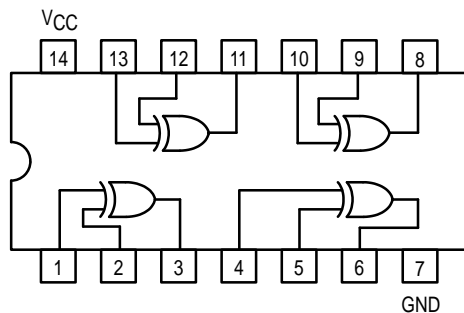




# QUAD 2-INPUT EXCLUSIVE OR GATE

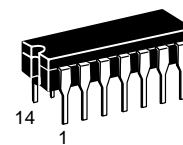


TRUTH TABLE

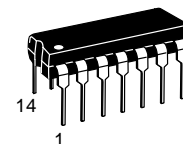
IN		OUT
A	B	Z
L	L	L
L	H	H
H	L	H
H	H	L

SN54/74LS86

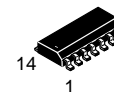
QUAD 2-INPUT  
EXCLUSIVE OR GATE  
LOW POWER SCHOTTKY



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 74	4.5 4.75	5.0 5.0	5.5 5.25	V
T <sub>A</sub>	Operating Ambient Temperature Range	54 74	-55 0	25 25	125 70	°C
I <sub>OH</sub>	Output Current — High	54, 74			-0.4	mA
I <sub>OL</sub>	Output Current — Low	54 74			4.0 8.0	mA

# SN54/74LS86

## 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	$I_{OL} = 4.0 \text{ mA}$ $V_{CC} = V_{CC} \text{ MIN}$ , $V_{IN} = V_{IL}$ or $V_{IH}$ per Truth Table
		74		0.35	0.5	V	$I_{OL} = 8.0 \text{ mA}$
$I_{IH}$	Input HIGH Current				40	$\mu\text{A}$	$V_{CC} = \text{MAX}$ , $V_{IN} = 2.7 \text{ V}$
					0.2	mA	$V_{CC} = \text{MAX}$ , $V_{IN} = 7.0 \text{ V}$
$I_{IL}$	Input LOW Current				-0.8	mA	$V_{CC} = \text{MAX}$ , $V_{IN} = 0.4 \text{ V}$
$I_{OS}$	Short Circuit Current (Note 1)		-20		-100	mA	$V_{CC} = \text{MAX}$
$I_{CC}$	Power Supply Current				10	mA	$V_{CC} = \text{MAX}$

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		
$t_{PLH}$ $t_{PHL}$	Propagation Delay, Other Input LOW			12 10	23 17	ns	$V_{CC} = 5.0 \text{ V}$ $C_L = 15 \text{ pF}$
$t_{PLH}$ $t_{PHL}$	Propagation Delay, Other Input HIGH			20 13	30 22	ns	

