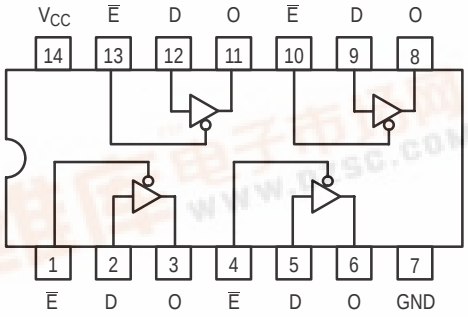
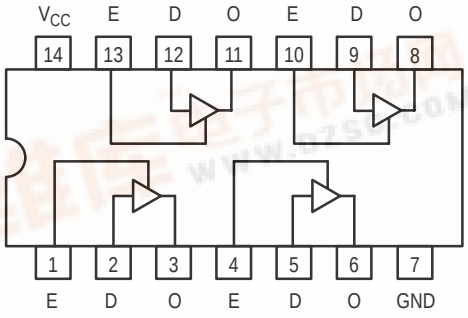
SN74LS125A SN74LS126A

Quad 3-State Buffers



LS125A



LS126A

TRUTH TABLES

LS125A

INPUTS		
$\overline{E}$	D	OUTPUT
L	L	L
L	H	H
H	X	(Z)

LS126A

INPUTS		
E	D	OUTPUT
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_{CC}	Supply Voltage	4.75	5.0	5.25	V
T_A	Operating Ambient Temperature Range	0	25	70	°C
I_{OH}	Output Current – High			–2.6	mA
I_{OL}	Output Current – Low			24	mA

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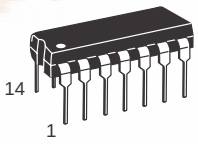
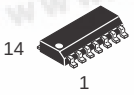
LOW POWER SCHOTTKY



PLASTIC
N SUFFIX
CASE 646



SOIC
D SUFFIX
CASE 751A

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

Publication Order Number:

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

Symbol	Parameter		Limits Min	Limits Typ	Limits Max	Unit	Test Conditions	
V_{IH}	Input HIGH Voltage		2.0			V	Guaranteed Input HIGH Voltage for All Inputs	
V_{IL}	Input LOW Voltage				0.8	V	Guaranteed Input LOW Voltage for All Inputs	
V_{IK}	Input Clamp Diode Voltage			−0.65	−1.5	V	V_{CC} = MIN, I_{IN} = −18 mA	
V_{OH}	Output HIGH Voltage		2.4			V	V_{CC} = MIN, I_{OH} = MAX, V_{IN} = V_{IH} or V_{IL} per Truth Table	
V_{OL}	Output LOW Voltage			0.25	0.4	V	I_{OL} = 12 mA	V_{CC} = V_{CC} MIN, V_{IN} = V_{IL} or V_{IH} per Truth Table
				0.35	0.5	V	I_{OL} = 24 mA	
I_{OZH}	Output Off Current HIGH				20	μA	V_{CC} = MAX, V_{OUT} = 2.4 V	
I_{OZL}	Output Off Current LOW				−20	μA	V_{CC} = MAX, V_{OUT} = 0.4 V	
I_{IH}	Input HIGH Current				20	μA	V_{CC} = MAX, V_{IN} = 2.7 V	
					0.1	mA	V_{CC} = MAX, V_{IN} = 7.0 V	
I_{IL}	Input LOW Current				−0.4	mA	V_{CC} = MAX, V_{IN} = 0.4 V	
I_{OS}	Short Circuit Current (Note 1)		−40		−225	mA	V_{CC} = MAX	
I_{CC}	Power Supply Current	LS125A			20	mA	V_{CC} = MAX	V_{IN} = 0 V, V_E = 4.5 V
		LS126A			22			V_{IN} = 0 V, V_E = 0 V

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

AC CHARACTERISTICS (T_A = 25°C)

Symbol	Parameter		Limits Min	Limits Typ	Limits Max	Unit	Test Conditions	
t_{PLH}	Propagation Delay, Data to Output	LS125A		9.0	15	ns	Figure 2	V_{CC} = 5.0 V, C_L = 45 pF, R_L = 667 Ω
t_{PLH}		LS126A		9.0	15			
t_{PHL}		LS125A		7.0	18			
t_{PHL}		LS126A		8.0	18			
t_{PZH}	Output Enable Time to HIGH Level	LS125A		12	20	ns	Figures 4, 5	
		LS126A		16	25			
t_{PZL}	Output Enable Time to LOW Level	LS125A		15	25	ns	Figures 3, 5	
		LS126A		21	35			
t_{PHZ}	Output Disable Time from HIGH Level	LS125A			20	ns	Figures 4, 5	V_{CC} = 5.0 V, C_L = 5.0 pF, R_L = 667 Ω
		LS126A			25			
t_{PLZ}	Output Disable Time from LOW Level	LS125A			20	ns	FIgures 3, 5	
		LS126A			25			

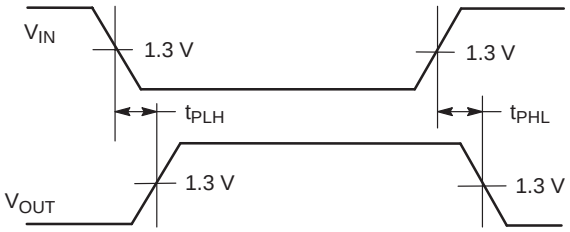


Figure 1.

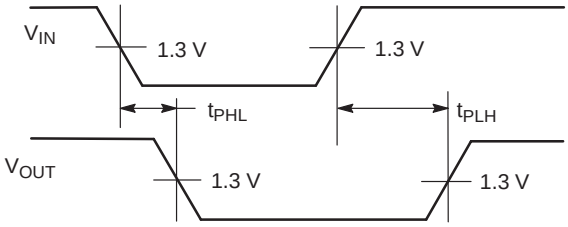


Figure 2.

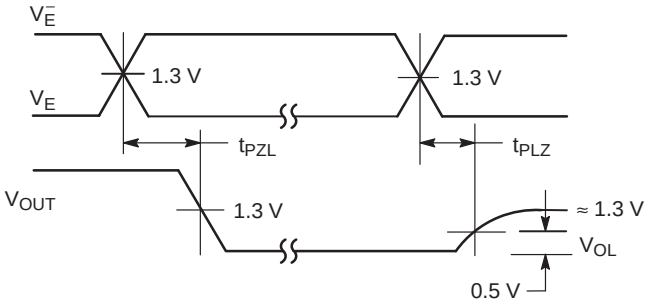


Figure 3.

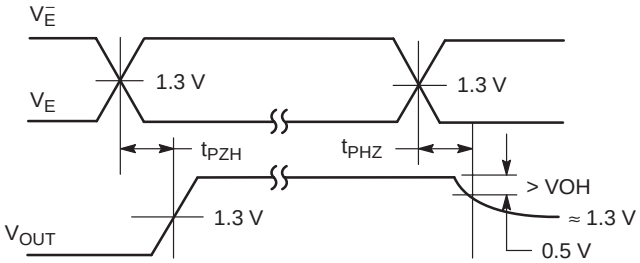


Figure 4.

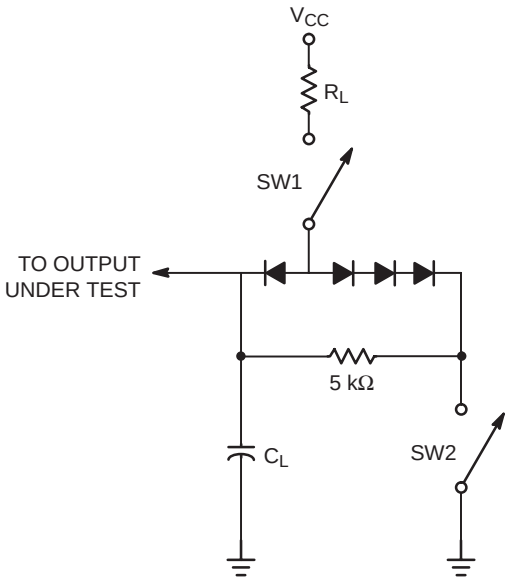


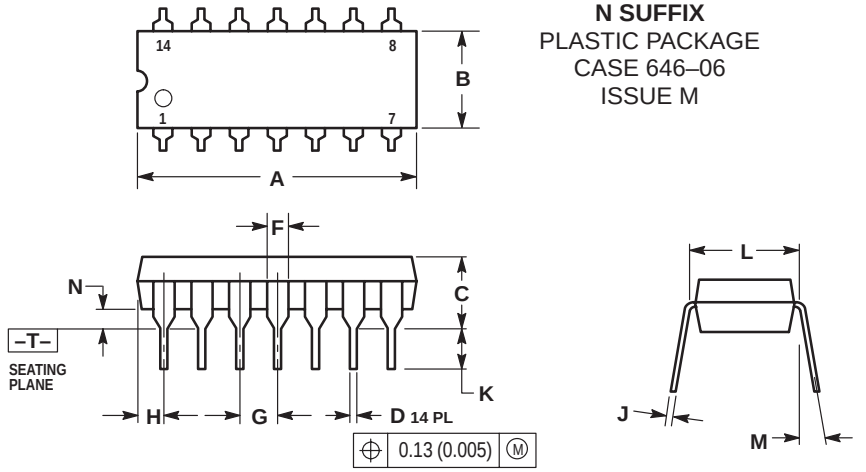
Figure 5.

SWITCH POSITIONS

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

PACKAGE DIMENSIONS

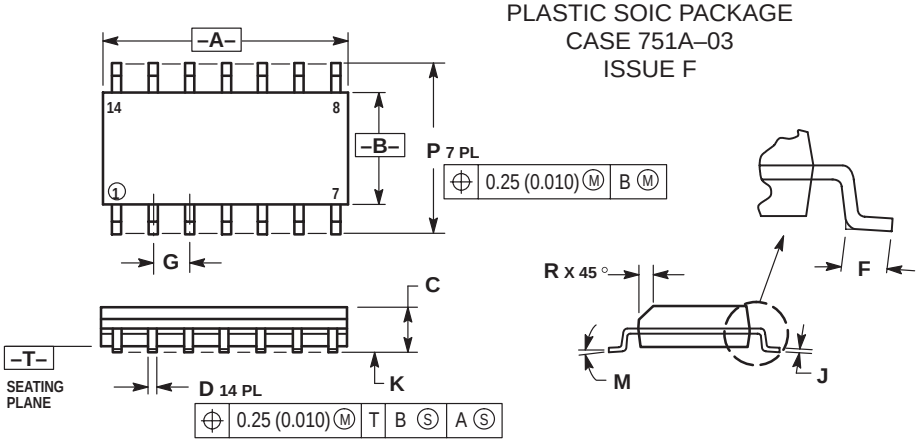
N SUFFIX
PLASTIC PACKAGE
CASE 646–06
ISSUE M



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.

	INCHES		MILLIMETERS	
DIM	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.

	MILLIMETERS		INCHES	
DIM	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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