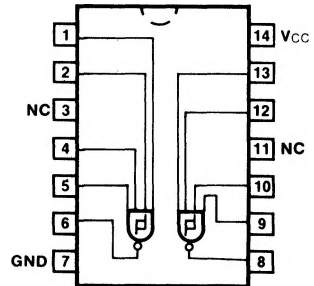


54/7413

54LS/74LS13

DUAL 4-INPUT SCHMITT TRIGGER

CONNECTION DIAGRAM PINOUT A



ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0 \text{ V} \pm 5\%$, $T_A = 0^\circ \text{ C to } +70^\circ \text{ C}$	$V_{CC} = +5.0 \text{ V} \pm 10\%$, $T_A = -55^\circ \text{ C to } +125^\circ \text{ C}$	
Plastic DIP (P)	A	7413PC, 74LS13PC		9A
Ceramic DIP (D)	A	7413DC, 74LS13DC	5413DM, 54LS13DM	6A
Flatpak (F)	A	7413FC, 74LS13FC	5413FM, 54LS13FM	3I

INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PINS	54/74 (U.L.) HIGH/LOW	54/74LS (U.L.) HIGH/LOW
Inputs	1.0/1.0	0.5/0.25
Outputs	20/10	10/5.0 (2.5)

DC AND AC CHARACTERISTICS: See Section 3*

SYMBOL	PARAMETER	54/74		54/74LS		UNITS	CONDITIONS
		Min	Max	Min	Max		
V_{T+}	Positive-going Threshold Voltage	1.5	2.0	1.5	2.0	V	$V_{CC} = +5.0 \text{ V}$
V_{T-}	Negative-going Threshold Voltage	0.6	1.1	0.6	1.1	V	$V_{CC} = +5.0 \text{ V}$
$V_{T+} - V_{T-}$	Hysteresis Voltage	0.4		0.4		V	$V_{CC} = +5.0 \text{ V}$
I_{T+}	Input Current at Positive-going Threshold	-0.65**		-0.14**		mA	$V_{CC} = +5.0 \text{ V}$, $V_{IN} = V_{T+}$
I_{T-}	Input Current at Negative-going Threshold	-0.85**		-0.18**		mA	$V_{CC} = +5.0 \text{ V}$, $V_{IN} = V_{T-}$
I_{OS}	Output Short Circuit Current	-18	-55	-20	-100	mA	$V_{CC} = \text{Max}$
I_{CCH}	Power Supply Current	23		6.0		mA	$V_{IN} = \text{Gnd}$
I_{CCL}		32		7.0			$V_{IN} = \text{Open}$
t_{PLH}	Propagation Delay	27		22		ns	Fig. 3-1, 3-15
t_{PHL}		22		27			

*DC limits apply over operating temperature range; AC limits apply at $T_A = +25^\circ \text{ C}$ and $V_{CC} = +5.0 \text{ V}$. **Typical Value