5430/7430 8-Input Positive-NAND Gate

	Schottky TTL					High-Speed TTL					Low-Power Schottky TTL					Standard TTL					Low-Power TTL				
	Device Type	Package				Device Type	Package				Device Type	Package				Device Type	Package				Device Type	Package			
		C	P	M	CF		C	P	M	CF		C	P	M	CF		C	P	M	CF		C	P	M	CF
T. I.	SN54S30	J①			W①	SN54H30	J①			W①	SN54LS30	J①			W①	SN5430	J①			W②	SN54L30	J①	N①	T②	
	SN74S30	J①	N①			SN74H30	J①	N①			SN74LS30	J①	N①			SN7430	J①	N①			SN74L30	J①	N①	T②	
FAIRCHILD	FM54S30／FM9S30	D①			F①	FM54H30/FM9H30	D①			F②	FM54LS30／FM9LS30	D①			F①	FM5430/FM9N30	D①			F②					
	FC74S30／FC9S30	D①	P①		F①	FC74H30/FC9H30	D①	P①			FC74LS30／FC9LS30	D①	P①		F①	FC7430/FC9N30	D①	P①							
MOTOROLA						MC3116	L①			F①						MC5430	L①			F②					
						MC3016	L①	P①		F①	SN74LS30		P①			MC7430	L①	P①		F②					
N. S. C.						DM54H30	J①	N①			DM54LS30					DM5430	J①	N①		W②	DM54L30	J①	N①		F②
	DM74S30					DM74H30	J①	N①			DM74LS30					DM7430	J①	N①			DM74L30	J①	N①		F②
PHILIPS						GJH101/74H30		①			N74LS30		①			FJH101/7430		①							
SIGNETICS						S54H30	F①	A①		W②						S5430	F①	A①		W②					
	N74S30		A①			N74H30	F①	A①		W②	N74LS30		A①			N7430	F①	A①							
SIEMENS																FLH131		①							
FUJITSU						MB604	①	M①			74LS30		M①			MB403	①	M①							
HITACHI											HD74LS30		P①			HD7430/HD2508	①	P①							
MITSUBISHI	M5S030		P①								M74LS30		P①			M53230/M5310		P①							
NEC											74LS30		C①			μPB204	D①	C①							
TOSHIBA																TD3430A		P①							

Electrical Characteristics SN54LS30/SN74LS30

absolute maximum ratings over operating free-air temperature range

Supply voltage, V_{CC}	7V	Operating free-air temperature range	SN54LS	−55°C to 125°C
Input voltage	7V		SN74LS	0°C to 70°C
Interemitter voltage	5.5V	Storage temperature range		−65°C to 150°C

recommended operating conditions

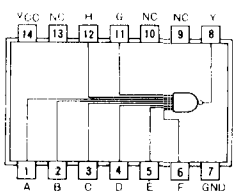
	SN54LS30			SN74LS30			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V_{CC}	4.5	5	5.5	4.75	5	5.25	V
High-level output current, I_{OH}			−400			−400	μA
Low-level output current, I_{OL}			4			8	mA
Operating free-air temperature, T_A	−55		125	0		70	°C

electrical characteristics over recommended operating free-air temperature range

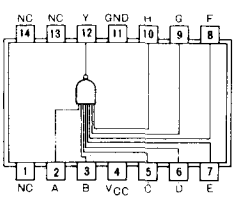
PARAMETER		TEST CONDITIONS†		MIN	TYP‡	MAX	UNIT
V_{IH}	High-level input voltage			2			V
V_{IL}	Low-level input voltage					0.8	V
V_I	Input clamp voltage	V_{CC} = MIN, I_I = −18mA				−1.5	V
V_{OH}	High-level output voltage	V_{CC} = MIN, V_{IL} = V_{IL} max, I_{OH} = MAX		2.7	3.4		V
V_{OL}	Low-level output voltage	V_{CC} = MIN, V_{IH} = 2V, I_{OL} = 4mA				0.4	V
I_I	Input current at maximum input voltage	V_{CC} = MAX, V_I = 7V				0.1	mA
I_{IH}	High-level input current	V_{CC} = MAX, V_{IH} = 2.7V				20	μA
I_{IL}	Low-level input current	V_{CC} = MAX, V_{IL} = 0.4V				−0.4	mA
I_{OS}	Short-circuit output current◆	V_{CC} = MAX,	54LS Family	−20		−100	mA
			74LS Family	−20		−100	
I_{CCH}	Supply current	V_{CC} = MAX	Total, outputs high		0.35	0.5	mA
I_{CCL}	Supply current		Total, outputs low		0.6	1.1	mA
I_{CC}	Supply current	V_{CC} = 5V	Average per gate (50% duty cycle)		0.48		mA
t_{PLH}	Propagation delay time, low-to-high-level output	V_{CC} = 5V, T_A = 25°C,			8	15	ns
t_{PHL}	Propagation delay time, high-to-low-level output	C_L = 15pF, R_L = 2kΩ			13	20	ns

Pin Assignments (Top View)

①

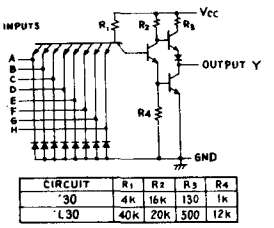


②



positive logic:
Y = ABCDEFGH
NC No internal connection

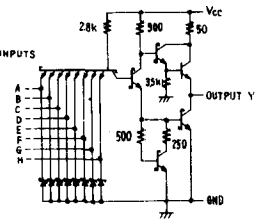
Schematics (each gate)



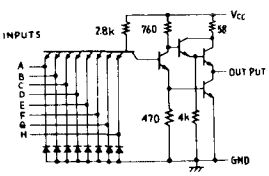
CIRCUIT	R1	R2	R3	R4
'30	4k	16k	130	1k
'L30	40k	20k	500	12k

Input clamp diodes not on SN54L'/SN74L' circuits.

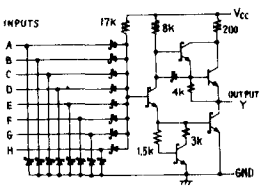
'30 'L30 CIRCUITS



'S30 CIRCUIT



'H30 CIRCUIT



'LS30 CIRCUIT

Resister values shown are nominal and in ohms.

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at V_{CC} = 5V, T_A = 25°C.
◆ Not more than one output should be shorted at a time, and for SN54H'/SN74H' and SN54S/SN74S', duration of short-circuit should not exceed 1 second.