



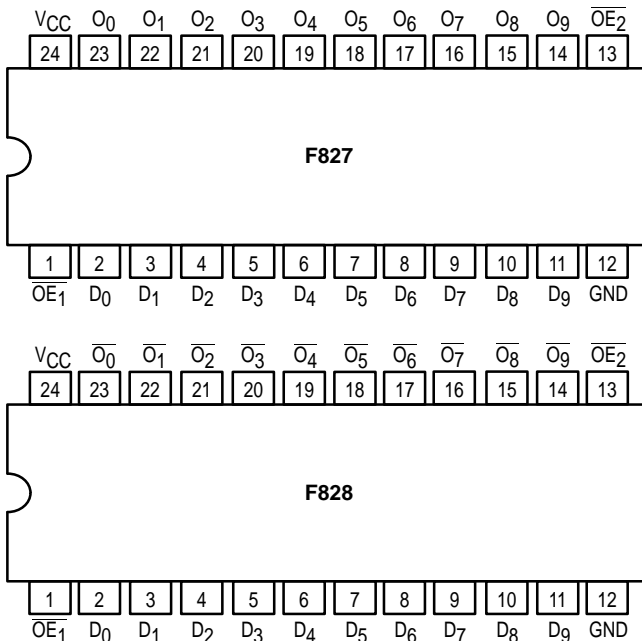
# 10-BIT BUFFERS/LINE DRIVERS (WITH 3-STATE OUTPUTS)

The MC54/74F827 and MC54/74F828 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 output enables for maximum control flexibility.

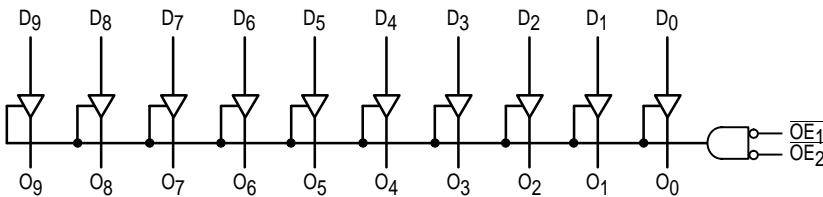
The F827 and F828 are functionally and pin compatible to AMD's 29827 and 29828. The F828 is an inverting version of the F827.

- 3-State Outputs Drive Memory Address, Bus and Clock Lines
- Outputs Sink 64 mA
- 15 mA Source Current
- Flow Through Pinout Architecture for Microprocessor Oriented Applications

## CONNECTION DIAGRAMS (TOP VIEW)



## LOGIC DIAGRAM

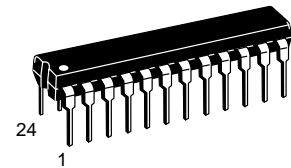


Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

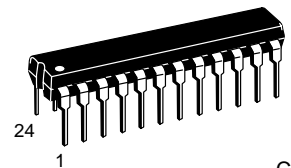
# MC54/74F827 MC54/74F828

## 10-BIT BUFFERS/LINE DRIVERS (WITH 3-STATE OUTPUTS)

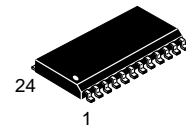
FAST™ SCHOTTKY TTL



**J SUFFIX**  
CERAMIC  
CASE 758-01



**N SUFFIX**  
PLASTIC  
CASE 724-03

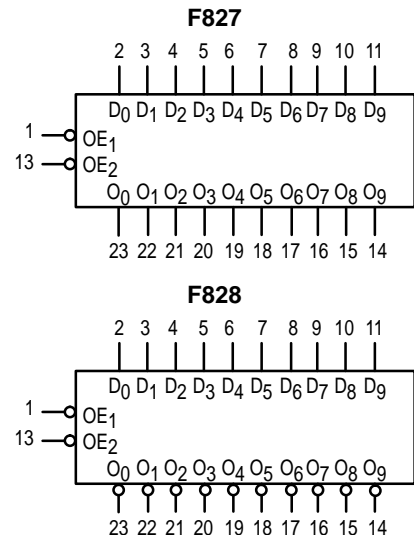


**DW SUFFIX**  
SOIC  
CASE 751E-03

## ORDERING INFORMATION

MC54FXXXJ	Ceramic
MC74FXXXN	Plastic
MC74FXXXDW	SOIC

## LOGIC SYMBOL



# MC54/74F827 • MC54/74F828

## GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage*	54, 74	4.5	5.0	5.5	V
T <sub>A</sub>	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I <sub>OH</sub>	Output Current — High	54	—	—	-12	mA
		74	—	—	-15	
I <sub>OL</sub>	Output Current — Low	54	—	—	48	mA
		74	—	—	64	

## FUNCTION TABLE

Inputs		Outputs		Function
OE	D <sub>n</sub>	O <sub>n</sub>		
		F827	F828	
L	H	H	L	Transparent
L	L	L	H	Transparent
H	X	Z	Z	High Z

H = HIGH Voltage Level

L = LOW Voltage Level

X = Don't Care

Z = High Impedance

# MC54/74F827 • MC54/74F828

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions		
		Min	Typ	Max				
V <sub>IH</sub>	Input HIGH Voltage	2.0	—	—	V	Guaranteed Input HIGH Voltage		
V <sub>IL</sub>	Input LOW Voltage	—	—	0.8	V	Guaranteed Input LOW Voltage		
V <sub>IK</sub>	Input Clamp Diode Voltage	—	—	-1.2	V	I <sub>IN</sub> = -18 mA	V <sub>CC</sub> = MIN	
V <sub>OH</sub>	Output HIGH Voltage	54	2.0	—	—	V	I <sub>OH</sub> = -12 mA	V <sub>CC</sub> = MIN
		74	2.0	—	—	V	I <sub>OH</sub> = -15 mA	
		54, 74	2.4	—	—	V	I <sub>OH</sub> = -3.0 mA	
		74	2.7	—	—	V	I <sub>OH</sub> = -3.0 mA	V <sub>CC</sub> = 4.75 V
V <sub>OL</sub>	Output LOW Voltage	54	—	—	0.55	V	I <sub>OL</sub> = 48 mA	V <sub>CC</sub> = MIN
		74	—	—	0.55	V	I <sub>OL</sub> = 64 mA	
I <sub>OZH</sub>	Output Off Current HIGH	—	—	50	μA	V <sub>OUT</sub> = 2.7 V	V <sub>CC</sub> = MAX	
I <sub>OZL</sub>	Output Off Current LOW	—	—	-50	μA	V <sub>OUT</sub> = 0.5 V	V <sub>CC</sub> = MAX	
I <sub>IH</sub>	Input HIGH Current	—	—	20	μA	V <sub>IN</sub> = 2.7 V	V <sub>CC</sub> = 0 V	
		—	—	100	μA	V <sub>IN</sub> = 7.0 V		
I <sub>IL</sub>	Input LOW Current	—	—	-20	μA	V <sub>IN</sub> = 0.5 V	V <sub>CC</sub> = MAX	
I <sub>OS</sub>	Output Short Circuit Current (Note 2)	-100	—	-225	mA	V <sub>OUT</sub> = 0 V	V <sub>CC</sub> = MAX	
I <sub>CCH</sub>	Power Supply Current HIGH	F827	—	—	70	mA	Outputs HIGH	V <sub>CC</sub> = MAX
		F828	—	—	45	mA		
I <sub>CCL</sub>	Power Supply Current LOW	F827	—	—	100	mA	Outputs LOW	V <sub>CC</sub> = MAX
		F828	—	—	85	mA		
I <sub>CCZ</sub>	Power Supply Current OFF	F827	—	—	90	mA	Outputs OFF	V <sub>CC</sub> = MAX
		F828	—	—	70	mA		

**NOTES:**

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at a time, nor for more than 1 second.

## AC CHARACTERISTICS

Symbol	Parameter	54/74F		54F		74F		Unit		
		T <sub>A</sub> = +25°C V <sub>CC</sub> = +5.0 V C <sub>L</sub> = 50 pF		T <sub>A</sub> = -55°C to +125°C V <sub>CC</sub> = 5.0 V ± 10% C <sub>L</sub> = 50 pF		T <sub>A</sub> = 0°C to 70°C V <sub>CC</sub> = 5.0 V ± 10% C <sub>L</sub> = 50 pF				
		Min	Max	Min	Max	Min	Max			
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay, Data to Output	F827	2.0	8.5	2.0	10	2.0	9.0	ns	
t <sub>PZH</sub> t <sub>PZL</sub>	Output Enable Time		3.5	9.5	3.5	11	3.5	10		ns
t <sub>PHZ</sub> t <sub>PLZ</sub>	Output Disable Time		2.0	8.0	2.0	9.5	2.0	8.5	ns	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay, Data to Output		F828	2.0	9.0	2.0	11	2.0		10
t <sub>PZH</sub> t <sub>PZL</sub>	Output Enable Time			1.0	8.0	1.0	10	1.0	9.0	ns
t <sub>PHZ</sub> t <sub>PLZ</sub>	Output Disable Time			3.5	9.5	3.5	11	3.5	10	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay, Data to Output	4.0		9.0	4.0	10.5	4.0	9.5	ns	
t <sub>PZH</sub> t <sub>PZL</sub>	Output Enable Time	2.0		8.5	2.0	10	2.0	9.0		ns
t <sub>PHZ</sub> t <sub>PLZ</sub>	Output Disable Time	1.5		7.0	1.5	9.0	1.5	8.0	ns	