AVG Semiconductors

Technical Data

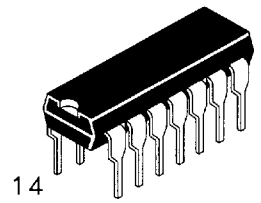
DDi™

DV74ALS1011A

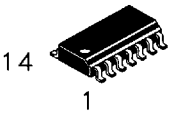
Triple 3-Input AND Buffers

This device contains three independent buffers, each of which performs the logic AND function.

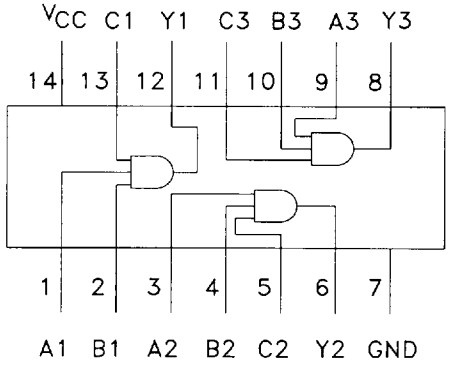
- **AVG's ALS has guaranteed DC and AC specification over full temperature and Vcc range**
- **Switching specifications for ALS at 50 pF**
- **AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series**
- **Higher speed and 24mA Output Drive**



N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case



TRUTH TABLE
Y=ABC

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

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

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	ALS1011A	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	ALS1011A		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		ALS1011A			Unit
				Min	Typ	Max	
V_{IK}	Input Clamp Voltage	V_{CC} = min, I_{IN} = −18 mA				−1.5	V
V_{OH}	High Level Output Voltage	V_{CC}=min	I_{OH}=max	2.4	3.2		V
			I_{OH}=−400µA	2.5			V
V_{OL}	Low Level Output Voltage	V_{CC}=min	I_{OL} =12.0mA		0.25	0.4	V
			I_{OL} =24.0 mA		0.35	0.5	V
I_{IH}	High Level Input Current	V_{CC}=max, V_{IN}=2.7V				20	µA
		V_{CC}=max, V_{IN}= 7.0V				0.1	mA
I_{IL}	Low Level Input Current	V_{CC}=max, V_{IN}=0.4V				−0.1	mA
I_O	Output Drive Current	V_{CC}=max, V_O=2.25V		−30		−112	mA
I_{CC}	Supply Current V_{CC}=max	Total, Output HIGH Total, Output LOW			1.4 4.3	2.3 7	mA mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	C_L= 50 pF R_L= 500Ω		Unit
		Min	Max	
t_{PLH}	Turn Off Delay, Input to Output	2	10	ns
t_{PHL}	Turn On Delay, Input to Output	3	9	ns

SWITCHING WAVEFORMS