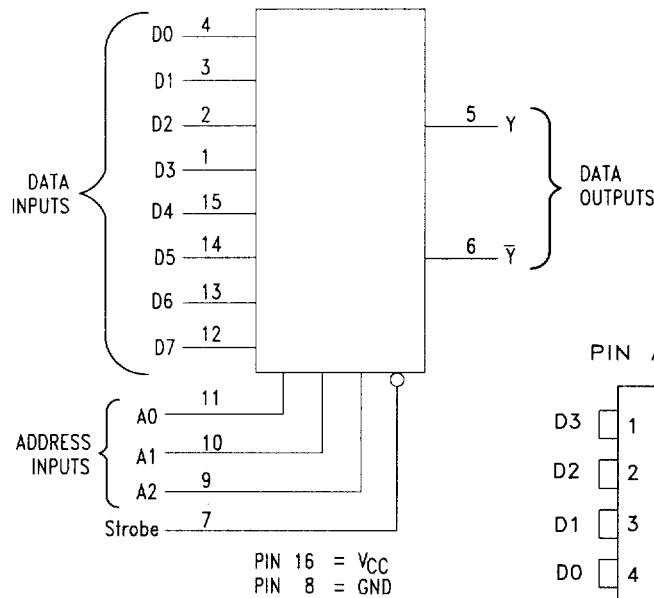
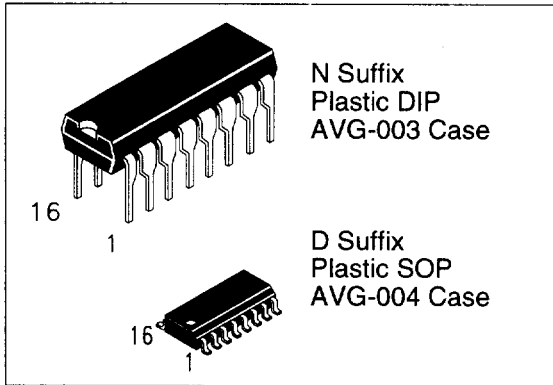


### 8-Input Multiplexer

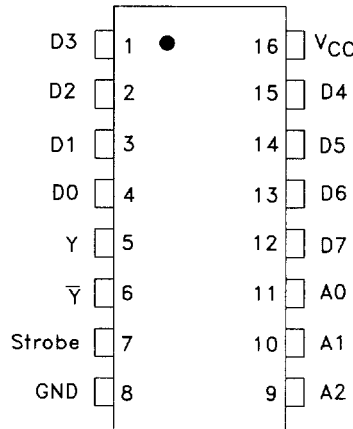
This device is a high speed 8-input Digital Multiplexer which provides the ability to select one bit of data from up to eight sources. This multiplexer can be used as a universal function generator of any logic function of four variables. Both assertion and negation outputs are provided.

- 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

**DV74LS151**  
**DV74ALS151**



PIN ASSIGNMENT



TRUTH TABLE

Inputs				Outputs	
Select			Strobe	Y	$\bar{Y}$
A2	A1	A0			
X	X	X	H	L	H
L	L	L	L	D0	$\bar{D0}$
L	L	H	L	D1	$\bar{D1}$
L	H	L	L	D2	$\bar{D2}$
L	H	H	L	D3	$\bar{D3}$
H	L	L	L	D4	$\bar{D4}$
H	L	H	L	D5	$\bar{D5}$
H	H	L	L	D6	$\bar{D6}$
H	H	H	L	D7	$\bar{D7}$

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	LS151	ALS151	Unit
V <sub>CC</sub>	Supply Voltage	7.0	7.0	V
V <sub>IN</sub>	Input Voltage	-0.5 to +7	7.0	V
T <sub>STG</sub>	Storage Temperature Range	-65 to +150	-65 to +150	°C

### GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS151		ALS151		Unit
		Min	Max	Min	Max	
V <sub>CC</sub>	Supply Voltage	4.5	5.5	4.5	5.5	V
V <sub>IH</sub>	High Level Input Voltage	2.0		2.0		V
V <sub>IL</sub>	Low Level Input Voltage		0.8		0.8	V
I <sub>OH</sub>	High Level Output Current		-0.4		-2.6	mA
I <sub>OL</sub>	Low Level Output Current		8.0		24.0	mA
T <sub>A</sub>	Ambient Temperature Range	-10 to +70		-10 to +70		°C

### DC ELECTRICAL CHARACTERISTICS over full operating range

Symbol	Parameter	Conditions	LS151			ALS151			Unit
			Min	Typ	Max	Min	Typ	Max	
V <sub>IK</sub>	Input Clamp Voltage	V <sub>CC</sub> = min, I <sub>IN</sub> = -18 mA			-1.5			-1.5	V
V <sub>OH</sub>	High Level Output Voltage	V <sub>CC</sub> =min, I <sub>OH</sub> = max	V <sub>CC</sub> -2	3.5		V <sub>CC</sub> -2			V
V <sub>OL</sub>	Low Level Output Voltage (V <sub>IN</sub> =V <sub>IL</sub> or V <sub>IH</sub> per truth table)	V <sub>CC</sub> =min; I <sub>OL</sub> =4.0mA		0.25	0.4		0.25	0.4	V
		V <sub>CC</sub> =min; I <sub>OL</sub> =8.0 mA		0.35	0.5		0.35	0.5	V
I <sub>IH</sub>	High Level Input Current	V <sub>CC</sub> =max, V <sub>IH</sub> =2.7V			20			20	μA
		V <sub>CC</sub> =max, V <sub>IH</sub> = 7			0.1			0.1	mA
I <sub>IL</sub>	Low Level Input Current	V <sub>CC</sub> =max, V <sub>IN</sub> =0.4V			-0.4			-0.1	mA
I <sub>O</sub>	Short Circuit Current	V <sub>CC</sub> =max, V <sub>O</sub> =2.25 V	-20		-110	-30		-112	mA
I <sub>CC</sub>	Supply Current	V <sub>CC</sub> =max			10		7.5	12	mA

### SWITCHING CHARACTERISTICS over full operating range

Symbol	Parameter	LS151 C <sub>L</sub> =15pF		ALS151 C <sub>L</sub> = 50 pF R <sub>L</sub> = 500Ω		Unit
		Min	Max	Min	Max	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay Address to Y		43 30	4 8	18 24	ns
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay From Any D to Output Y		42 32	3 5	10 15	ns
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay From Strobe to Output Y		32 26	4 4	18 19	ns

### SWITCHING WAVEFORMS

