

SN54AS1036A, SN74AS1036A QUADRUPLE 2-INPUT POSITIVE-NOR DRIVERS

SDAS244 – D2661, DECEMBER 1983 – REVISED MAY 1986

- Quad Versions of 'AS805B
- Offers High-Capacitive Drive Capability
- 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

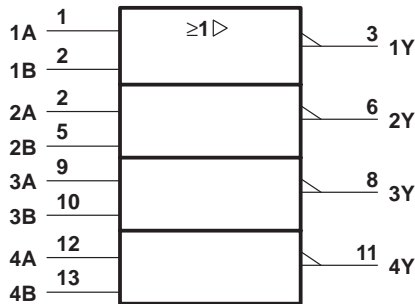
These devices contain four independent 2-input NOR drivers. They perform the Boolean functions $Y = A + B$ or $Y = \overline{A \cdot B}$ in positive logic.

The SN54AS1036A is characterized for operation over the full military temperature range of -55°C to 125°C . The SN74AS1036A is characterized for operation from 0°C to 70°C .

FUNCTION TABLE
(each gate)

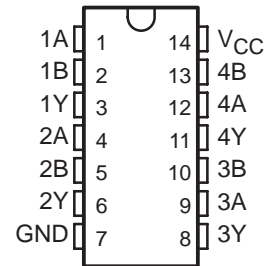
INPUTS		OUTPUT
A	B	Y
H	X	L
X	H	L
L	L	H

logic symbol †

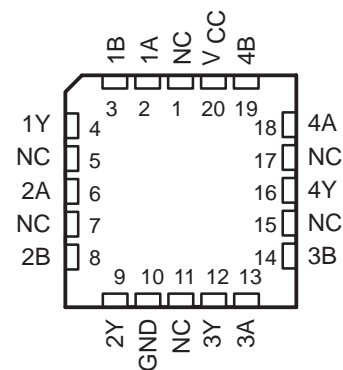


† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.
Pin numbers shown are for D, J, and N packages.

SN54AS1036A . . . J PACKAGE
SN74AS1036A . . . D OR N PACKAGE
(TOP VIEW)

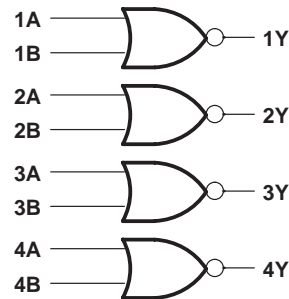


SN54AS1036A . . . FK PACKAGE
(TOP VIEW)



NC – No internal connection

logic diagram (positive logic)



SN54AS1036A, SN74AS1036A QUADRUPLE 2-INPUT POSITIVE-NOR DRIVERS

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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: SN54AS1036A	-55°C to 125°C
SN74AS1036A	0°C to 70°C
Storage temperature range	-65°C to 150°C

recommended operating conditions

		SN54AS1036A			SN74AS1036A			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			-40			-48	mA
I_{OL}	Low-level output current			40			48	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	SN54AS1036A			SN74AS1036A			UNIT
		MIN	TYP†	MAX	MIN	TYP†	MAX	
V_{IK}	$V_{CC} = 4.5\text{ V}$, $I_I = -18\text{ mA}$			-1.2			-1.2	V
V_{OH}	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -2\text{ mA}$	$V_{CC}-2$			$V_{CC}-2$			V
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -3\text{ mA}$	2.4	3.2		2.4	3.2		
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -40\text{ mA}$	2						
	$V_{CC} = 4.5\text{ V}$, $I_{OH} = -48\text{ mA}$				2			
V_{OL}	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 40\text{ mA}$		0.25	0.5				V
	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 48\text{ mA}$					0.35	0.5	
I_I	$V_{CC} = 5.5\text{ V}$, $V_I = 7\text{ V}$			0.1			0.1	mA
I_{IH}	$V_{CC} = 5.5\text{ V}$, $V_I = 2.7\text{ V}$			20			20	μA
I_{IL}	$V_{CC} = 5.5\text{ V}$, $V_I = 0.4\text{ V}$			-0.5			-0.5	mA
$I_{O\ddagger}$	$V_{CC} = 5.5\text{ V}$, $V_O = 2.25\text{ V}$	-50		-200	-50		-200	mA
I_{CCH}	$V_{CC} = 5.5\text{ V}$, $V_I = 0$		4.3	7		4.3	7	mA
I_{CCL}	$V_{CC} = 5.5\text{ V}$, $V_I = 4.5\text{ V}$		14	23		14	23	mA

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

‡ 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)	$V_{CC} = 4.5\text{ V to }5.5\text{ V}$, $C_L = 50\text{ pF}$, $R_L = 500\ \Omega$, $T_A = \text{MIN to MAX}$				UNIT
			SN54AS1036A		SN74AS1036A		
			MIN	MAX	MIN	MAX	
t_{PLH}	A or B	Y	1	4.8	1	4.3	ns
t_{PHL}			1	4.8	1	4.3	

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



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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