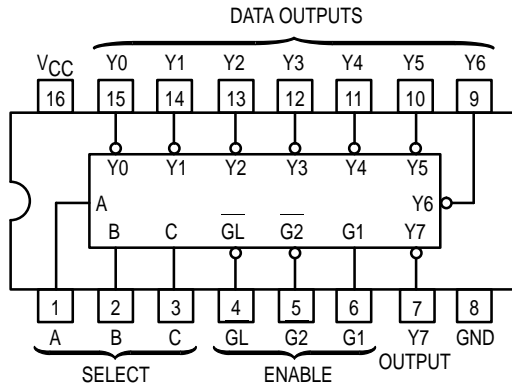




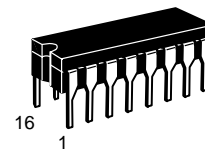
# 3-LINE TO 8-LINE DECODERS/DEMULTIPLEXERS WITH ADDRESS LATCHES



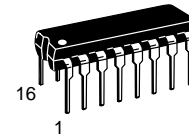
## SN54/74LS137

### 3-LINE TO 8-LINE DECODERS/DEMULTIPLEXERS WITH ADDRESS LATCHES

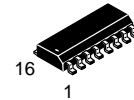
LOW POWER SCHOTTKY



**J SUFFIX**  
CERAMIC  
CASE 620-09



**N SUFFIX**  
PLASTIC  
CASE 648-08



**D SUFFIX**  
SOIC  
CASE 751B-03

#### ORDERING INFORMATION

SN54LSXXXJ Ceramic  
SN74LSXXXN Plastic  
SN74LSXXXD SOIC

#### GUARANTEED OPERATING RANGES

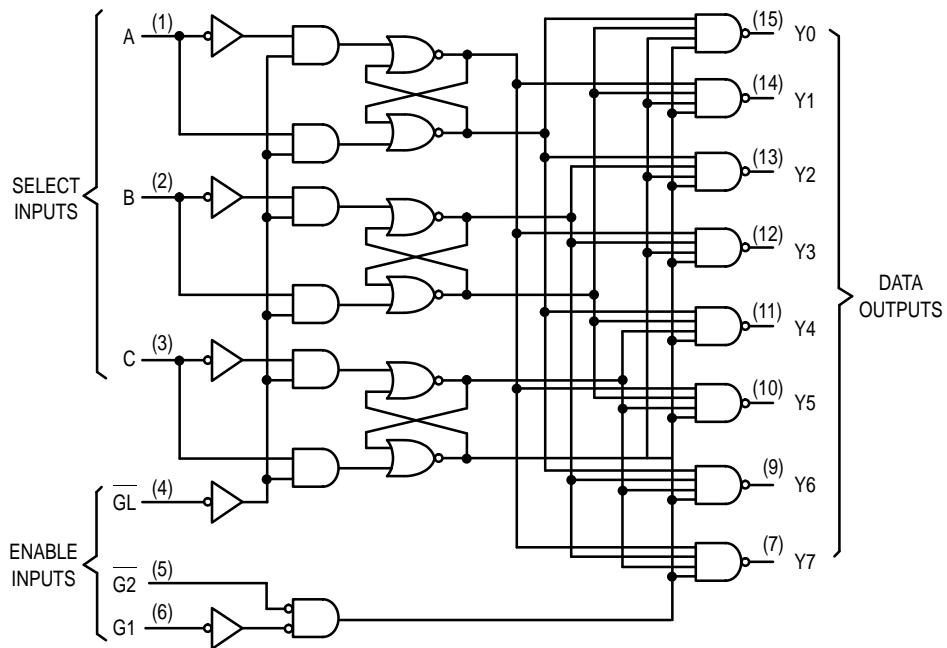
Symbol	Parameter		Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage	54 74	4.5 4.75	5.0 5.0	5.5 5.25	V
T <sub>A</sub>	Operating Ambient Temperature Range	54 74	-55 0	25 25	125 70	°C
I <sub>OH</sub>	Output Current — High	54, 74			-0.4	mA
I <sub>OL</sub>	Output Current — Low	54 74			4.0 8.0	mA

# SN54/74LS137

## FUNCTION TABLE

INPUTS						OUTPUTS							
ENABLE			SELECT										
GL	G1	G2	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
X	X	H	X	X	X	H	H	H	H	H	H	H	H
X	L	X	X	X	X	H	H	H	H	H	H	H	H
L	H	L	L	L	L	L	H	H	H	H	H	H	H
L	H	L	L	L	L	H	L	H	H	H	H	H	H
L	H	L	L	H	L	H	L	H	H	H	H	H	H
L	H	L	L	H	H	H	L	H	H	L	H	H	H
L	H	L	H	L	L	H	H	H	H	H	L	H	H
L	H	L	H	H	L	H	H	H	H	H	H	L	H
L	H	L	H	H	H	H	H	H	H	H	H	H	L
H	H	L	X	X	X	Output corresponding to stored address, L; all others, H							

H = high level, L = low level, X = irrelevant



# SN54/74LS137

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter	Limits			Unit	Test Conditions	
		Min	Typ	Max			
V <sub>IH</sub>	Input HIGH Voltage	2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V <sub>IL</sub>	Input LOW Voltage	54		0.7	V	Guaranteed Input LOW Voltage for All Inputs	
		74		0.8			
V <sub>IK</sub>	Input Clamp Diode Voltage		-0.65	-1.5	V	V <sub>CC</sub> = MIN, I <sub>IN</sub> = -18 mA	
V <sub>OH</sub>	Output HIGH Voltage	54	2.5	3.5	V	V <sub>CC</sub> = MIN, I <sub>OH</sub> = MAX, V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub> per Truth Table	
		74	2.7	3.5	V		
V <sub>OL</sub>	Output LOW Voltage	54, 74		0.25	0.4	V	I <sub>OL</sub> = 4.0 mA V <sub>CC</sub> = V <sub>CC</sub> MIN, V <sub>IN</sub> = V <sub>IL</sub> or V <sub>IH</sub> per Truth Table
		74		0.35	0.5	V	
I <sub>IH</sub>	Input HIGH Current			20	μA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 2.7 V	
				0.1	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 7.0 V	
I <sub>IL</sub>	Input LOW Current			-0.4	mA	V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.4 V	
I <sub>OS</sub>	Short Circuit Current (Note 1)	-20		-100	mA	V <sub>CC</sub> = MAX	
I <sub>CC</sub>	Power Supply Current			18	mA	V <sub>CC</sub> = MAX	

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

## AC CHARACTERISTICS (V<sub>CC</sub> = 5.0 V, T<sub>A</sub> = 25°C)

Symbol	Parameter	Levels of Delay	Limits			Unit	Test Conditions
			Min	Typ	Max		
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Time, A, B, C to Y	2 4		11 25	17 38	ns	V <sub>CC</sub> = 5.0 V C <sub>L</sub> = 15 pF
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Time, A, B, C to Y	3 3		16 19	24 29	ns	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Time, Enable G2 to Y	2 2		13 16	21 27	ns	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Time, Enable G1 to Y	3 3		14 18	21 27	ns	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Time, Enable GL to Y	3 4		18 25	27 38	ns	

## AC SETUP REQUIREMENTS (T<sub>A</sub> = 25°C, V<sub>CC</sub> = 5.0 V)

Symbol	Parameter	Limits			Unit	Test Conditions
		Min	Typ	Max		
t <sub>W</sub>	Pulse Width — Enable at GL	15			ns	V <sub>CC</sub> = 5.0 V
t <sub>s</sub>	Setup Time, A, B, C	10			ns	
t <sub>h</sub>	Hold Time, A, B, C	10			ns	