

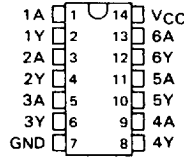
SN74ALS1034, SN74AS1034A, SN54ALS1034, SN54AS1034A HEX DRIVERS

D2661, APRIL 1982 -- REVISED MAY 1986

- 'AS1034A Offers High Capacitive-Drive Capability
- Noninverting Drivers
- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs
- Dependable Texas Instruments Quality and Reliability

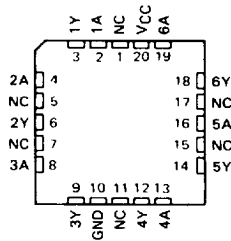
SN54ALS1034, SN54AS1034A . . . J PACKAGE
SN74ALS1034, SN74AS1034A . . . D OR N PACKAGE

(TOP VIEW)



SN54ALS1034, SN54AS1034A . . . FK PACKAGE

(TOP VIEW)



NC—No internal connection

description

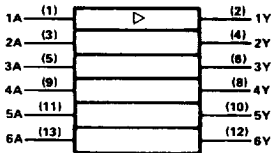
These devices contain six independent noninverting drivers. They perform the Boolean functions $Y = A$.

The SN54ALS1034 and SN54AS1034A are characterized for operation over the full military temperature range of -55°C to 125°C . The SN74ALS1034 and SN74AS1034A are characterized for operation from 0°C to 70°C .

FUNCTION TABLE (each buffer)

INPUT		OUTPUT	
A	Y	A	Y
H		H	
L		L	

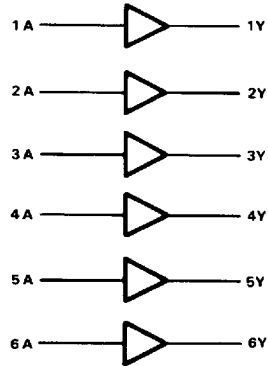
logic symbol†



† 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

logic diagram (positive logic)



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TEXAS INSTRUMENTS

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**SN74ALS1034, SN54ALS1034
HEX DRIVERS**

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

Supply voltage, V_{CC}	7 V
Input voltage	7 V
Operating free-air temperature range: SN54ALS1034	-55 °C to 125 °C
SN74ALS1034	0 °C to 70 °C
Storage temperature range	-65 °C to 150 °C

recommended operating conditions

		SN54ALS1034			SN74ALS1034			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			0.7			0.8	V
I_{OH}	High-level output current			-12			-15	mA
I_{OL}	Low-level output current			12			24	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	SN54ALS1034			SN74ALS1034			UNIT	
		MIN	TYP [†]	MAX	MIN	TYP [†]	MAX		
V_{IK}	$V_{CC} = 4.5 V, I_I = -18 mA$			-1.2			-1.2	V	
V_{OH}	$V_{CC} = 4.5 V$, $I_{OH} = -0.4 mA$	$V_{CC}-2$			$V_{CC}-2$			V	
	$V_{CC} = 4.5 V$ to $5.5 V, I_{OH} = -3 mA$	2.4	3.2		2.4	3.2			
	$V_{CC} = 4.5 V, I_{OH} = -12 mA$	2							
	$V_{CC} = 4.5 V, I_{OH} = -15 mA$				2				
V_{OL}	$V_{CC} = 4.5 V, I_{OL} = 12 mA$		0.25	0.4				V	
	$V_{CC} = 4.5 V, I_{OL} = 24 mA$				0.35	0.5			
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}	$V_{CC} = 5.5 V, V_I = 0.4 V$			-0.1			-0.1	mA	
I_{O}^{\ddagger}	$V_{CC} = 5.5 V, V_O = 2.25 V$	-30		-112	-30		-112	mA	
I_{CCH}	$V_{CC} = 5.5 V, V_I = 4.5 V$			3	6		3	6	mA
I_{CCL}	$V_{CC} = 5.5 V, V_I = 0 V$			8	14		8	14	mA

[†]All typical values are at $V_{CC} = 5 V, T_A = 25 °C$

[‡]The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_{OS}

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5 V$ to $5.5 V,$ $C_L = 50 pF,$ $R_L = 500 \Omega,$ $T_A = MIN$ to MAX				UNIT
			SN54ALS1034		SN74ALS1034		
			MIN	MAX	MIN	MAX	
t_{PLH}	A	Y	1	11	1	8	ns
t_{PHL}			1	13	1	8	

NOTE 1: Load circuit and voltage waveforms are shown in Section 1



SN74AS1034A, SN54AS1034A
HEX DRIVERS

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

Supply voltage, V_{CC}	7 V
Input voltage	7 V
Operating free-air temperature range: SN54AS1034A	-55°C to 125°C
SN74AS1034A	0°C to 70°C
Storage temperature range	-65°C to 150°C

recommended operating conditions

		SN54AS1034A			SN74AS1034A			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			V
I_{OH}	High-level output current				-40			mA
I_{OL}	Low-level output current				40			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	SN54AS1034A			SN74AS1034A			UNIT
		MIN	TYP†	MAX	MIN	TYP†	MAX	
V_{IK}	$V_{CC} = 4.5 V, I_I = -18 mA$	-1.2			-1.2			V
V_{OH}	$V_{CC} = 4.5 V \text{ to } 5.5 V, I_{OH} = -2 mA$	$V_{CC}-2$			$V_{CC}-2$			V
	$V_{CC} = 4.5 V, I_{OH} = -3 mA$	2.4	3.2		2.4	3.2		
	$V_{CC} = 4.5 V, I_{OH} = -40 mA$	2						
	$V_{CC} = 4.5 V, I_{OH} = -48 mA$				2			
V_{OL}	$V_{CC} = 4.5 V, I_{OL} = 40 mA$	0.25			0.5			V
	$V_{CC} = 4.5 V, I_{OL} = 48 mA$				0.35	0.5		
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						μA
I_{IL}	$V_{CC} = 5.5 V, V_I = 0.4 V$	-0.5			-0.5			mA
I_{O}^{\ddagger}	$V_{CC} = 5.5 V, V_O = 2.25 V$	-50	-200		-50	-200		mA
I_{CCH}	$V_{CC} = 5.5 V, V_I = 4.5 V$	9		15	9		15	mA
I_{CCL}	$V_{CC} = 5.5 V, V_I = 0 V$	21		35	21		35	mA

†All typical values are at $V_{CC} = 5 V, T_A = 25^\circ C$

‡The output conditions have been chosen to produce a current that closely approximates one half of the true short circuit output current, I_{OS}

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	$V_{CC} = 4.5 V \text{ to } 5.5 V,$ $C_L = 50 pF,$ $R_L = 500 \Omega,$ $T_A = \text{MIN to MAX}$				UNIT
			SN54AS1034A		SN74AS1034A		
			MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	1	6.5	1	6	ns
t_{PHL}			1	6.5	1	6	

NOTE 1 Load circuit and voltage waveforms are shown in Section 1



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