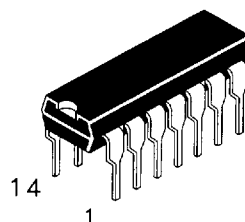


Triple 3-Input NOR Gate

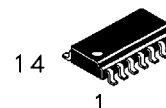
This device contains three independent gates, each of which performs the logic NOR function.

- 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

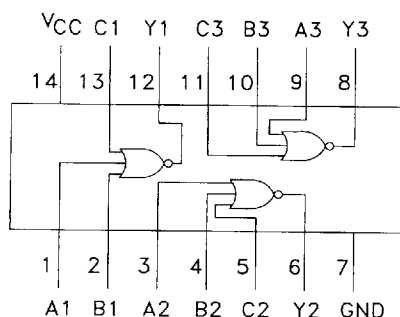
DV74LS27
DV74ALS27



N Suffix
Plastic DIP
AVG-001 Case



D Suffix
Plastic SOP
AVG-002 Case



TRUTH TABLE

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

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

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS27	ALS27	Unit
V_{CC}	Supply Voltage	7.0	7.0	V
V_{IN}	Input Voltage	-0.5 to +7	7.0	V
T_{STG}	Storage Temperature Range	-65 to +150	-65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS27		ALS27		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}	Output HIGH Current		-0.4		-0.4	mA
I_{OL}	Low Level Output Current		8		8	mA
T_A	Ambient Temperature Range	-10 to +70		-10 to +70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Conditions	LS27			ALS27			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
V_{OH}	High Level Output Voltage	$V_{CC} = \min, I_{OH} = \max$	$V_{CC}-2$	3.5		2.5			V
V_{OL}	Low Level Output Voltage ($V_{IN} = V_{IL}$ or V_{IH} per truth table)	$V_{CC} = \min; I_{OL} = 4.0 \text{ mA}$		0.25	0.4		0.25	0.4	V
		$V_{CC} = \min; I_{OL} = 8.0 \text{ mA}$		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
		$V_{CC} = \max, V_{IN} = 7.0 \text{ V}$			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_{OS}	Short Circuit Current	$V_{CC} = \max; V_O = 2.25 \text{ V}$	-20		-110	-30		-112	mA
I_{CC}	Supply Current $V_{CC} = \max$	Total, Output HIGH			4.0		0.97	1.8	mA
		Total, Output LOW			6.8		2	4	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	LS27 $C_L = 15 \text{ pF}$		ALS27 $C_L = 50 \text{ pF}$ $R_L = 500 \Omega$		Unit
		Min	Max	Min	Max	
t_{PLH}	Turn Off Delay, Input to Output		15	4	15	ns
t_{PHL}	Turn On Delay, Input to Output		15	3	9	ns

SWITCHING WAVEFORMS