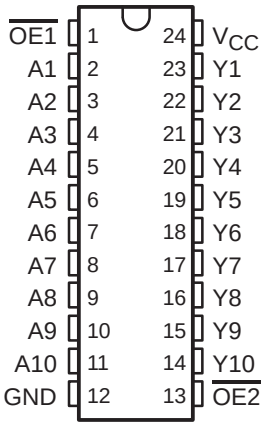
- **Functionally Equivalent to AMD's AM29827 and AM29828**
- **3-State Outputs Drive Bus Lines or Buffer Memory Address Registers**
- **pnp Inputs Reduce dc Loading**
- **Data Flow-Through Pinout (All Inputs on Opposite Side From Outputs)**
- **Power-Up High-Impedance State**
- **Package Options Include Plastic Small-Outline (DW) Packages and Standard Plastic (NT) 300-mil DIPs**

DW OR NT PACKAGE
(TOP VIEW)



description

These 10-bit buffers and bus drivers provide high-performance bus interface for wide data paths or buses carrying parity.

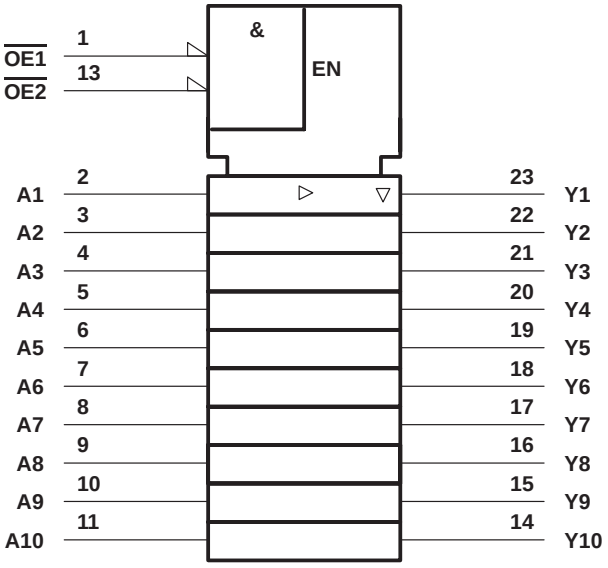
The 3-state control gate is a 2-input NOR such that if either output-enable ($\overline{OE1}$ or $\overline{OE2}$) input is high, all ten outputs are in the high-impedance state.

The SN74ALS29827 provides true data and the SN74ALS29828 provides inverted data at their respective outputs.

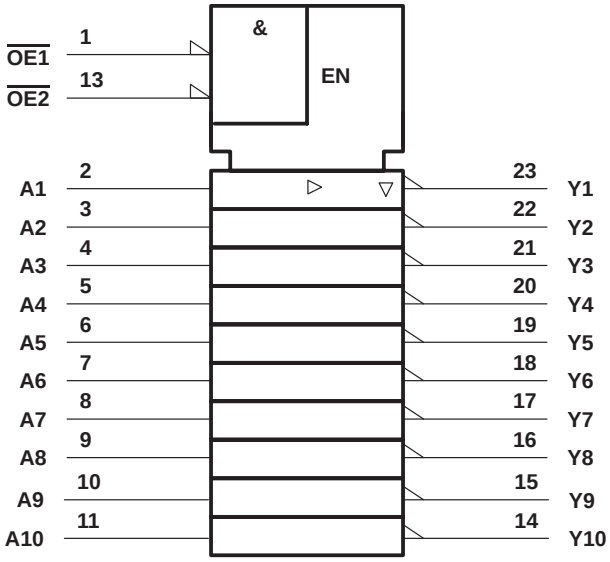
The SN74ALS29827 and SN74ALS29828 are characterized for operation from 0°C to 70°C.

logic symbols†

SN74ALS29827

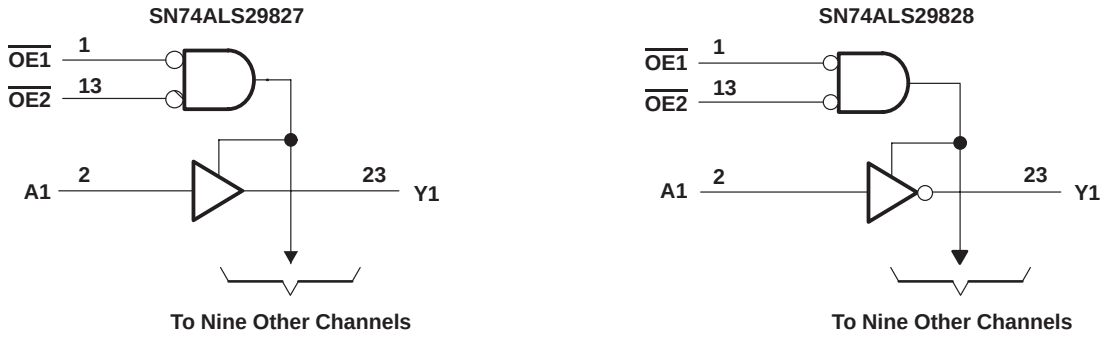


SN74ALS29828



† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagrams (positive logic)



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

Supply voltage, V_{CC} . . . . . 7 V
Input voltage, V_I . . . . . 5.5 V
Voltage applied to a disabled 3-state output . . . . . 5.5 V
Operating free-air temperature range, T_A . . . . . 0°C to 70°C
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.

recommended operating conditions

		SN74ALS29827 SN74ALS29828			UNIT
		MIN	NOM	MAX	
V_{CC}	Supply voltage	4.75	5	5.25	V
V_{IH}	High-level input voltage	2			V
V_{IL}	Low-level input voltage			0.8	V
I_{OH}	High-level output current			–24	mA
I_{OL}	Low-level output current			48	mA
T_A	Operating free-air temperature	0		70	°C

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

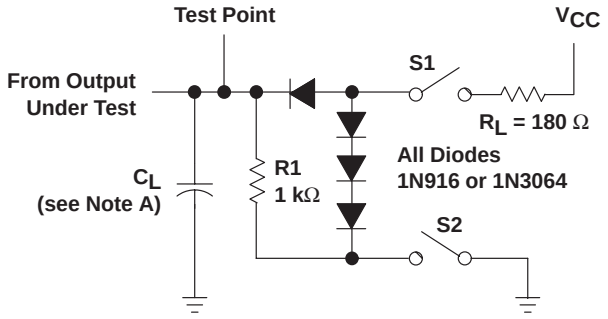
PARAMETER	TEST CONDITIONS		SN74ALS29827 SN74ALS29828			UNIT
			MIN	TYP†	MAX	
V_{IK}	V_{CC} = 4.75 V,	I_I = –18 mA			–1.2	V
V_{OH}	V_{CC} = 4.75 V	I_{OH} = –15 mA	2.4			V
		I_{OH} = –24 mA	2			
V_{OL}	V_{CC} = 4.75 V,	I_{OL} = 48 mA		0.35	0.5	V
I_{OZH}	V_{CC} = 5.25 V,	V_O = 2.4 V			20	µA
I_{OZL}	V_{CC} = 5.25 V,	V_O = 0.4 V			–20	µA
I_I	V_{CC} = 5.25 V,	V_I = 5.5 V			0.1	mA
I_{IH}	V_{CC} = 5.25 V,	V_I = 2.7 V			20	µA
I_{IL}	V_{CC} = 5.25 V,	V_I = 0.4 V			–0.1	mA
I_{OS}‡	V_{CC} = 5.25 V,	V_O = 0	–75		–250	mA
I_{CC}	V_{CC} = 5.25 V			25	40	mA

† All typical values are at V_{CC} = 5 V, T_A = 25°C.
‡ Not more than one output should be shorted at a time, and the duration of the short circuit should not exceed one second.

switching characteristics (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	V_{CC} = 4.75 V to 5.25 V				UNIT
				SN74ALS29827		SN74ALS29828		
				MIN	MAX	MIN	MAX	
t_{PLH}	A	Y	C_L = 300 pF		15		14	ns
t_{PHL}					15		14	
t_{PLH}	A	Y	C_L = 50 pF		8		7	ns
t_{PHL}					8		7.5	
t_{PZH}	$\overline{OE}$	Y	C_L = 300 pF		20		20	ns
t_{PZL}					23		23	
t_{PZH}	$\overline{OE}$	Y	C_L = 50 pF		15		15	ns
t_{PZL}					15		15	
t_{PHZ}	$\overline{OE}$	Y	C_L = 50 pF		17		17	ns
t_{PLZ}					12		12	
t_{PHZ}	$\overline{OE}$	Y	C_L = 5 pF		9		9	ns
t_{PLZ}					9		9	

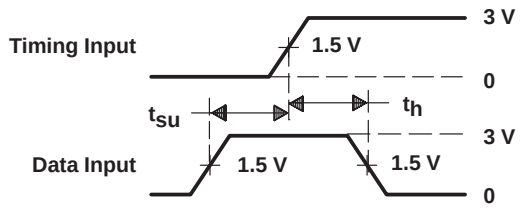
PARAMETER MEASUREMENT INFORMATION



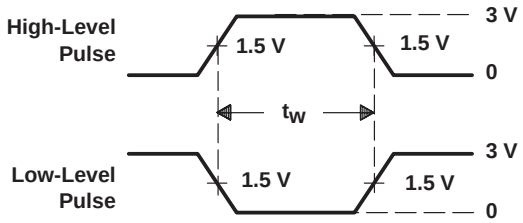
LOAD CIRCUIT

SWITCH POSITION TABLE

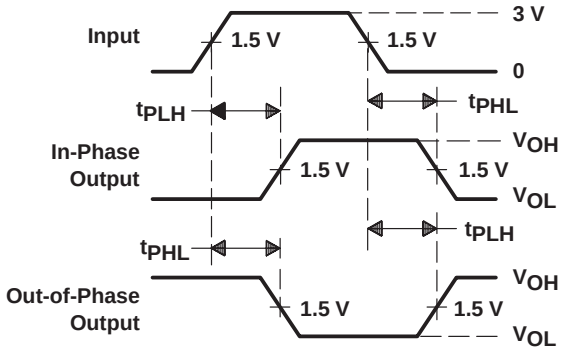
TEST	S1	S2
t_{PLH}	Closed	Closed
t_{PHL}	Closed	Closed
t_{PZH}	Open	Closed
t_{PZL}	Closed	Open
t_{PHZ}	Closed	Closed
t_{PLZ}	Closed	Closed



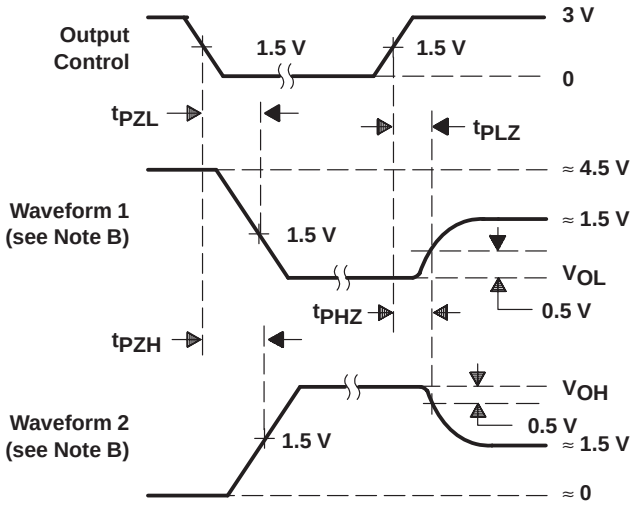
VOLTAGE WAVEFORMS
SETUP AND HOLD TIMES



VOLTAGE WAVEFORMS
PULSE DURATIONS



VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES



VOLTAGE WAVEFORMS
ENABLE AND DISABLE TIMES, 3-STATE OUTPUTS

NOTES: A. C_L includes probe and jig capacitance.
B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
C. All input pulses are supplied by generators having the following characteristics: PRR ≤ 10 MHz, Z_O = 50 Ω, $t_r \leq$ 2.5 ns, $t_f \leq$ 2.5 ns.

Figure 1. Load Circuit and Voltage Waveforms

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