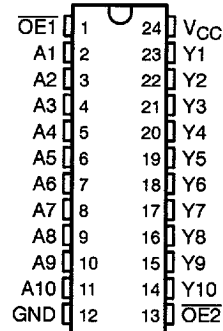


SN74LVC827 10-BIT BUFFER/DRIVER WITH 3-STATE OUTPUTS

SCAS306A – MARCH 1993 – REVISED JUNE 1994

- **EPIC™** (Enhanced-Performance Implanted CMOS) Submicron 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, $T_A = 25^\circ\text{C}$
- **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 10-bit buffer/bus driver is designed for 2.7-V to 3.6-V V_{CC} operation.

The SN74LVC827 provides a high-performance bus interface for wide data paths or buses carrying parity.

The 3-state control gate is a 2-input AND gate with active-low inputs so that if either output-enable ($\overline{OE1}$ or $\overline{OE2}$) input is high, all ten outputs are in the high-impedance state. The SN74LVC827 provides true data at its outputs.

The SN74LVC827 is characterized for operation from -40°C to 85°C .

FUNCTION TABLE

INPUTS			OUTPUT
OE1	OE2	A	Y
L	L	L	L
L	L	H	H
H	X	X	Z
X	H	X	Z

EPIC 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.



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7-143

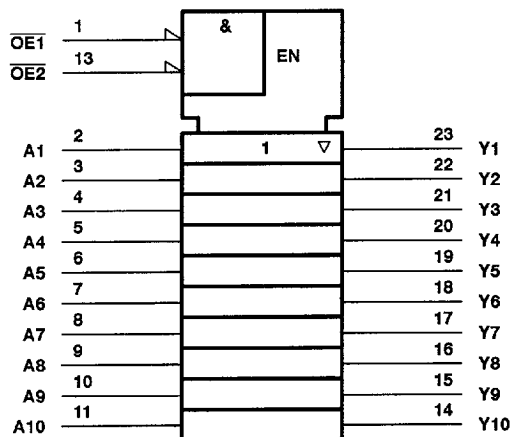
SN74LVC827

10-BIT BUFFER/DRIVER

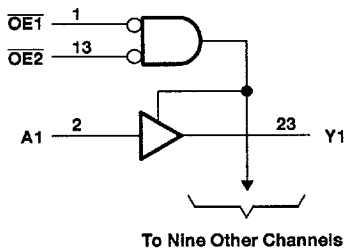
WITH 3-STATE OUTPUTS

SCAS306A - MARCH 1993 - REVISED JUNE 1994

logic symbol†



logic diagram (positive logic)



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

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	-0.5 V to 4.6 V
Output voltage range, V_O (see Note 1)	-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	±100 mA
Maximum power dissipation at $T_A = 55^\circ\text{C}$ (in still air):	
DB package	0.65 W
DW package	1.7 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.

NOTE 1: This value is limited to 4.6 V maximum.

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TEXAS
INSTRUMENTS

7-144

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SN74LVC827
10-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SCAS306A – MARCH 1993 – REVISED JUNE 1994

recommended operating conditions (see Note 2)

			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	
Δt/Δv	Input transition rise or fall rate		0	10	ns/V
T _A	Operating free-air temperature		−40	85	°C

NOTE 2: 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} = -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 _{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	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	7.5			pF
C _o	V _O = V _{CC} or GND	3.3 V	8.5			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, $C_L = 50\text{ pF}$ (unless otherwise noted) (see Note 3)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 3.3\text{ V} \pm 0.3\text{ V}$			$V_{CC} = 2.7\text{ V}$	UNIT
			MIN	TYP	MAX	MAX	
t_{pd}	A	Y	1.5	3.5	7	8	ns
t_{en}	$\overline{OE}$	Y	1.5	4.3	9	11	ns
t_{dis}	$\overline{OE}$	Y	1.5	4	8	9	ns

NOTE 3: Load circuit and voltage waveforms are shown in Section 1.

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7-145

SN74LVC827
10-BIT BUFFER/DRIVER
WITH 3-STATE OUTPUTS

SCAS306A – MARCH 1993 – REVISED JUNE 1994

operating characteristics, $V_{CC} = 3.3\text{ V}$, $T_A = 25^\circ\text{C}$

PARAMETER		TEST CONDITIONS	TYP	UNIT
C_{pd} Power dissipation capacitance per buffer/driver	Outputs enabled	$C_L = 50\text{ pF}$, $f = 10\text{ MHz}$	25	pF
	Outputs disabled		2.5	

8961723 0100554 403



7-146

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