

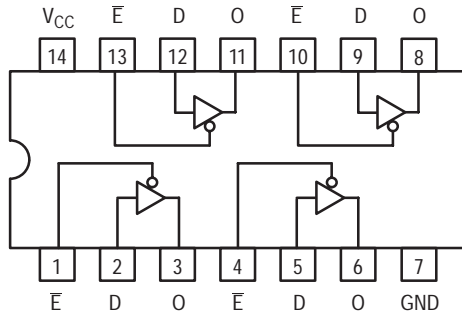
# SN74LS125A SN74LS126A

## Quad 3-State Buffers

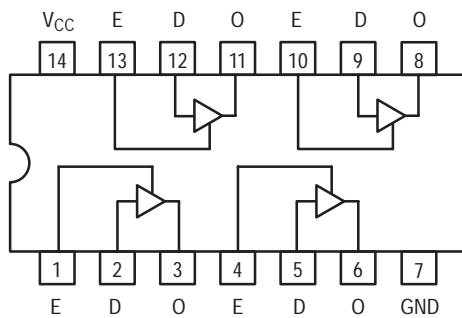


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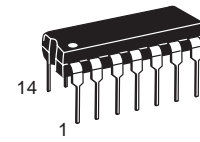
**LOW  
POWER  
SCHOTTKY**



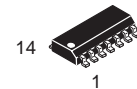
**LS125A**



**LS126A**



**PLASTIC  
N SUFFIX  
CASE 646**



**SOIC  
D SUFFIX  
CASE 751A**

### TRUTH TABLES

**LS125A**

INPUTS		OUTPUT
E	D	
L	L	L
L	H	H
H	X	(Z)

**LS126A**

INPUTS		OUTPUT
E	D	
H	L	L
H	H	H
L	X	(Z)

L = LOW Voltage Level  
H = HIGH Voltage Level  
X = Don't Care  
(Z) = High Impedance (off)

### GUARANTEED OPERATING RANGES

Symbol	Parameter	Min	Typ	Max	Unit
V <sub>CC</sub>	Supply Voltage	4.75	5.0	5.25	V
T <sub>A</sub>	Operating Ambient Temperature Range	0	25	70	°C
I <sub>OH</sub>	Output Current – High			-2.6	mA
I <sub>OL</sub>	Output Current – Low			24	mA

### ORDERING INFORMATION

Device	Package	Shipping
SN74LS125AN	14 Pin DIP	2000 Units/Box
SN74LS125AD	14 Pin	2500/Tape & Reel
SN74LS126AN	14 Pin DIP	2000 Units/Box
SN74LS126AD	14 Pin	2500/Tape & Reel

# SN74LS125A SN74LS126A

## 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			0.8	V	Guaranteed Input LOW Voltage for All Inputs	
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	2.4			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	
V <sub>OL</sub>	Output LOW Voltage		0.25	0.4	V	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	
			0.35	0.5	V		I <sub>OL</sub> = 24 mA
I <sub>OZH</sub>	Output Off Current HIGH			20	μA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 2.4 V	
I <sub>OZL</sub>	Output Off Current LOW			-20	μA	V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0.4 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)	-40		-225	mA	V <sub>CC</sub> = MAX	
I <sub>CC</sub>	Power Supply Current	LS125A		20	mA	V <sub>CC</sub> = MAX	V <sub>IN</sub> = 0 V, V <sub>E</sub> = 4.5 V
		LS126A		22			V <sub>IN</sub> = 0 V, V <sub>E</sub> = 0 V

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

## AC CHARACTERISTICS (T<sub>A</sub> = 25°C)

Symbol	Parameter		Limits			Unit	Test Conditions
			Min	Typ	Max		
t <sub>PLH</sub>	Propagation Delay, Data to Output	LS125A		9.0	15	ns	Figure 2
t <sub>PLH</sub>		LS126A		9.0	15		
t <sub>PHL</sub>		LS125A		7.0	18		
t <sub>PHL</sub>		LS126A		8.0	18		
t <sub>PZH</sub>	Output Enable Time to HIGH Level	LS125A		12	20	ns	Figures 4, 5
		LS126A		16	25		
t <sub>PZL</sub>	Output Enable Time to LOW Level	LS125A		15	25	ns	Figures 3, 5
		LS126A		21	35		
t <sub>PHZ</sub>	Output Disable Time from HIGH Level	LS125A			20	ns	Figures 4, 5
		LS126A			25		
t <sub>PLZ</sub>	Output Disable Time from LOW Level	LS125A			20	ns	Figures 3, 5
		LS126A			25		

# SN74LS125A SN74LS126A

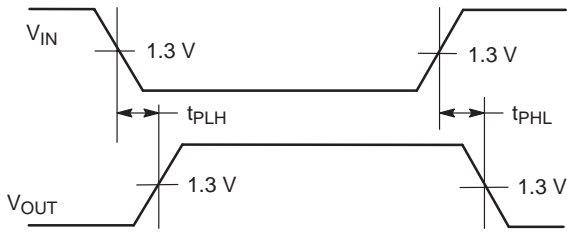


Figure 1.

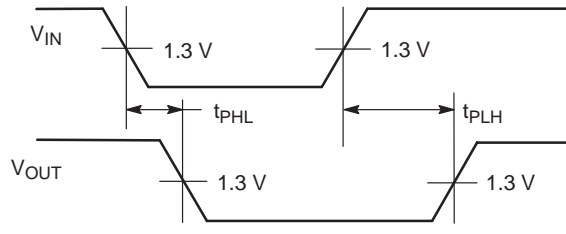


Figure 2.

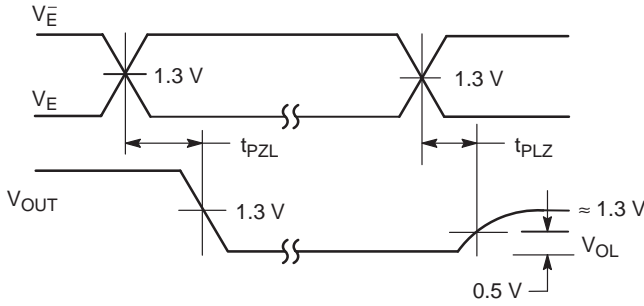


Figure 3.

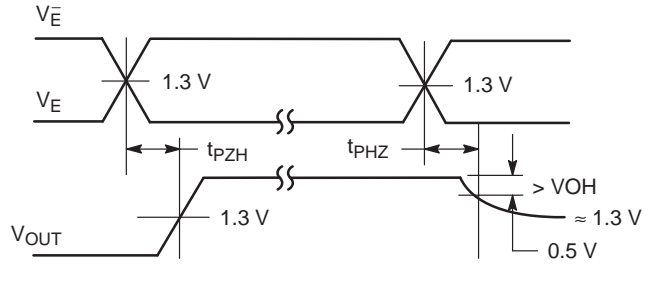


Figure 4.

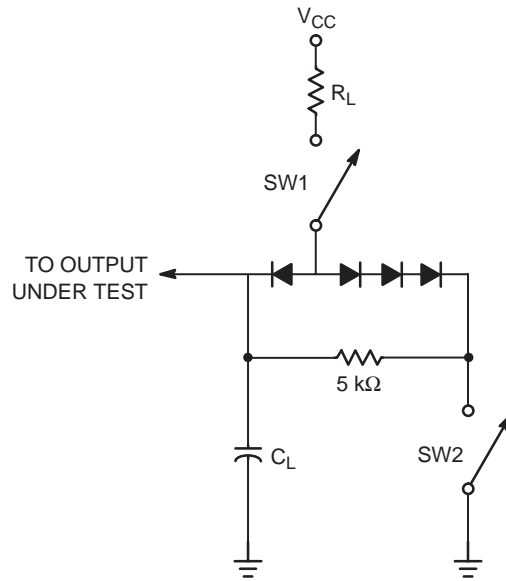


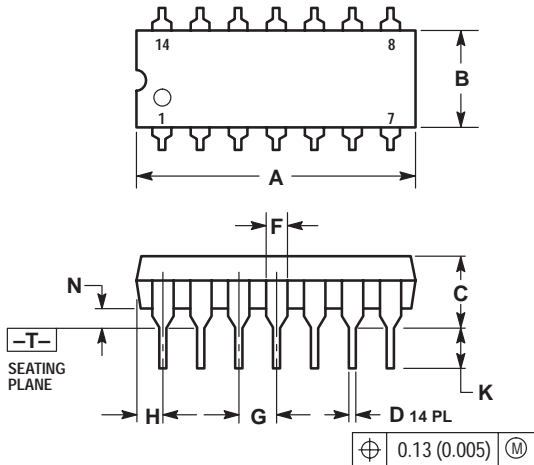
Figure 5.

## SWITCH POSITIONS

SYMBOL	SW1	SW2
$t_{PZH}$	Open	Closed
$t_{PZL}$	Closed	Open
$t_{PLZ}$	Closed	Closed
$t_{PHZ}$	Closed	Closed

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## PACKAGE DIMENSIONS

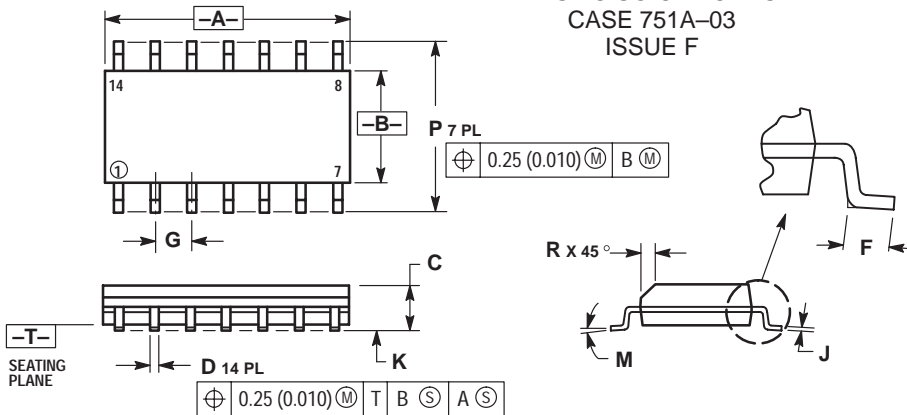


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
5. ROUNDED CORNERS OPTIONAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.715	0.770	18.16	18.80
B	0.240	0.260	6.10	6.60
C	0.145	0.185	3.69	4.69
D	0.015	0.021	0.38	0.53
F	0.040	0.070	1.02	1.78
G	0.100 BSC		2.54 BSC	
H	0.052	0.095	1.32	2.41
J	0.008	0.015	0.20	0.38
K	0.115	0.135	2.92	3.43
L	0.290	0.310	7.37	7.87
M	— 10°		— 10°	
N	0.015	0.039	0.38	1.01

## D SUFFIX PLASTIC SOIC PACKAGE CASE 751A-03 ISSUE F



**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.55	8.75	0.337	0.344
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0° 7°		0° 7°	
P	5.80	6.20	0.228	0.244
R	0.25	0.50	0.010	0.019

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