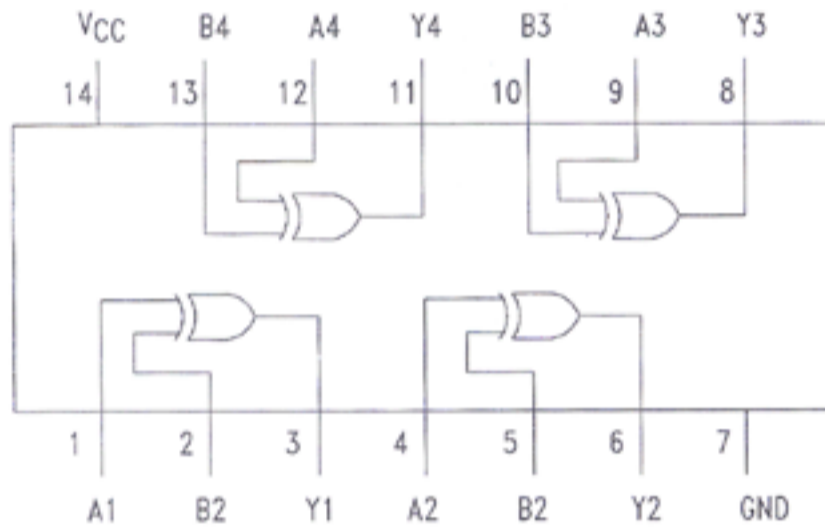
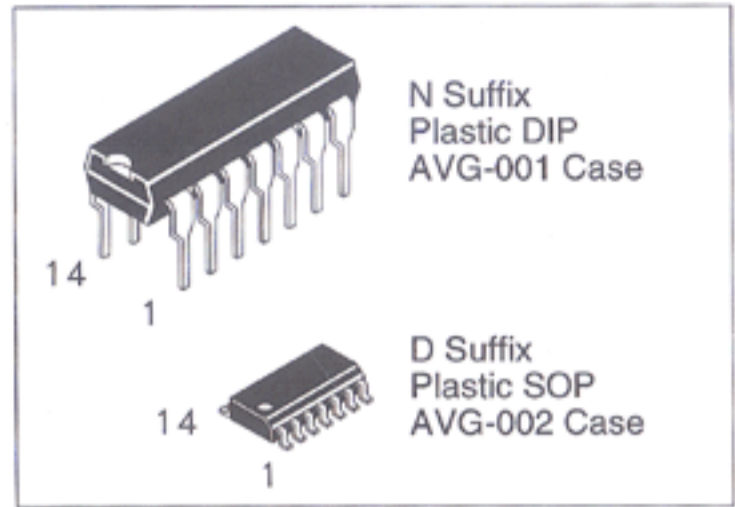


Quad 2-Input Exclusive OR Gates

This device contains four independent gates, each of which performs the logic exclusive-OR function.

- 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

DV74LS86
DV74ALS86



TRUTH TABLE

Inputs		Output
A	B	Y
L	L	L
L	H	H
H	L	H
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	LS86	ALS86	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	LS86		ALS86		Unit
		Min	Max	Min	Max	
V _{CC}	Supply Voltage	4.5	5.5	4.5	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 _{OH}	High Level Output Current		-0.4		-0.4	mA
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	LS86			ALS86			Unit
			Min	Typ	Max	Min	Typ	Max	
V _{IK}	Input Clamp Voltage	V _{CC} = min, I _{IN} = -18 mA			-1.5			-1.5	V
V _{OH}	High Level Output Voltage	V _{CC} =min, I _{OH} = max	V _{CC} -2	3.5		V _{CC} -2			V
V _{OL}	Low Level Output Voltage	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
I _{IH}	High Level Input Current	V _{CC} =max, V _{IN} = 2.7V V _{CC} =max, V _{IN} = 7V			20 0.1			20 0.1	μA mA
I _{IL}	Low Level Input Current	V _{CC} =max, V _{IN} =0.4V			-0.4			-0.1	mA
I _O	Short Circuit Current	V _{CC} =max, V _O =2.25V	-20		-110	-30		-112	mA
I _{CC}	Supply Current	V _{CC} =max			10		3.9	5.9	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	LS86 C _L =15pF		ALS86 C _L =50 pF R _L = 500Ω		Unit
		Min	Max	Min	Max	
t _{PLH}	Propagation Delay, Other Input LOW		23	3	17	ns
t _{PHL}	Propagation Delay, Other Input LOW		17	2	12	ns
t _{PLH}	Propagation Delay, Other Input HIGH		30	3	17	ns
t _{PHL}	Propagation Delay, Other Input HIGH		22	2	10	ns

SWITCHING WAVEFORMS

