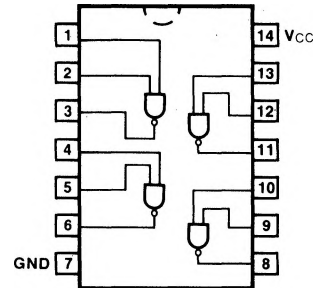


**54/7438**  
**54LS/74LS38**  
 QUAD 2-INPUT NAND BUFFER  
 (With Open-Collector Output)

**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	7438PC, 74LS38PC		9A
Ceramic DIP (D)	A	7438DC, 74LS38DC	5438DM, 54LS38DM	6A
Flatpak (F)	A	7438FC, 74LS38FC	5438FM, 54LS38FM	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	OC**/30	OC**/15 (7.5)

**DC AND AC CHARACTERISTICS:** See Section 3\*

SYMBOL	PARAMETER	54/74		54/74LS		UNITS	CONDITIONS	
		Min	Max	Min	Max			
$V_{OL}$	Output LOW Voltage	0.4				V	$V_{IN} = 2.0 \text{ V}$ , $V_{CC} = \text{Min}$ , $I_{OL} = 48 \text{ mA}$	
$I_{OH}$	Output HIGH Current			250		$\mu\text{A}$	$V_{OH} = 5.5 \text{ V}$ , $V_{CC} = \text{Min}$ , $V_{IN} = V_{IL}$	
$I_{CCH}$	Power Supply Current	8.5		2.0		mA	$V_{IN} = \text{Gnd}$	$V_{CC} = \text{Max}$
$I_{CCL}$		54		12			$V_{IN} = \text{Open}$	
$t_{PLH}$ $t_{PHL}$	Propagation Delay	22 18		22 22		ns	Figs. 3-2, 3-4	

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

\*\*OC - Open Collector