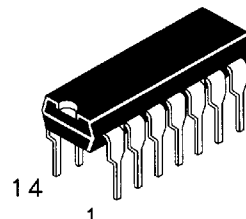


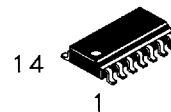
DV74ALS1020A**Dual 4-Input NAND Gates**

This device contains two independent gates, each of which performs the logic NAND function.

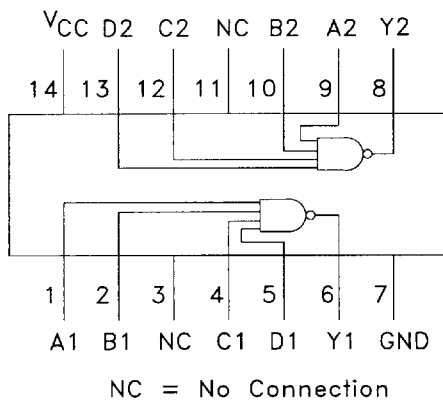
- AVG's ALS has guaranteed DC and AC specification over full temperature and Vcc range
- Switching specifications for ALS at 50 pF
- AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series
- Higher speed and 24mA Output Drive



N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case



TRUTH TABLE
Y=ABCD

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

Symbol	Parameter	ALS1020A	Unit
V _{CC}	Supply Voltage	7.0	V
V _{IN}	Input Voltage	7.0	V
T _{STG}	Storage Temperature Range	-65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	ALS1020A		Unit
		Min	Max	
V _{CC}	Supply Voltage	4.5	5.5	V
V _{IH}	High Level Input Voltage	2.0		V
V _{IL}	Low Level Input Voltage		0.8	V
I _{OH}	High Level Output Current		-2.6	mA
I _{OL}	Low Level Output Current		24	mA
T _A	Ambient Temperature Range	-10 to +70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Conditions	ALS1020A			Unit
			Min	Typ	Max	
V_{IK}	Input Clamp Voltage	$V_{CC} = \min, I_{IN} = -18 \text{ mA}$			-1.5	V
V_{OH}	High Level Output Voltage	$V_{CC} = \min, I_{OH} = -0.4 \text{ mA}$ $I_{OH} = \max$	$V_{CC} - 2$ 2.4	3.2		V
V_{OL}	Low Level Output Voltage	$V_{CC} = \min; I_{OL} = 12 \text{ mA}$		0.25	0.4	V
		$V_{CC} = \min; I_{OL} = 24 \text{ mA}$		0.35	0.5	V
I_{IH}	High Level Input Current	$V_{CC} = \max, V_{IN} = 2.7 \text{ V}$			20	μA
		$V_{CC} = \max, V_{IN} = 7.0 \text{ V}$			0.1	mA
I_{IL}	Low Level Input Current	$V_{CC} = \max, V_{IN} = 0.4 \text{ V}$			-0.1	mA
I_{OS}	Short Circuit Current	$V_{CC} = \max, V_O = 2.25 \text{ V}$	-30		-112	mA
I_{CC}	Supply Current $V_{CC} = \max$	Total, Output HIGH			0.8	mA
		Total, Output LOW			3.9	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	ALS1020A $C_L = 50 \text{ pF}$ $R_L = 500 \Omega$		Unit
		Min	Max	
t_{PLH}	Turn Off Delay, Input to Output	2	8	ns
t_{PHL}	Turn On Delay, Input to Output	2	7	ns

SWITCHING WAVEFORMS