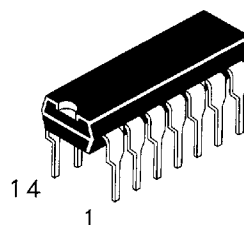


Dual 4-Input NAND Gates with Open Collector Outputs

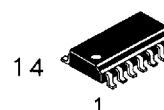
This device contains two independent gates, each of which performs the logic NAND function. The open-collector outputs require external pull-up resistors for proper logical operation.

- 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

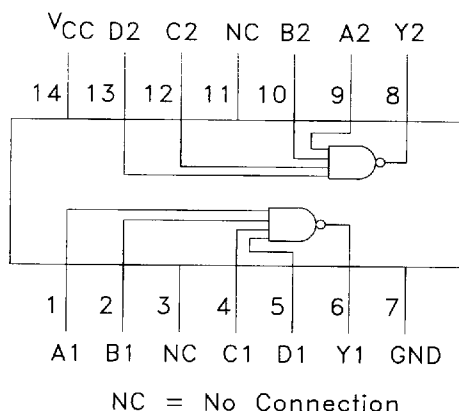
DV74LS22 DV74ALS22B



N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case



TRUTH TABLE

Inputs				Outputs
A	B	C	D	Y
H	H	H	H	L
L	X	X	X	H
X	L	X	X	H
X	X	L	X	H
X	X	X	L	H

H = High Level Logic
L = Low Level Logic
X = Don't Care

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS22	ALS22B	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	LS22		ALS22B		Unit
		Min	Max	Min	Max	
V _{CC}	Supply Voltage	4.5	5.5	4.5	5.5	V
V _{OH}	High Level Output Voltage		5.5		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 _{OL}	Low Level Output Current		8.0		8.0	mA
T _A	Ambient Temperature Range	-10 to +70		-10 to + 70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Conditions	LS22			ALS22B			Units
			Min	Typ	Max	Min	Typ	Max	
V _{IK}	Input Clamp Voltage	V _{CC} = min, I _{IN} = -18 mA			-1.5			-1.5	V
I _{OH}	High Level Output Current	V _{CC} =min; V _{OH} =max			100			100	μA
V _{OL}	Low Level Output Voltage	V _{CC} =min;							
		V _{CC} =min; I _{OL} =4 mA		0.25	0.4		0.25	0.4	V
		V _{CC} =min; I _{OL} =8 mA		0.35	0.5		0.35	0.5	V
I _{IH}	High Level Input Current	V _{CC} =max, V _{IN} = 2.7V			20			20	μA
		V _{CC} =max, V _{IN} = 7V			0.1			0.1	mA
I _{IL}	Low Level Input Current	V _{CC} =max, V _{IN} =0.4V			-0.4			-0.1	mA
I _{CC}	Supply Current Outputs High Outputs Low	V _{CC} =max			0.8		0.22	0.4	mA
					2.2		0.8	1.5	

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	LS22 C _L =15pF R _L =2.0kΩ		ALS22B C _L =50 pF R _L = 2kΩ		Unit
		Min	Max	Min	Max	
t _{PLH}	Turn Off Delay, Input to Output		32	23	45	ns
t _{PHL}	Turn On Delay, Input to Output		28	4	18	ns

SWITCHING WAVEFORMS

