

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.

- 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

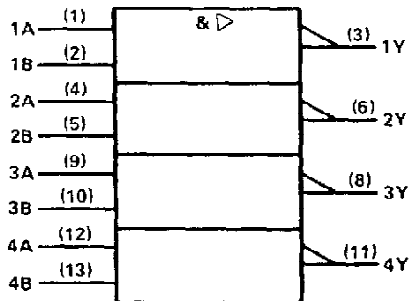
These devices contain four independent 2-input NAND buffer gates. They perform the Boolean functions $Y = A \cdot B$ or $Y = A + \bar{B}$ in positive logic.

The SN54F37 is characterized for operation over the full military temperature range of -55°C to 125°C . The SN74F37 is characterized for operation from 0°C to 70°C .

FUNCTION TABLE (each gate)

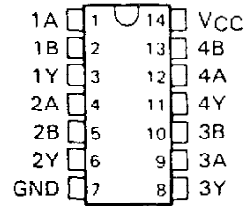
INPUTS		OUTPUT
A	B	Y
H	H	L
L	X	H
X	L	H

logic symbol†

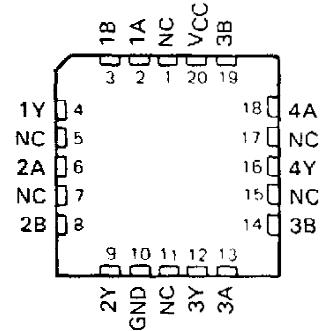


†This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12. Pin numbers shown are for D, J, and N packages.

SN54F37 . . . J PACKAGE
SN74F37 . . . D OR N PACKAGE
(TOP VIEW)

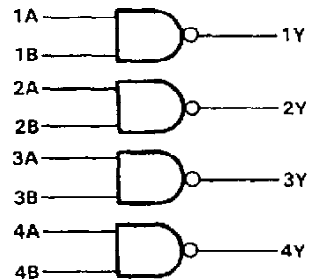


SN54F37 . . . FK PACKAGE
(TOP VIEW)



NC -- No internal connection

logic diagram (positive logic)



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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SN54F37, SN74F37 QUADRUPLE 2-INPUT POSITIVE-NAND BUFFERS

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

Supply voltage, V_{CC}	-0.5 V to 7 V
Input voltage [†]	-0.5 V to 7 V
Input current	-30 mA to 5 mA
Voltage applied to any output in the high state	-0.5 V to V_{CC}
Current into any output in the low state	128 mA
Operating free-air temperature range: SN54F37	-55°C to 125°C
SN74F37	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

	SN54F37			SN74F37			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			-15			-15	mA
I_{OL} Low-level output current			48			64	mA
T_A Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS	SN54F37			SN74F37			UNIT
		MIN	TYP [†]	MAX	MIN	TYP [†]	MAX	
V_{IK}	$V_{CC} = 4.5$ V, $I_I = -18$ mA		-0.73	-1.2			-1.2	V
V_{OH}	$V_{CC} = 4.5$ V, $I_{OH} = -1$ mA	2.5	3.4		2.5	3.4		V
	$V_{CC} = 4.5$ V, $I_{OH} = -15$ mA	2			2			
	$V_{CC} = 4.75$ V, $I_{OH} = -1$ mA				2.7			
V_{OL}	$V_{CC} = 4.5$ V	$I_{OL} = 48$ mA		0.35	0.5			V
		$I_{OL} = 64$ mA				0.40	0.55	
I_I	$V_{CC} = 5.5$ V, $V_I = 7$ V			0.1			0.1	mA
I_{IH}	$V_{CC} = 5.5$ V, $V_I = 2.7$ V			20			20	μA
I_{IL}	$V_{CC} = 5.5$ V, $V_I = 0.5$ V			-0.6			-0.6	mA
I_{OS}^{\ddagger}	$V_{CC} = 5.5$ V, $V_O = 0$	-100		-225	-100		-225	mA
I_{CCH}	$V_{CC} = 5.5$ V, $V_I = 0$		3	6		3	6	mA
I_{CCL}	$V_{CC} = 5.5$ V, $V_I = 4.5$ V		23	33		23	33	mA

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 5$ V, $C_L = 50$ pF, $R_L = 500$ Ω, $T_A = 25$ °C			$V_{CC} = 4.5$ V to 5.5 V, $C_L = 50$ pF, $R_L = 500$ Ω, $T_A = \text{MIN to MAX}^{\S}$			UNIT	
			'F37			SN54F37		SN74F37		
			MIN	TYP [†]	MAX	MIN	MAX	MIN		MAX
t_{PLH}	A or B	Y	1.5	3.1	5.5	1	7	1.5	6.5	ns
t_{PHL}			1	2.1	4.5	1	6	1	5	

[†] 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.

[§] For conditions shown as MIN or MAX, use the appropriate value specified under Recommended Operating Conditions.

NOTE 1: Load circuits and waveforms are shown in Section 1 of the *F Logic Data Book, 1989*.



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