

SN54F244, SN74F244 OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

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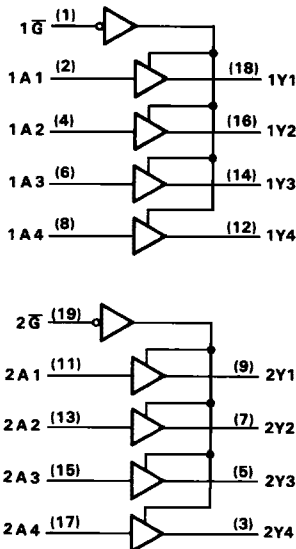
- 3-State Outputs Drive Bus Lines or Buffer Memory Address Registers
- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs
- Dependable Texas Instruments Quality and Reliability

description

These octal buffers and line drivers are designed specifically to improve both the performance and density of three-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters. Taken together with the 'F240 and 'F241, these devices provide the choice of selected combinations of inverting and noninverting outputs, symmetrical \bar{G} (active-low output control inputs, and complementary G and \bar{G} inputs.

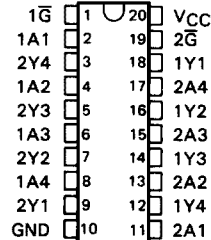
The SN54F244 is characterized for operation over the full military temperature range of -55°C to 125°C . The SN74F244 is characterized for operation from 0°C to 70°C .

logic diagram (positive logic)



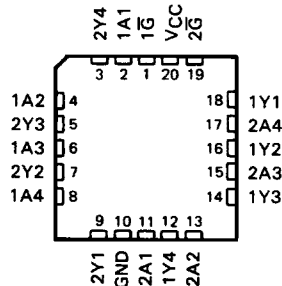
SN54F244 . . . J PACKAGE
SN74F244 . . . DW OR N PACKAGE

(TOP VIEW)



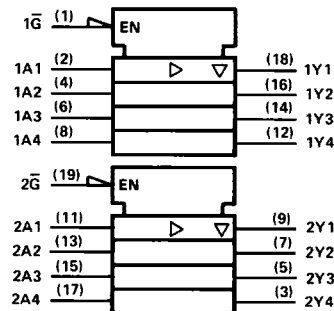
SN54F244 . . . FK PACKAGE

(TOP VIEW)



2

Data Sheets



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

PRODUCTION DATA documents contain information 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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2-139

SN54F244, SN74F244

OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

FUNCTION TABLE

OUTPUT CONTROL	DATA INPUT	OUTPUT
1G, 2G	A	Y
H	X	Z
L	L	L
L	H	H

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

Supply voltage, V_{CC}	-0.5 V to 7 V
Input voltage†	-1.2 V to 7 V
Input current	-30 mA to 5 mA
Voltage applied to any output in the disabled or power-off state	-0.5 V to 5.5 V
Voltage applied to any output in the high state	-0.5 V to V_{CC}
Current into any output in the low state: SN54F244	96 mA
SN74F244	128 mA
Operating free-air temperature range: SN54F244	-55°C to 125°C
SN74F244	0°C to 70°C
Storage temperature range	-65°C to 150°C

†The input voltage ratings may be exceeded provided the input current ratings are observed.

recommended operating conditions

	SN54F244			SN74F244			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC} Supply voltage	4.5	5	5.5	4.5	5	5.5	V
V_{IH} High-level input voltage	2			2			V
V_{IL} Low-level input voltage	0.8			0.8			V
I_{IK} Input clamp current	-18			-18			mA
I_{OH} High-level output current	-12			-15			mA
I_{OL} Low-level output current	48			64			mA
T_A Operating free-air temperature	-55	125		0	70		°C

2

Data Sheets

SN54F244, SN74F244 OCTAL BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

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

PARAMETER	TEST CONDITIONS†	SN54F244		SN74F244		UNIT		
		MIN	TYP‡	MAX	MIN		TYP‡	MAX
V _{IK}	V _{CC} = 4.5 V, I _I = -18 mA			-1.2		V		
V _{OH}	V _{CC} = 4.5 V, I _{OH} = -3 mA	2.4	3.3	2.4	3.3	V		
	V _{CC} = 4.5 V, I _{OH} = -12 mA	2	3.2					
	V _{CC} = 4.5 V, I _{OH} = -15 mA			2	3.1			
	V _{CC} = 4.75 V, I _{OH} = -3 mA			2.7				
V _{OL}	V _{CC} = 4.5 V, I _{OL} = 48 mA	0.38 0.55				V		
	V _{CC} = 4.5 V, I _{OL} = 64 mA			0.42	0.55			
I _I	V _{CC} = 5.5 V, V _I = 7 V			0.1		mA		
I _{OZH}	V _{CC} = 5.5 V, V _O = 2.7 V			50		μA		
I _{OZL}	V _{CC} = 5.5 V, V _O = 0.5 V			-50		μA		
I _{IH}	V _{CC} = 5.5 V, V _I = 2.7 V			20		μA		
I _{IL}	Any \bar{G} input Any A input	V _{CC} = 5.5 V, V _I = 0.5 V			-1		mA	
					-1.6			
I _{OS} §	V _{CC} = 5.5 V, V _O = 0	-100	-225	-100	-225	mA		
I _{CC}	V _{CC} = 5.5 V, Outputs open	Outputs high		40	60	40	60	mA
		Outputs low		60	90	60	90	
		Outputs disabled		60	90	60	90	

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} = 5 V, C _L = 50 pF, R ₁ = 500 Ω, R ₂ = 500 Ω, T _A = 25°C			V _{CC} = 4.5 V to 5.5 V, C _L = 50 pF, R ₁ = 500 Ω, R ₂ = 500 Ω, T _A = MIN to MAX†			UNIT	
			F244			SN54F244		SN74F244		
			MIN	TYP	MAX	MIN	MAX	MIN		MAX
t _{PLH}	A	Y	1.7	3.6	5.2	2	6.5	1.7	6.2	ns
t _{PHL}			1.7	3.6	5.2	2	7	1.7	6.5	
t _{PZH}	1 \bar{G} or 2 \bar{G}	Y	1.2	3.9	5.7	2	7	1.2	6.7	ns
t _{PZL}			1.2	5	7	2	8.5	1.2	8	
t _{PHZ}	1 \bar{G} or 2 \bar{G}	Y	1.2	4.1	6	2	7	1.2	7	ns
t _{PLZ}			1.2	4.1	6	2	7.5	1.2	7	

† For conditions shown as MIN or MAX, use the appropriate value specified under Recommended Operating Conditions

‡ 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.

NOTE 1: Load circuits and waveforms are shown in Section 1.

2

Data Sheets

2

Data Sheets