5403/7403 Quadruple 2-Input Positive-NAND Gate with Open-Collector Output

	Schottky TTL					High-Speed TTL					Low-Power Schottky TTL					Standard TTL					Low-Power TTL				
	Device Type	Package C	P	M	CF	Device Type	Package C	P	M	CF	Device Type	Package C	P	M	CF	Device Type	Package C	P	M	CF	Device Type	Package C	P	M	CF
T. I.	SN54S03	J①			W①						SN54LS03	J①			W①	SN5403	J①				SN54L03	J①N①			
	SN74S03	J①N①									SN74LS03	J①N①				SN7403	J①N①				SN74L03	J①N①			
FAIRCHILD	FM54S03	D①			F①						FM54LS03/FM9LS03	D①			F①	FM5403/FM9N03	D①			F①					
	FC74S03/FC9S03	D①	P①								FC74LS03/FC9LS03	D①	P①		F①	FC7403/FC9N03	D①	P①							
MOTOROLA																MC5403	L①								
											SN74LS03		P①			MC7403	L①	P①							
N. S. C.											DM54LS03					DM5403	J①N①				DM54L03	J①N①			
	DM74S03		N①								DM74LS03					DM7403	J①N①				DM74L03	J①N①			
PHILIPS																									
	N74S03										N74LS03		①			FJH291/7403		①							
SIGNETICS	S54S03	F①	A①		W①											S5403	F①	A①							
	N74S03	F①	A①								N74LS03		A①			N7403	F①	A①							
SIEMENS																									
																FLH291		①							
FUJITSU																									
HITACHI																									
	HD74S03		①P①								HD74LS03		P①			HD7403/HD2528		①P①							
MITSUBISHI																									
	M5S003		P①													M53203		P①							
NEC																									
	N74S03		C①								74LS03		C①												
TOSHIBA																									
																TD3403									

Electrical Characteristics SN54LS03/SN74LS03

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

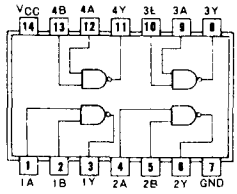
	SN54LS03 MIN	NOM	MAX	SN74LS03 MIN	NOM	MAX	UNIT
Supply voltage, V_{CC}	4.5	5	5.5	4.75	5	5.25	V
High-level output voltage, V_{OH}			5.5			5.5	V
Low-level output current, I_{OL}			4			8	mA
Operating free-air temperature, T_A	−55		125	0		70	°C

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
I_{OH}	High-level output current	V_{CC}=MIN, V_{IL}=V_{IL} max, V_{OH}=5.5V				100	μA
V_{OL}	Low-level output voltage	V_{CC}=MIN, V_{IH}=2V, I_{OL}=4mA			0.25	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_{CCH}	Supply current	V_{CC}=MAX	Total, outputs high		0.8	1.6	mA
I_{CCL}	Supply current		Total, outputs low		2.4	4.4	mA
I_{CC}	Supply current	V_{CC}=5V,	Average per gate (50% duty cycle)		0.4		mA
t_{PLH}	Propagation delay time, low-to-high-level output	V_{CC}=5V, T_A=25°C	C_L=15PF, R_L=2KΩ		17	32	ns
t_{PHL}	Propagation delay time, high-to-low-level output				15	28	ns

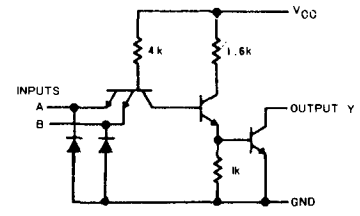
Pin Assignment (Top View)

①

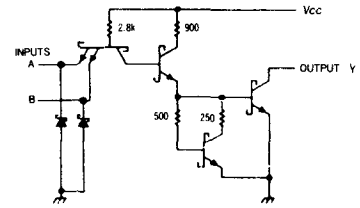


positiv logic :
$Y = \overline{AB}$

Schematics (each gate)



'03 CIRCUIT



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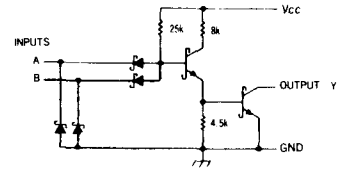

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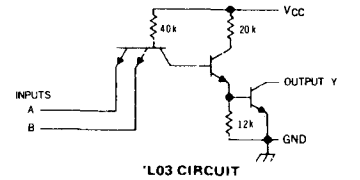

'L03 CIRCUIT

Resistor 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 ■ at V_{CC}=5V, T_A=25°C