

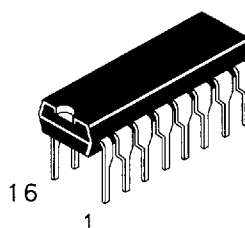
Technical Data

8-Bit Addressable Latch

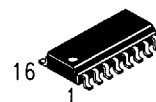
This device is designed for general purpose storage applications in digital systems. It is a multifunctional device capable of storing single line data in eight addressable latches, and also a 1-of-8 decoder and demultiplexer with active HIGH outputs. The device also uses an active LOW common Reset for resetting all latches, as well as, an active LOW Enable.

- **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**

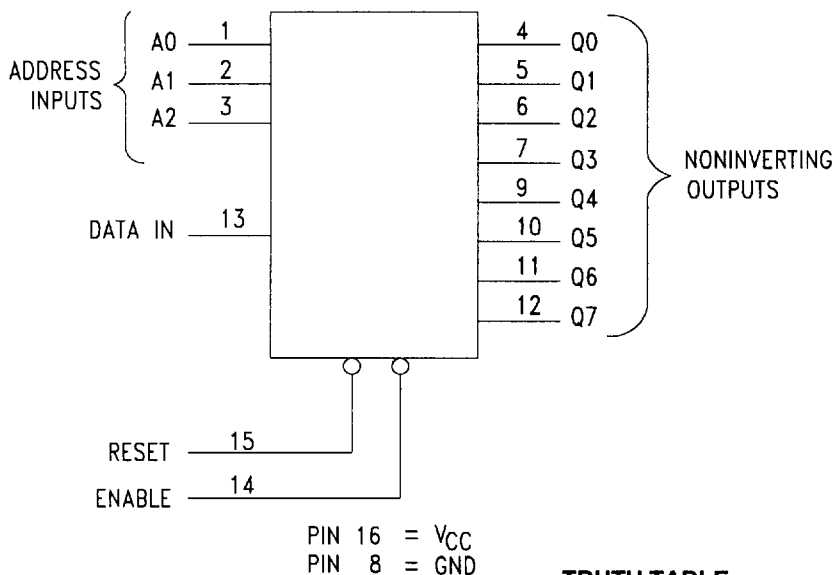
DV74LS259
DV74ALS259



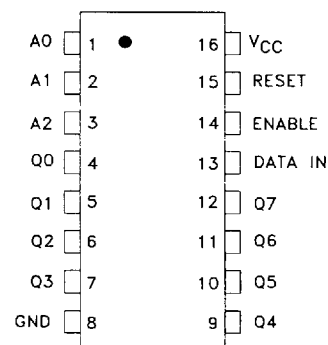
N Suffix
Plastic DIP
AVG-003 Case



D Suffix
Plastic SOP
AVG-004 Case



PIN ASSIGNMENT



Enable	Reset	MODE
L	H	Addressable Latch
H	H	Memory
L	L	Active HIGH Eight-Channel Demultiplexer
H	L	Clear

TRUTH TABLE

RESET	ENABLE	DATA IN	A0	A1	A2	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	MODE
L	H	X	X	X	X	L	L	L	L	L	L	L	L	Clear Demultiplex
L	L	L	L	L	L	L	L	L	L	L	L	L	L	
L	L	H	L	L	L	H	L	L	L	L	L	L	L	
L	L	L	H	L	L	L	L	L	L	L	L	L	L	
L	L	H	H	L	L	L	H	L	L	L	L	L	L	
·	·	·	H	·	·	·	·	·	·	·	·	·	·	
·	·	·	·	·	·	·	·	·	·	·	·	·	·	
·	·	·	·	·	·	·	·	·	·	·	·	·	·	
L	L	H	H	H	H	L	L	L	L	L	L	L	H	
H	H	X	X	X	X	Q_{N-1} →								Memory
H	L	L	L	L	L	L	Q_{N-1}	Q_{N-1}	Q_{N-1}	Q_{N-1}	→			Addressable Latch
H	L	H	H	L	L	H	Q_{N-1}	Q_{N-1}	Q_{N-1}	Q_{N-1}	→			
H	L	H	H	L	L	Q_{N-1}	L	Q_{N-1}	Q_{N-1}	Q_{N-1}	→			
H	L	H	H	L	L	Q_{N-1}	H	Q_{N-1}	Q_{N-1}	Q_{N-1}	→			
·	·	·	·	·	·	·	·	·	·	·	·			
·	·	·	·	·	·	·	·	·	·	·	·			
H	L	L	H	H	H	Q_{N-1}	→				Q_{N-1}	L		
H	L	H	H	H	H	Q_{N-1}	→				Q_{N-1}	H		

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS259	ALS259	Unit
V _{CC}	Supply Voltage	7.0	7.0	V
V _{IN}	Input Voltage	-0.5 to +7.0	7.0	V
T _{STG}	Storage Temperature Range	-65 to +150	-65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS259		ALS259		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 _{OL}	Low Level Output Current		8.0		8.0	mA
I _{OH}	High Level Output Current		-0.4		-0.4	mA
T _A	Ambient Temperature Range	-10 to +70				°C

DC ELECTRICAL CHARACTERISTICS over full operating range

Symbol	Parameter	Conditions	LS259			ALS259			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} = 4.0 mA		0.25	0.4		0.25	0.4	V
		V _{CC} = min; I _{OL} = 8.0 mA		0.35	0.5		0.35	0.5	V
I _{IH}	High Level Input Current	V _{CC} = max, V _{IH} = 2.7V			20			20	μA
	High Level Input Current	V _{CC} = max, V _{IH} = 7.0V			0.1			0.1	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 = 2.25 V	-20		-110	-30		-112	mA
I _{CC}	Supply Current V _{CC} = max	Inputs at 4.5V Other combinations			36		14	22	mA

SWITCHING CHARACTERISTICS over full operating range

Symbol	Parameter	LS259 C _L = 15pF		ALS259 C _L = 50 pF R _L = 500Ω		Unit
		Min	Max	Min	Max	
t _{PLH}	Turn-Off Delay, Enable to Output		35	4	20	ns
t _{PHL}	Turn-On Delay, Enable to Output		24	2	13	
t _{PLH}	Turn-Off Delay, Data to Output		32	4	19	ns
t _{PHL}	Turn-On Delay, Data to Output		21	2	12	
t _{PLH}	Turn-Off Delay, Address to Output		38	4	22	ns
t _{PHL}	Turn-On Delay, Address to Output		29	2	12	
t _{PHL}	Turn-On Delay, Clear to Output		27	2	12	ns

AC SETUP REQUIREMENTS over full operating range

Symbol	Parameter		LS259		ALS259		Unit
			Min	Max	Min	Max	
t_w	Pulse Width	Enable	15		15		ns
		Reset	15		10		ns
t_s	Input Setup Time		20		15		ns
t_h	Hold Time	Data	5.0		0		ns
		Address	20		0		ns

SWITCHING WAVEFORMS

