

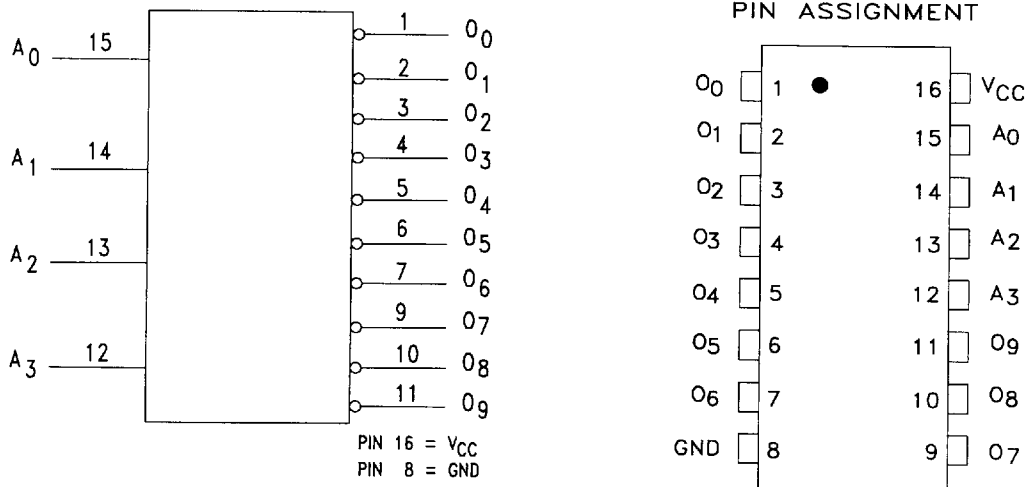
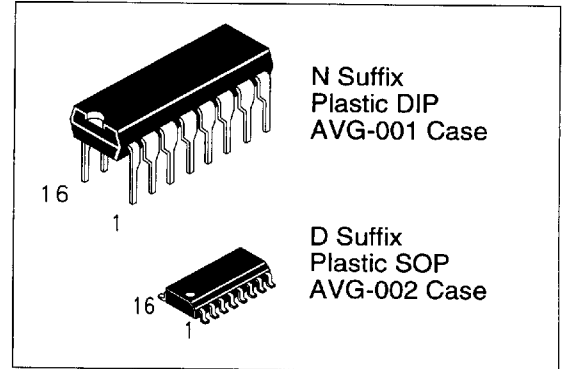
Available Q2, 1995

1 of 10 Decoder/Driver with Open Collector Outputs

This 1 of 10 decoder driver is designed to accept BCD inputs and to provide appropriate outputs to drive incandescent displays. Outputs remain off for invalid input conditions. It is designed for use as an indicator, relay driver, or as an open collector logic driver.

- 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

DV74LS145 DV74ALS145



TRUTH TABLE

INPUTS				OUTPUTS									
A ₀	A ₁	A ₂	A ₃	O ₀	O ₁	O ₂	O ₃	O ₄	O ₅	O ₆	O ₇	O ₈	O ₉
L	L	L	L	L	H	H	H	H	H	H	H	H	H
H	L	L	L	H	L	H	H	H	H	H	H	H	H
L	H	L	L	H	H	L	H	H	H	H	H	H	H
H	H	L	L	H	H	H	L	H	H	H	H	H	H
L	L	H	L	H	H	H	H	L	H	H	H	H	H
H	L	H	L	H	H	H	H	H	L	H	H	H	H
L	H	H	L	H	H	H	H	H	H	L	H	H	H
H	H	H	L	H	H	H	H	H	H	H	L	H	H
L	L	L	H	H	H	H	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	H	H	H	H	L
L	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
L	L	H	H	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

H = High Level Logic L = Low Level Logic

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS145	ALS145	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	LS145		ALS145		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
V _{OH}	High Level Output Voltage		15		15	V
I _{OL}	Low Level Output Current		24.0		24.0	mA
T _A	Ambient Temperature Range	-10 to +70		-10 to + 70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Conditions	LS145			ALS145			Units
			Min	Typ	Max	Min	Typ	Max	
V _{IK}	Input Clamp Voltage	V _{CC} = min, I _{IN} = -18 mA			-1.5			-1.5	V
V _{OL}	Low Level Output Voltage	V _{CC} =min;		0.35	0.5		0.35	0.5	V
		V _{CC} =min; I _{OL} =24 mA		2.3	3.0		2.3	3.0	V
I _{OH}	High Level Output Current	V _{CC} =min; V _{OH} =max			250			250	μA
		V _{CC} =max, V _{IN} = 2.7V			20			20	μA
I _{IH}	High Level Input Current	V _{CC} =max, V _{IN} = 7V			0.1			0.1	mA
		V _{CC} =max, V _{IN} =0.4V			-0.4			-0.1	mA
I _{IL}	Low Level Input Current	V _{CC} =max, V _{IN} =0.4V			-0.4			-0.1	mA
I _O	Output Short Circuit Current	V _{CC} =max, V _O =2.25V	-20		-110	-30		-112	mA
I _{CC}	Supply Current	V _{CC} =max, Inputs Low			13			13	mA

SWITCHING CHARACTERISTICS

Symbol	Parameter	From	To	LS145 C _L =45pF R _L = 2.0kΩ		ALS145 C _L = 50 pF R _L = 2.0kΩ		Unit
				Min	Max	Min	Max	
t _{PLH}	Propagation Delay Time, Low to High Level Output	Address	O _n		50		40	ns
t _{PHL}	Propagation Delay Time, High to Low Level Output	Address	O _n		50		40	ns

SWITCHING WAVEFORMS

