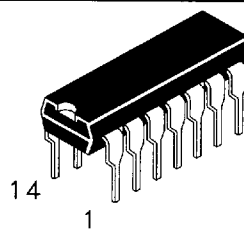


Quad Bus Buffer Gate (3 State)

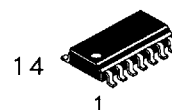
This Quad 3-State Buffer contains four independent gates, each of which performs a non-inverting buffer function. Buffer outputs are maintained in the three-state (high impedance state) during power supply ramp-up or ramp-down. This eliminates bus glitching problems that arise during power-up and power-down.

- AVG's LS operates over extended Vcc from 4.5 to 5.5 V
- AVG's LS and ALS both have guaranteed DC and AC specification over full temperature and Vcc range
- Switching specifications for ALS at 50 pF
- AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series
- Buffers tristated during power up/down

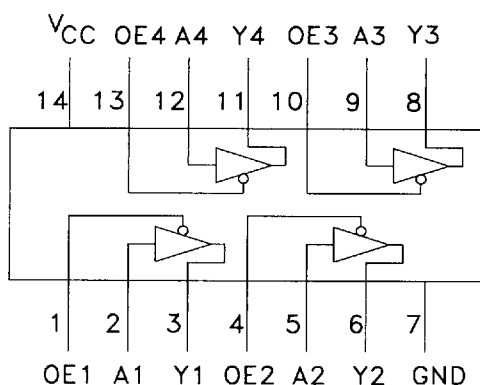
DV74LS125A DV74ALS125



N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case



TRUTH TABLE

Inputs		Outputs
OE	A	Y
L	L	L
L	H	H
H	X	Z

H = High Logic Level
L = Low Logic Level
X = Don't Care
Z = 3-State High Impedance State
(Outputs are disabled)

ABSOLUTE MAXIMUM RATINGS

Maximum ratings are those values beyond which damage to the device may occur.

Symbol	Parameter	LS125A	ALS125	Unit
V _{CC}	Supply Voltage	7.0	7.0	V
V _{IN}	Input Voltage	7.0	7.0	V
T _{STG}	Storage Temperature Range	-65 to +150	-65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS125A		ASL125		Unit
		Min	Max	Min	Max	
V _{CC}	Supply Voltage	4.5	5.5	4.5	5.5	V
V _{IH}	High Level Input Voltage	2.0		2.0		V
V _{IL}	Low Level Input Voltage		0.8		0.8	V
I _{OH}	High Level Output Current		-2.6		-2.6	mA
I _{OL}	Low Level Output Current		24.0		24.0	mA
T _A	Ambient Temperature Range	-10 to +70		-10 to +70		°C

DC ELECTRICAL CHARACTERISTICS over full operating range

Symbol	Parameter	Conditions	LS125A			ASL125			Unit
			Min	Typ	Max	Min	Typ	Max	
V _{IK}	Input Clamp Voltage	V _{CC} = min, I _{IN} = -18 mA			-1.5		-0.65	-1.5	V
V _{OH}	High Level Output Voltage	V _{CC} =min; I _{OH} =max	V _{CC} -2	3.5		V _{CC} -2			V
V _{OL}	Low Level Output Voltage	I _{OL} =12 mA		0.25	0.4		0.25	0.4	V
		I _{OL} =24 mA		0.35	0.5		0.35	0.5	V
I _{IH}	High Level Input Current	V _{CC} =max, V _{IN} = 2.7 V			20			20	μA
		V _{CC} =max, V _{IN} = 7 V			0.1			0.1	mA
I _{IL}	Low Level Input Current	V _{CC} =max, V _{IN} =0.4V			-0.4			-0.1	mA
I _O	Short Circuit Current	V _{CC} =max	-40		-225	-40		-225	mA
I _{OZH}	High Level 3-State Output Current	V _{CC} =5.5V, V _{OUT} =2.4V			20			20	μA
I _{OZL}	Low Level 3-State Output Current	V _{CC} =5.5V, V _{OUT} =0.4V			-20			-20	μA
I _{CC}	Supply Current	V _{CC} =max, V _{IN} =0 V			20			18	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	From	To	LS125A C _L =45 pF R _L = 667Ω		ASL125 C _L =50 pF R ₁ & R ₂ = 500Ω		Unit
				Min	Max	Min	Max	
t _{PLH}	Propagation Delay Time, Low-to-High Level Output	A	Y		15		12	ns
t _{PHL}	Propagation Delay Time High-to-Low Level Output	A	Y		18		15	ns
t _{pZH}	Output Enable Time to High Level	OE	Y		20		15	ns
t _{pZL}	Output Enable Time to Low Level	OE	Y		25		15	ns
t _{PHZ}	Output Disable Time from High Level	OE	Y				10	ns
t _{PLZ}	Output Disable Time From Low Level	OE	Y				15	ns
t _{PHZ}	Output Disable Time from High Level C _L =5pF	OE	Y		20			ns
t _{PLZ}	Output Disable Time From Low Level, C _L =5pF	OE	Y		20			ns

SWITCHING WAVEFORMS

125

