} = –24 mA		3 V	2			
V_{OL}	I_{OL} = 100 μA		MIN to MAX			0.2	V
	I_{OL} = 12 mA		2.7 V			0.4	
	I_{OL} = 24 mA		3 V			0.55	
I_I	$V_I = V_{CC}$ or GND		3.6 V			±5	μA
$I_{I(hold)}$	V_I = 0.8 V		3 V	75			μA
	V_I = 2 V			–75			
I_{OZ}	$V_O = V_{CC}$ or GND		3.6 V			±10	μA
I_{CC}	$V_I = V_{CC}$ or GND,	I_O = 0	3.6 V			40	μA
ΔI_{CC}	V_{CC} = 3 V to 3.6 V, Other inputs at V_{CC} or GND	One input at V_{CC} – 0.6 V,				750	μA
C_i	$V_I = V_{CC}$ or GND		3.3 V				pF
C_o	$V_O = V_{CC}$ or GND		3.3 V				pF

‡ For conditions shown as MIN or MAX, use the appropriate values under recommended operating conditions.

PRODUCT PREVIEW

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