

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceed the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

Am29827/Am29828

High Performance Buffers

DISTINCTIVE CHARACTERISTICS

- High-speed buffers and inverters
 - Noninverting $t_{PD} = 5.0\text{ns typ}$
 - Inverting $t_{PD} = 4.5\text{ns typ}$
- 200mV minimum input hysteresis on input data ports
- Three-state outputs glitch-free during power-up and -down. Outputs have Schottky clamp to ground
- 48mA commercial IOL, 32mA military IOL
- High capacitance load capability
- Low capacitance inputs and outputs

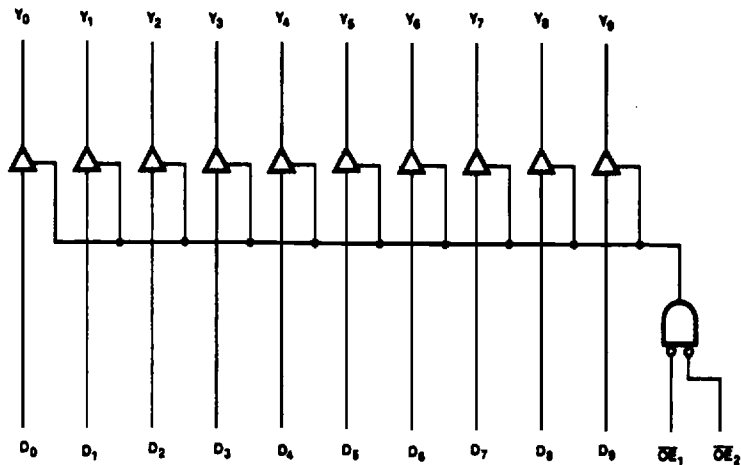
GENERAL DESCRIPTION

The Am29827 and Am29828 10-bit bus buffers provide high performance bus interface buffering for wide data/address paths or buses carrying parity. The 10-bit buffers have NOR-ed output enables for maximum control flexibility. All buffer data inputs have 200mV minimum input hysteresis to provide improved noise rejection.

All of the Am29800 high performance interface family are designed for high capacitance load drive capability while providing low capacitance bus loading at both inputs and outputs. All inputs are Schottky diode inputs, and all outputs are designed for low capacitance bus loading in the high impedance state.

BLOCK DIAGRAM

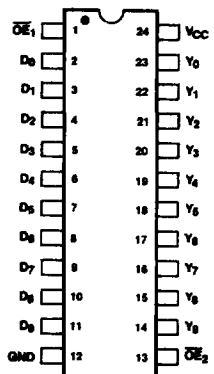
Am29827/Am29828 10-BIT BUFFERS



BD001090

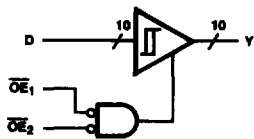
CONNECTION DIAGRAM
Top View

Am29827/Am29828 10-BIT BUS DRIVERS



CD001170

LOGIC SYMBOL

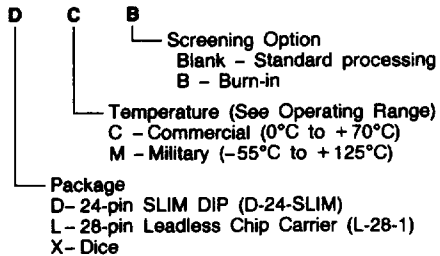


Am29827 (NONINVERTING)
LS000390

ORDERING INFORMATION

AMD products are available in several packages and operating ranges. The order number is formed by a combination of the following: Device number, speed option (if applicable), package type, operating range and screening option (if desired).

Am29827
Am29828



Device type
High Performance Buffers

Valid Combinations	
Am29827 Am29828	DC, DCB, DM, DMB LC, LCB, LM, LMB XC, XM

Valid Combinations

Consult the AMD sales office in your area to determine if a device is currently available in the combination you wish.

PIN DESCRIPTION

Pin No.	Name	I/O	Description
	\overline{OE}_i	I	When both are LOW the outputs are enabled. When either one or both are HIGH the outputs are HI-Z.
	D_i	I	10-bit data input.
	Y_i	O	10-bit data output.

FUNCTION TABLES

Am29827 (Noninverting)

Inputs		Outputs	Function
\overline{OE}	D_i	Y_i	
L	H	H	Transparent
L	L	L	Transparent
H	X	Z	HI-Z

Am29828 (Inverting)

Inputs		Outputs	Function
\overline{OE}	D_i	\overline{Y}_i	
L	H	L	Transparent
L	L	H	Transparent
H	X	Z	HI-Z

ABSOLUTE MAXIMUM RATINGS

Storage Temperature -65°C to +150°C
 Ambient Temperature with
 Power Applied -55°C to +125°C
 Supply Voltage to Ground Potential
 Continuous -0.5V to +7.0V
 DC Voltage Applied to Outputs
 for High Output State -1.5V to V_{CCmax}
 DC Input Voltage -0.5V to +5.5V
 Output Current, into Outputs 100mA
 DC Input Current -30mA to +5.0mA

OPERATING RANGES

Commercial (C) Devices
 Temperature 0°C to +70°C
 Supply Voltage +4.75V to +5.25V
 Military (M) Devices
 Temperature -55°C to +125°C
 Supply Voltage +4.5V to +5.5V
Operating ranges define those limits over which the functionality of the device is guaranteed.

Stresses above those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent device failure. Functionality at or above these limits is not implied. Exposure to absolute maximum ratings for extended periods may affect device reliability.

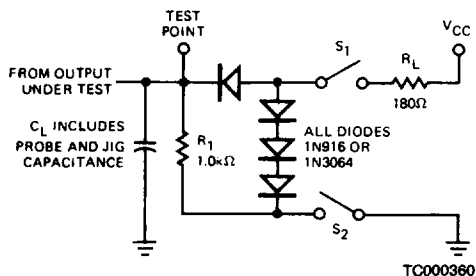
DC CHARACTERISTICS over operating range unless otherwise specified

Parameters	Description	Test Conditions	Min	Typ (Note 1)	Max	Units
V _{OH}	Output HIGH Voltage	V _{CC} = MIN V _{IN} = V _{IH} or V _{IL}	I _{OH} = -15mA	2.4		V
			I _{OH} = -24mA	2.0		
V _{OL}	Output LOW Voltage	V _{CC} = MIN V _{IN} = V _{IH} or V _{IL}	MIL, I _{OL} = 32mA		0.5	V
			COM'L, I _{OL} = 48mA		0.5	
V _{IH}	Input HIGH Level	Guaranteed input logical HIGH voltage for all inputs	2.0			V
V _{IL}	Input LOW Level	Guaranteed input logical LOW voltage for all inputs			0.8	V
V _I	Input Clamp Voltage	V _{CC} = MIN, I _{IN} = -18mA			-1.2	V
V _{HYST}	Input Hysteresis	Output under test connected to Switching Test Circuit	200			mV
I _{IL}	Input LOW Current	V _{CC} = MAX, V _{IN} = 0.4V			-1.0	mA
I _{IH}	Input HIGH Current	V _{CC} = MAX, V _{IN} = 2.7V			50	μA
I _I	Input HIGH Current	V _{CC} = MAX, V _{IN} = 5.5V			1.0	mA
I _{OZH}	Output Off-State Output Current (HI-Z)	V _{CC} = MAX, V _O = 2.4V			50	μA
I _{OZL}	Output Off-State Output Current (HI-Z)	V _{CC} = MAX, V _O = 0.4V			-50	μA
I _{SC}	Output Short Circuit Current	V _{CC} = MAX	-75		-250	mA
I _{CC}	Supply Current	V _{CC} = MAX Outputs Open	Over Temperature Range		80	mA
			+70°C		75	
			+125°C		70	

Note: 1 Typical Units are V_{CC} = 5V, T_A = 25°C



SWITCHING TEST CIRCUIT



Note: Pulse Generator for All Pulses: Rate \leq 10MHz;

SWITCHING CHARACTERISTICS ($T_A = +25^\circ\text{C}$, $V_{CC} = 5.0\text{V}$)

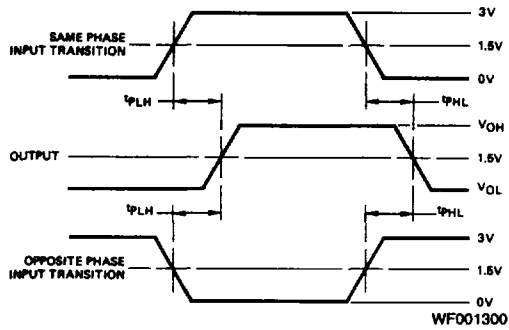
Parameters	Description	Test Conditions	Min	Typ	Max	Units
t _{PLH}	Data (D _i) to Output (Y _i) Am29827 (Noninverting)	$C_L = 50\text{pF}$		4.8	6.0	ns
t _{PHL}				5.2	6.2	ns
t _{PLH}		$C_L = 300\text{pF}$		8.0	11	ns
t _{PHL}				10.8	13.2	ns
t _{PLH}	Data (D _i) to Output (Y _i) Am29828 (Inverting)	$C_L = 50\text{pF}$		4.0	5.2	ns
t _{PHL}				4.9	5.9	ns
t _{PLH}		$C_L = 300\text{pF}$		7.3	10	ns
t _{PHL}				10.5	12.9	ns
t _{ZH}	Output Enable Time $\overline{\text{OE}}$ to Y _i	$C_L = 50\text{pF}$		6.5	12	ns
t _{ZL}				9.5	12	ns
t _{ZH}		$C_L = 300\text{pF}$		11	17	ns
t _{ZL}				18	21	ns
t _{HZ}	Output Disable Time $\overline{\text{OE}}$ to Y _i	$C_L = 5\text{pF}$		3.5	8.0	ns
t _{LZ}				3.5	8.0	ns
t _{HZ}		$C_L = 50\text{pF}$		11.2	16	ns
t _{LZ}				4.5	11	ns

SWITCHING CHARACTERISTICS over operating range unless otherwise specified

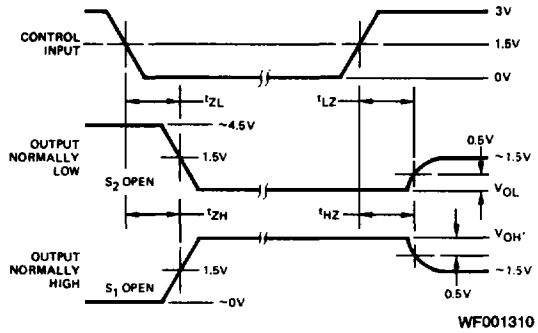
Parameters	Description	Test Conditions	COMMERCIAL		MILITARY		Units
			Min	Max	Min	Max	
t _{PLH}	Data (D _i) to Output (Y _i) Am29827 (Noninverting)	$C_L = 50\text{pF}$		8		10	ns
t _{PHL}				8		10	ns
t _{PLH}		$C_L = 300\text{pF}$		15		17	ns
t _{PHL}				15		17	ns
t _{PLH}	Data (D _i) to Output (Y _i) Am29828 (Inverting)	$C_L = 50\text{pF}$		7.0		9.0	ns
t _{PHL}				7.5		9.5	ns
t _{PLH}		$C_L = 300\text{pF}$		14		16	ns
t _{PHL}				14		16	ns
t _{ZH}	Output Enable Time $\overline{\text{OE}}$ to Y _i	$C_L = 50\text{pF}$		15		17	ns
t _{ZL}				15		17	ns
t _{ZH}		$C_L = 300\text{pF}$		20		22	ns
t _{ZL}				23		25	ns
t _{HZ}	Output Disable Time $\overline{\text{OE}}$ to Y _i	$C_L = 5\text{pF}$		9		10	ns
t _{LZ}				9		10	ns
t _{HZ}		$C_L = 50\text{pF}$		17		19	ns
t _{LZ}				12		12	ns

SWITCHING WAVEFORMS

PROPAGATION DELAY



ENABLE AND DISABLE TIMES



- Notes: 1. Diagram shown for Input Control Enable-LOW and Input Control Disable-HIGH.
 2. S_1 and S_2 of Load Circuit are closed except where shown.