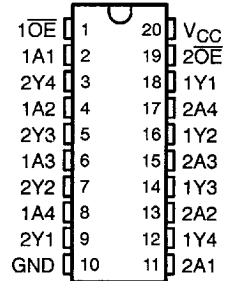


SN74LV244 OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS

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- **EPIC™** (Enhanced-Performance Implanted CMOS) 2- μ Process
- Typical V_{OLP} (Output Ground Bounce) < 0.8 V at $V_{CC} = 3.3$ V, $T_A = 25^\circ\text{C}$
- Typical V_{OHV} (Output V_{OH} Undershoot) > 2 V at $V_{CC} = 3.3$ V, $T_A = 25^\circ\text{C}$
- ESD Protection Exceeds 2000 V Per MIL-STD-883C, Method 3015; Exceeds 200 V Using Machine Model ($C = 200$ pF, $R = 0$)
- Latch-Up Performance Exceeds 250 mA Per JEDEC Standard JESD-17
- Package Options Include Plastic Small-Outline (DW), Shrink Small-Outline (DB), and Thin Shrink Small-Outline (PW) Packages

DB, DW, OR PW PACKAGE
(TOP VIEW)



description

This octal buffer/line driver is designed for 2.7-V to 3.6-V V_{CC} operation.

The SN74LV244 is designed specifically to improve both the performance and density of 3-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters.

The SN74LV244 is organized as two 4-bit line drivers with separate output-enable (\overline{OE}) inputs. When \overline{OE} is low, the device passes data from the A inputs to the Y outputs. When \overline{OE} is high, the outputs are in the high-impedance state.

The SN74LV244 is available in TI's shrink small-outline package (DB), which provides the same I/O pin count and functionality of standard small-outline packages in less than half the printed-circuit-board area.

The SN74LV244 is characterized for operation from -40°C to 85°C .

FUNCTION TABLE
(each buffer)

INPUTS		OUTPUT
\overline{OE}	A	Y
L	H	H
L	L	L
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.

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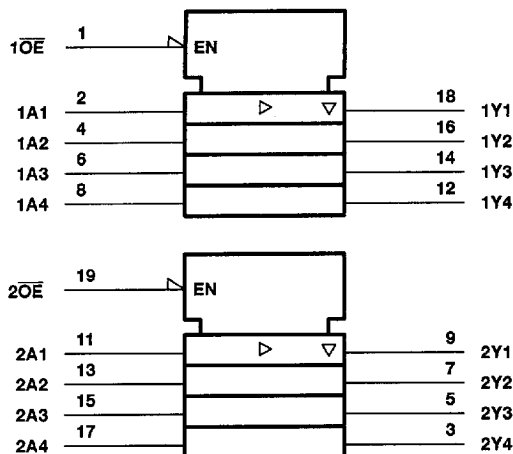
SN74LV244

OCTAL BUFFER/DRIVER

WITH 3-STATE OUTPUTS

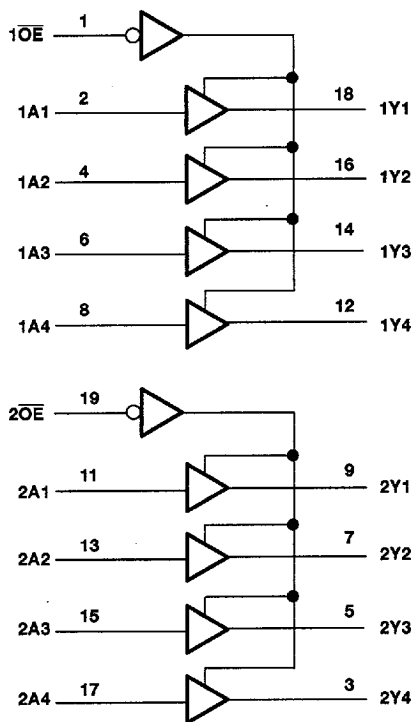
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logic symbol†



† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

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 4.6 V
Input voltage range, V_I (see Note 1)	-0.5 V to $V_{CC} + 0.5$ 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} ($V_I < 0$ or $V_I > V_{CC}$)	± 20 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})	± 35 mA
Continuous current through V_{CC} or GND	± 70 mA
Maximum power dissipation at $T_A = 55^\circ\text{C}$ (in still air) (see Note 3):	
DB package	0.6 W
DW package	1.6 W
PW package	0.7 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.

3. The maximum package power dissipation is calculated using a junction temperature of 150°C and a board trace length of 750 mils. For more information, refer to the *Package Thermal Considerations* application note.

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SN74LV244

OCTAL BUFFER/DRIVER

WITH 3-STATE OUTPUTS

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recommended operating conditions (see Note 4)

		MIN	NOM	MAX	UNIT
V _{CC}	Supply voltage	2.7	3.3	3.6	V
V _{IH}	High-level input voltage	V _{CC} = 2.7 V to 3.6 V			V
V _{IL}	Low-level input voltage	V _{CC} = 2.7 V to 3.6 V			V
V _I	Input voltage	0	V _{CC}		V
V _O	Output voltage	0	V _{CC}		V
I _{OH}	High-level output current			-8	mA
I _{OL}	Low-level output current			8	mA
Δt/Δv	Input transition rise or fall rate	0		100	ns/V
T _A	Operating free-air temperature	-40		85	°C

NOTE 4: Unused or floating inputs must be held high or low.

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

PARAMETER	TEST CONDITIONS	V _{CC} †	T _A = -40°C to 85°C			UNIT
			MIN	TYP	MAX	
V _{OH}	I _{OH} = -100 μA	MIN to MAX	V _{CC} -0.2			V
	I _{OH} = -8 mA	3 V	2.4			
V _{OL}	I _{OL} = 100 μA	MIN to MAX	0.2			V
	I _{OL} = 8 mA	3 V	0.4			
I _I	V _I = V _{CC} or GND	3.6 V	±1			μA
I _{OZ}	V _O = V _{CC} or GND	3.6 V	±5			μA
I _{CC}	V _I = V _{CC} or GND, I _O = 0	3.6 V	20			μA
ΔI _{CC}	V _{CC} = 3 V to 3.6 V, One input at V _{CC} - 0.6 V, Other inputs at V _{CC} or GND		500			μA
C _i	V _I = V _{CC} or GND	3.3 V	3			pF
C _o	V _O = V _{CC} or GND	3.3 V	8			pF

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

switching characteristics over recommended operating free-air temperature range, C_L = 50 pF (unless otherwise noted) (see Note 5)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} = 3.3 V ± 0.3 V			V _{CC} = 2.7 V		UNIT
			MIN	TYP	MAX	MIN	MAX	
t _{pd}	A	Y		10	19		24	ns
t _{en}	OE	Y		14	26		33	ns
t _{dis}	OE	Y		15	26		32	ns

NOTE 5: Load circuit and voltage waveforms are shown in Section 1.

operating characteristics, V_{CC} = 3.3 V, T_A = 25°C

PARAMETER		TEST CONDITIONS		TYP	UNIT
C _{pd}	Power dissipation capacitance per buffer/driver	Outputs enabled	C _L = 50 pF, f = 10 MHz	40	pF
		Outputs disabled		4	

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