

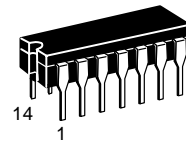
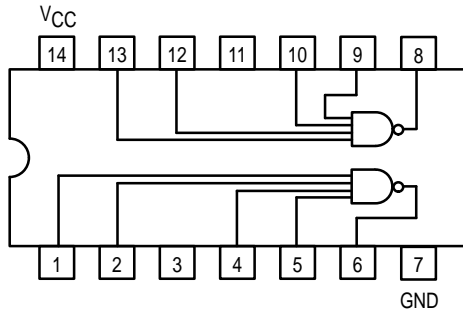


MOTOROLA

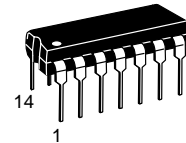
DUAL 4-INPUT NAND BUFFER

SN54/74LS40

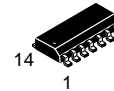
DUAL 4-INPUT NAND BUFFER
LOW POWER SCHOTTKY



J SUFFIX
CERAMIC
CASE 632-08



N SUFFIX
PLASTIC
CASE 646-06



D SUFFIX
SOIC
CASE 751A-02

ORDERING INFORMATION

SN54LSXXJ	Ceramic
SN74LSXXN	Plastic
SN74LSXXD	SOIC

GUARANTEED OPERATING RANGES

Symbol	Parameter		Min	Typ	Max	Unit
V _{CC}	Supply Voltage	54	4.5	5.0	5.5	V
		74	4.75	5.0	5.25	
T _A	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
I _{OH}	Output Current — High	54, 74			-1.2	mA
I _{OL}	Output Current — Low	54			12	mA
		74			24	

SN54/74LS40

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions	
		Min	Typ	Max			
V_{IH}	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V_{IL}	Input LOW Voltage	54		0.7	V	Guaranteed Input LOW Voltage for All Inputs	
		74		0.8			
V_{IK}	Input Clamp Diode Voltage		-0.65	-1.5	V	$V_{CC} = \text{MIN}$, $I_{IN} = -18 \text{ mA}$	
V_{OH}	Output HIGH Voltage	54	2.5	3.5	V	$V_{CC} = \text{MIN}$, $I_{OH} = \text{MAX}$, $V_{IN} = V_{IH}$ or V_{IL} per Truth Table	
		74	2.7	3.5	V		
V_{OL}	Output LOW Voltage	54, 74		0.25	0.4	V	$I_{OL} = 12 \text{ mA}$ $V_{CC} = V_{CC} \text{ MIN}$, $V_{IN} = V_{IL}$ or V_{IH} per Truth Table
		74		0.35	0.5	V	
I_{IH}	Input HIGH Current			20	μA	$V_{CC} = \text{MAX}$, $V_{IN} = 2.7 \text{ V}$	
				0.1	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 7.0 \text{ V}$	
I_{IL}	Input LOW Current			-0.4	mA	$V_{CC} = \text{MAX}$, $V_{IN} = 0.4 \text{ V}$	
I_{OS}	Short Circuit Current (Note 1)	-30		-130	mA	$V_{CC} = \text{MAX}$	
I_{CC}	Power Supply Current Total, Output HIGH Total, Output LOW			1.0	mA	$V_{CC} = \text{MAX}$	
				6.0			

Note 1: Not more than one output should be shorted at a time, nor for more than 1 second.

AC CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
t_{PLH}	Turn-Off Delay, Input to Output		12	24	ns	$V_{CC} = 5.0 \text{ V}$, $R_L = 667 \Omega$ $C_L = 45 \text{ pF}$
t_{PHL}	Turn-On Delay, Input to Output		12	24	ns	