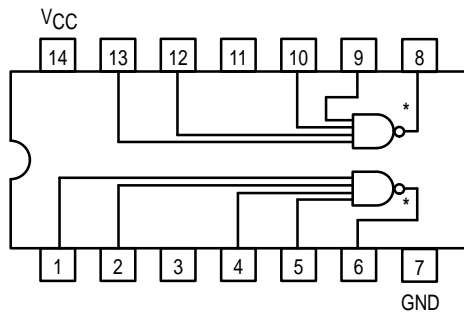




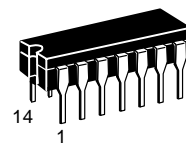
# DUAL 4-INPUT NAND GATE



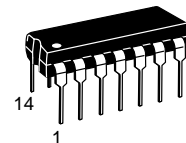
\* OPEN COLLECTOR OUTPUTS

## SN54/74LS22

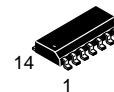
**DUAL 4-INPUT NAND GATE**  
**LOW POWER SCHOTTKY**



**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 <sub>CC</sub>	Supply Voltage	54	4.5	5.0	5.5	V
		74	4.75	5.0	5.25	
T <sub>A</sub>	Operating Ambient Temperature Range	54	-55	25	125	°C
		74	0	25	70	
V <sub>OH</sub>	Output Voltage — High	54, 74			55	V
I <sub>OL</sub>	Output Current — Low	54			4.0	mA
		74			8.0	

# SN54/74LS22

## 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	$V_{CC} = \text{MIN}$ , $I_{IN} = -18 \text{ mA}$	
$I_{OH}$	Output HIGH Current	54, 74			100	$\mu\text{A}$	$V_{CC} = \text{MIN}$ , $V_{OH} = \text{MAX}$	
$V_{OL}$	Output LOW Voltage	54, 74		0.25	0.4	V	$I_{OL} = 4.0 \text{ mA}$	$V_{CC} = V_{CC} \text{ MIN}$ , $V_{IN} = V_{IL} \text{ or } V_{IH}$ per Truth Table
		74		0.35	0.5	V	$I_{OL} = 8.0 \text{ mA}$	
$I_{IH}$	Input HIGH Current				20	$\mu\text{A}$	$V_{CC} = \text{MAX}$ , $V_{IN} = 2.7 \text{ V}$	
					0.1	mA	$V_{CC} = \text{MAX}$ , $V_{IN} = 7.0 \text{ V}$	
$I_{IL}$	Input LOW Current				-0.4	mA	$V_{CC} = \text{MAX}$ , $V_{IN} = 0.4 \text{ V}$	
$I_{CC}$	Power Supply Current Total, Output HIGH Total, Output LOW				0.8	mA	$V_{CC} = \text{MAX}$	
					2.2			

## 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			17	32	ns	$V_{CC} = 5.0 \text{ V}$ $C_L = 15 \text{ pF}$ , $R_L = 2.0 \text{ k}\Omega$	
$t_{PHL}$	Turn-On Delay, Input to Output			15	28	ns		