

✓ **54/74145** 010105

1-OF-10 DECODER/DRIVER
(With Open-Collector Outputs)

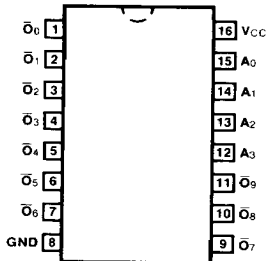
DESCRIPTION — The '145 decoder/drivers are designed to accept BCD inputs and provide appropriate outputs to drive 7-segment numerical displays. All outputs remain OFF for all invalid binary input conditions. These devices are designed for use as indicator/relay drivers or as open-collector logic circuit drivers. Each of the high breakdown (15 V) output transistors will sink up to 80 mA of current.

- **OPEN-COLLECTOR OUTPUTS**
- **80 mA CURRENT SINKING**
- **15 V GUARANTEED BREAKDOWN**

ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		V _{CC} = +5.0 V ±5%, T _A = 0° C to +70° C	V _{CC} = +5.0 V ±10%, T _A = -55° C to +125° C	
Plastic DIP (P)	A	74145PC		9B
Ceramic DIP (D)	A	74145DC	54145DM	7B
Flatpak (F)	A	74145FC	54145FM	4L

CONNECTION DIAGRAM
PINOUT A



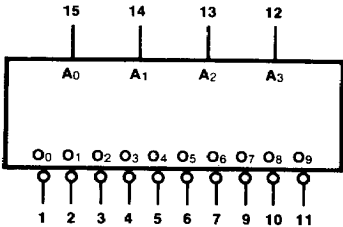
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INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PIN NAMES	DESCRIPTION	54/74 (U.L.) HIGH/LOW
A ₀ — A ₃ O ₀ — O ₉	BCD Inputs Outputs (Active LOW)	1.0/1.0 OC*/12.5

*OC — Open Collector

LOGIC SYMBOL

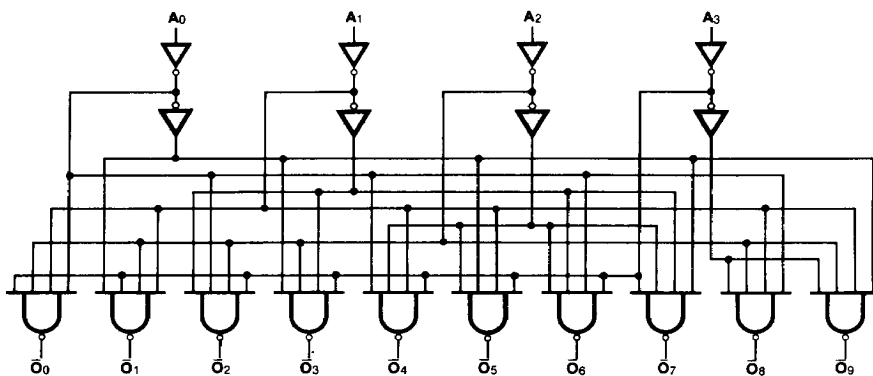


TRUTH TABLE

INPUTS				OUTPUTS									
A ₀	A ₁	A ₂	A ₃	$\bar{O}_0$	$\bar{O}_1$	$\bar{O}_2$	$\bar{O}_3$	$\bar{O}_4$	$\bar{O}_5$	$\bar{O}_6$	$\bar{O}_7$	$\bar{O}_8$	$\bar{O}_9$
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 Voltage Level
L = LOW Voltage Level

LOGIC DIAGRAM



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER	54/74		UNITS	CONDITIONS
		Min	Max		
V _{OL}	Output LOW Voltage	0.9		V	V _{CC} = Min, I _{OL} = 80 mA
I _{OH}	Output HIGH Current	250		μA	V _{CC} = Max, V _{OH} = 15 V
I _{CC}	Power Supply Current	XC	70	mA	V _{CC} = Max, V _{IN} = Gnd
		XM	62		

AC CHARACTERISTICS: V_{CC} = +5.0 V, T_A = +25°C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	54/74		UNITS	CONDITIONS
		C _L = 15 pF R _L = 100 Ω			
		Min	Max		
t _{PLH}	Propagation Delay	50		ns	Figs. 3-2, 3-20
t _{PHL}	A _n to $\overline{O}_n$	50			