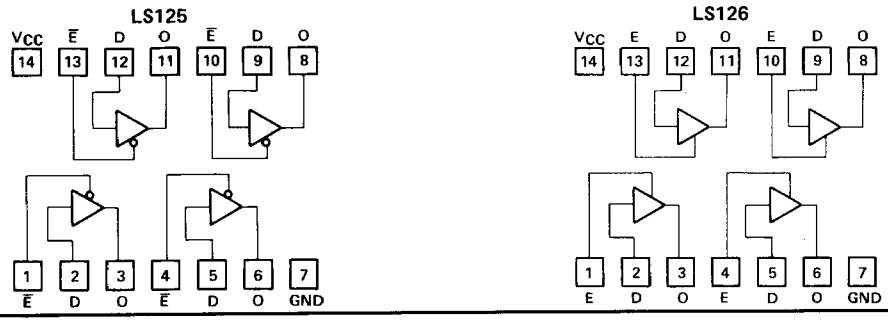
QUAD 3-STATE BUFFERS WITH ACTIVE HIGH ENABLES



Recommended Operating Conditions.

	9LS/54LS			9LS/74LS			Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Supply Voltage	4.5	5.0	5.5	4.75	5.0	5.25	V
High Level Output I_{OH}			−1.0		−1.0	−2.6	mA
Low Level Output I_{OL}			12		12	24	mA
Operating Free Air Temperature	−55		+125	0		70	°C

Electrical Characteristics Over Recommended Operating Free-Air Temperature Range (Unless Otherwise Noted)

Parameter		Test Conditions		9LS/54LS			9LS/74LS			Unit
				Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{IH} Input HIGH Voltage		Guaranteed Input HIGH Voltage for All Inputs		2.0			2.0			V
V_{IL} Input LOW Voltage		Guaranteed Input LOW Voltage for All Inputs				0.7			0.8	V
V_{CD} Input Clamp Diode Voltage		V_{CC} = MIN, I_{IN} = -18mA			-0.65	-1.5			-1.5	V
V_{OH} Output HIGH Voltage		I_{OH} = -1.0mA	V_{CC} = MIN, V_{IN} = V_{IH} or	2.4	3.4					V
		I_{OH} = -2.6mA	V_{IL} per Truth Table					2.4	3.1	V
V_{OL} Output LOW Voltage		I_{OL} = 12mA	V_{CC} = MIN, V_{IN} = V_{IH} or		0.25	0.4		0.25	0.4	V
		I_{OL} = 24mA	V_{IL} per Truth Table					0.35	0.5	V
I_{OZH} Output Off Current HIGH		V_{CC} = MAX, V_{OUT} = 2.4 V, V_E = V_{IL}				20			20	μA
I_{OZL} Output Off Current LOW		V_{CC} = MAX, V_{OUT} = 0.4 V, V_E = V_{IL}				-20			-20	μA
I_{IH} Input HIGH Current		V_{CC} = MAX, V_{IN} = 2.7V				20			20	μA
		V_{CC} = MAX, V_{IN} = 10V				0.1			0.1	mA
I_{IL} Input LOW Current		V_{CC} = MAX, V_{IN} = 0.4V				-0.4			-0.4	mA
I_{OS} Output Short Circuit Current (Note 3)		V_{CC} = MAX' V_{OUT} = 0V		-15		-100	-15		-100	mA
I_{CC} Power Supply Current, Outputs LOW	LS125	V_{CC} = MAX, V_{IN} = 0V, $V_{\overline{E}}$ = 0V				16			16	mA
	LS126	V_{CC} = MAX, V_{IN} = 0V, V_E = 4.5V				20			20	mA
I_{CC} Power Supply Current, Outputs Off	LS125	V_{CC} = MAX, V_{IN} = 0V, V_E = 4.5V				20			20	mA
	LS126	V_{CC} = MAX, V_{IN} = 0V, $V_{\overline{E}}$ = 0V				24			24	mA

NOTES:
1. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.
2. Typical limits are at V_{CC} = 5.0V, T_A = 25°C.
3. Not more than one output should be shorted at a time.

Switching Characteristics V_{CC} = 5.0V Over Recommended Free-Air Temperature Range.

Parameters	From * (Input)	To (Output)	9LS/54LS									Units
			−55°C			+25°C			+125°C			
			Min	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Test Conditions: C_L = 45pF, R_L = 667Ω (See Fig. C, page 2-174)												
t_{PLH}	D	O		10	15		6	10		10	14	ns
t_{PHL}	D	O		13	20		10	16		13	20	ns
t_{PZH}	$\overline{E}$ or E	O		13	20		10	16		13	20	ns
t_{PZL}	$\overline{E}$ or E	O		13	20		10	16		13	20	ns
Test Conditions: C_L = 5pF, R_L = 667Ω (See Fig. C, page 2-174)												
t_{PLZ}	$\overline{E}$ or E	O		13	19		10	15		13	20	ns
t_{PHZ}	$\overline{E}$ or E			13	27		15	23		18	27	ns
Test Conditions: C_L = 45pF, R_L = 667Ω (See Fig. C, page 2-174)												
t_{PLH}	D	O		13	20		10	15		13	19	ns
t_{PHL}	D	O		18	25		15	21		18	25	ns
t_{PZH}	$\overline{E}$ or E	O		18	25		15	21		18	25	ns
t_{PZL}	$\overline{E}$ or E	O		18	25		15	21		18	25	ns

Note: AC specification shown under −55°C and +125°C are for 9LS devices only. All 50pF specifications are for 9LS devices only.

*For LS125 use $\overline{E}$ and for LS126 use E.

TRUTH TABLES

9LS125

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

9LS126

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)