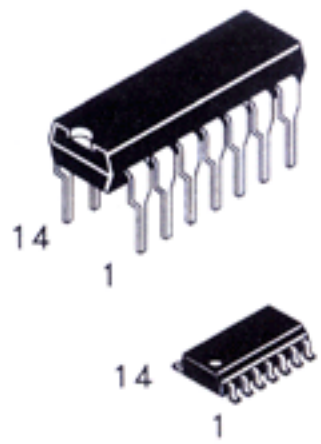
DV74LS05
DV74ALS05A

Hex Inverter with Open Collector Outputs

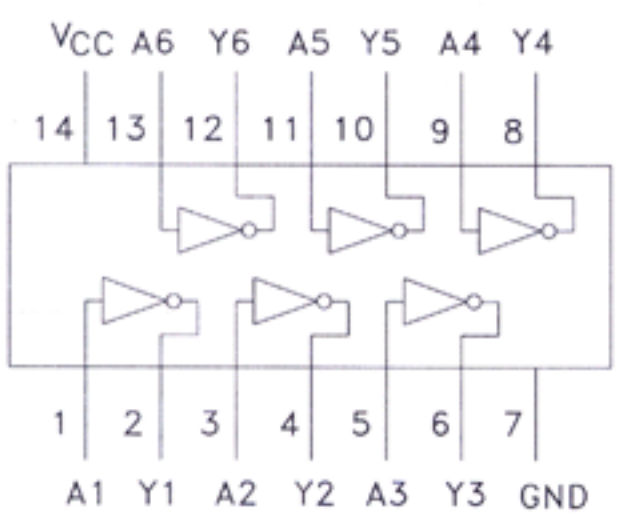


N Suffix
Plastic DIP
AVG-001 Case

D Suffix
Plastic SOP
AVG-002 Case

This device contains six independent gates, each of which performs the logic INVERT function. The open-collector outputs require external pull--up resistors for proper logical operation. They may be connected to other open-collector outputs to implement active-low wired-OR or active-high wired-AND functions.

- **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**



TRUTH TABLE

$Y = \overline{A}$

Inputs	Outputs
A	Y
L	H
H	L

H = High Logic Level
L = Low Logic Level

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS05	ALS05A	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	LS05		ALS05A		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

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Conditions	LS05			ALS05A			Unit
			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 V_{CC}=min; I_{OL} =8 mA		0.25 0.35	0.4 0.5		0.25 0.35	0.4 0.5	V 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			 2.4 6.6		 0.65 2.9	 1.1 4.2	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	From	To	LS05 CL=15 pF RL = 2kΩ		ALS05A CL=50pF RL = 2kW		Unit
				Min	Max	Min	Max	
t_{PLH}	Propagation Delay Time, Low to High Level Output	Input	Output		32	23	54	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output	Input	Output		28	4	14	ns

SWITCHING WAVEFORMS