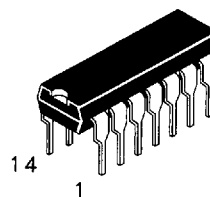


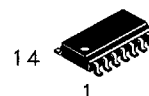
Hex Inverter with Open Collector Outputs

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.

DV74LS05 DV74ALS05A

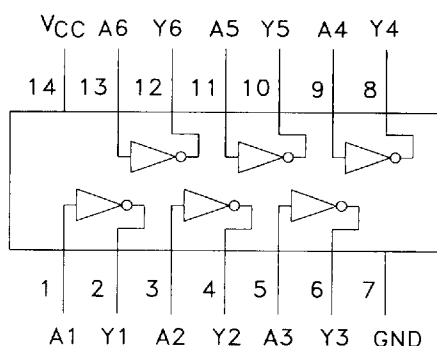


N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case

- AVG's LS operates over extended V_{CC} from 4.5 to 5.5 V
- AVG's LS and ALS both have guaranteed DC and AC specification over full temperature and V_{CC} 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
 $Y = A$

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	$V_{CC} = \min, I_{IN} = -18 \text{ mA}$			-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	$V_{CC} = \min;$ $V_{CC} = \min; I_{OL} = 4 \text{ mA}$		0.25	0.4		0.25	0.4	V
		$V_{CC} = \min; I_{OL} = 8 \text{ mA}$		0.35	0.5		0.35	0.5	V
I_{IH}	High Level Input Current	$V_{CC} = \max, V_{IN} = 2.7 \text{ V}$			20			20	μA
		$V_{CC} = \max, V_{IN} = 7 \text{ V}$			0.1			0.1	mA
I_{IL}	Low Level Input Current	$V_{CC} = \max, V_{IN} = 0.4 \text{ V}$			-0.4			-0.1	mA
I_{CC}	Supply Current Outputs High Outputs Low	$V_{CC} = \max$			2.4		0.65	1.1	mA
					6.6		2.9	4.2	

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	From	To	LS05 $CL = 15 \text{ pF}$ $RL = 2 \text{ k}\Omega$		ALS05A $CL = 50 \text{ pF}$ $RL = 2 \text{ k}\Omega$		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