Rochester Electronics

Datasheet

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.

Am29827A

High-Performance Buffer

Advanced Micro Devices

DISTINCTIVE CHARACTERISTICS

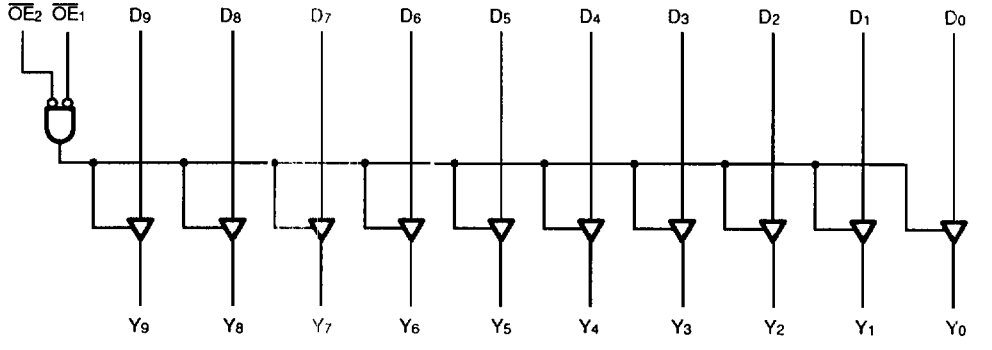
- **High speed buffers and inverters**
  - t_{PD} = 5.0 ns typ
  - Inverting t_{PD} = 4.5 ns typ
- **200 mV minimum input hysteresis on input data ports**
- **Three-state outputs glitch-free during power-up and power-down**
- **I_{OL}: 48 mA Commercial**
- **Higher speed, lower power version of the Am29827**

GENERAL DESCRIPTION

The Am29827A Bus Buffer provides high performance bus interface buffering for wide address/data paths or buses carrying parity. The device features a 10-bit wide data path and NORed output enables for maximum control flexibility. The Am29827A has non-inverting outputs, and features data inputs with 200 mV minimum input hysteresis to provide improved noise immunity. The Am29827A is produced with AMD's proprietary IMOX™ bipolar process, and features typical propagation delays of 5 ns.

Each member of the Am29800A Bus Interface Family is designed to drive high-capacitive loads while providing low-capacitive bus loading at both inputs and outputs.

BLOCK DIAGRAM



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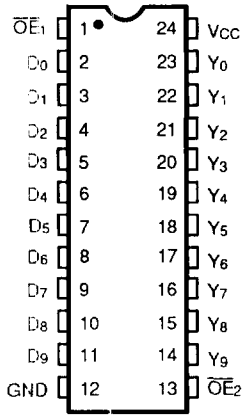
CONNECTION DIAGRAM
(Top View)

DIP



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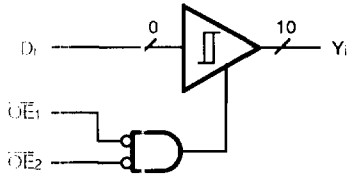
LOGIC SYMBOL



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FUNCTION TABLE

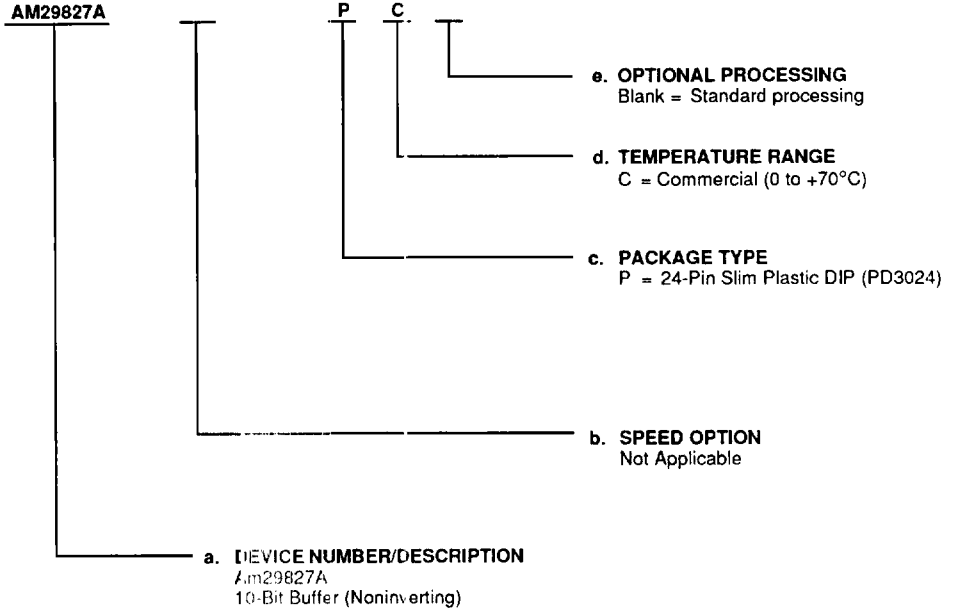
Inputs			Outputs	
$\overline{OE}_1$	$\overline{OE}_2$	D_i	Y_i	Function
L	L	H	H	Transparent
L	L	L	L	Transparent
X	H	X	Z	Hi-Z
H	X	X	Z	Hi-Z

H = HIGH
L = LOW
X = Don't Care
Z = High Impedance

ORDERING INFORMATION
Standard Products

AMD standard products are available in several packages and operating ranges. The order number (Valid Combination) is formed by a combination of:

a. Device Number
b. Speed Option (if applicable)
c. Package Type
d. Temperature Range
e. Optional Processing



Valid Combinations	
AM29827A	PC

Valid Combinations

Valid Combinations list configurations planned to be supported in volume for this device. Consult the local AMD sales office to confirm availability of specific valid combinations or to check on newly released combinations, and to obtain additional data on AMD's standard military grade products.

PIN DESCRIPTION

$\overline{OE_i}$
Output Enables (Input, Active LOW)

When both Output Enables are LOW, the outputs are enabled. When either one or both are HIGH, the outputs are Hi-Z.

D_i
Data Inputs (Input)

D_i are the 10-bit data inputs.

Y_i
Data Outputs (Output)

Y_i are the 10-bit data outputs.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	−65 to +150°C
Ambient Temperature with Power Applied	−55 to +125°C
Supply Voltage to Ground Potential Continuous	−0.5 V to +7.0 V
DC Voltage Applied to Outputs for High Output State	−0.5 V to +5.5 V
DC Input Voltage	−1.5 V to +6.0 V
Output Current, into Outputs	100 mA
DC Input Current	−30 mA to +5.0 mA

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.

OPERATING RANGES

Commercial (C) Devices

Temperature (T_A)	0 to +70°C
Supply Voltage (V_{CC})	+4.5 V to +5.5 V

Operating ranges define those limits between which the functionality of the device is guaranteed.

DC CHARACTERISTICS over operating ranges unless otherwise specified

Parameter Symbol	Parameter Description	Test Conditions		Min.	Max.	Unit
V_{OH}	Output HIGH Voltage	V_{CC} = 4.5 V	I_{OH} = −15 mA	2.4		V
		V_{IN} = V_{IH} or V_{IL}	I_{OH} = −24 mA	2.0		
V_{OL}	Output LOW Voltage	V_{CC} = 4.5 V	I_{OL} = 48 mA		0.5	V
		V_{IN} = V_{IH} or V_{IL}				
V_{IH}	Input HIGH Voltage	Guaranteed Input Logical HIGH Voltage for All Inputs (Note 1)		2.0		V
V_{IL}	Input LOW Voltage	Guaranteed Input Logical LOW Voltage for All Inputs (Note 1)			0.8	V
V_I	Input Clamp Voltage	V_{CC} = 4.5 V, I_{IN} = −18 mA			−1.2	V
V_{HYST}	Input Hysteresis			200		mV
I_{IL}	Input LOW Current	V_{CC} = 5.5 V, V_{IN} = 0.4 V			−0.5	mA
I_{IH}	Input HIGH Current	V_{CC} = 5.5 V, V_{IN} = 2.7 V			50	µA
I_I	Input HIGH Current	V_{CC} = 5.5 V, V_{IN} = 5.5 V			100	µA
I_{OZH}	Output Off-State Current	V_{CC} = 5.5 V, V_O = 2.7 V			50	µA
I_{OZL}	(High Impedance	V_{CC} = 5.5 V, V_O = 0.4 V			−50	µA
I_{SC}	Output Short-Circuit Current	V_{CC} = 5.5 V, V_O = 0 V (Note 2)		−75	−250	mA
I_{OFF}	Bus Leakage Current	V_{CC} = 0 V, V_{OUT} = 2.9 V			100	µA
I_{CC}	Supply Current	V_{CC} = 5.5 V	Outputs LOW		80	mA
		Outputs Unloaded	Outputs HIGH		55	
			Outputs Hi-Z		70	

Notes:

1. Input thresholds are tested during DC parameter testing, and may be tested in combination with other DC parameters.
2. Not more than one output shorted at a time. Duration of the short-circuit test should not exceed one second.

SWITCHING CHARACTERISTICS over operating ranges unless otherwise specified

Parameter Symbol	Parameter Description	Test Conditions*	Min.	Max.	Unit
t_{PLH}	Data (D_i) to Output (Y_i)	C_L = 50 pF R_1 = 500 Ω R_2 = 500 Ω		8	ns
t_{PHL}				8	ns
t_{ZH}	Output Enable Time $\overline{OE}$ to Y_i			11	ns
t_{ZL}				12	ns
t_{HZ}	Output Disable Time $\overline{OE}$ to Y_i			10	ns
t_{LZ}				10	ns

*See test circuit and waveforms (Chapter 2).