

54/74145

1-OF-10 DECODER/DRIVER

(With Open-Collector Outputs)

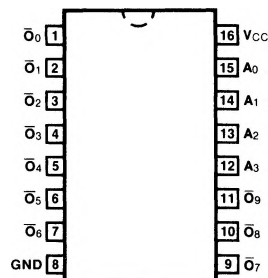
DESCRIPTION—The '145 decoder/drivers are designed to accept BCD inputs and provide appropriate outputs to drive 7-segment numerical displays. All outputs remain OFF for all invalid binary input conditions. These devices are designed for use as indicator/relay drivers or as open-collector logic circuit 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
		$V_{CC} = +5.0 \text{ V} \pm 5\%$, $T_A = 0^\circ \text{ C to } +70^\circ \text{ C}$	$V_{CC} = +5.0 \text{ V} \pm 10\%$, $T_A = -55^\circ \text{ C to } +125^\circ \text{ C}$	
Plastic DIP (P)	A	74145PC		9B
Ceramic DIP (D)	A	74145DC	54145DM	7B
Flatpak (F)	A	74145FC	54145FM	4L

CONNECTION DIAGRAM PINOUT A

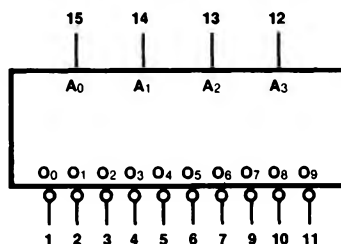


INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PIN NAMES	DESCRIPTION	54/74 (U.L.) HIGH/LOW
$A_0 - A_3$ $\bar{O}_0 - \bar{O}_9$	BCD Inputs Outputs (Active LOW)	1.0/1.0 OC*/12.5

*OC—Open Collector

LOGIC SYMBOL

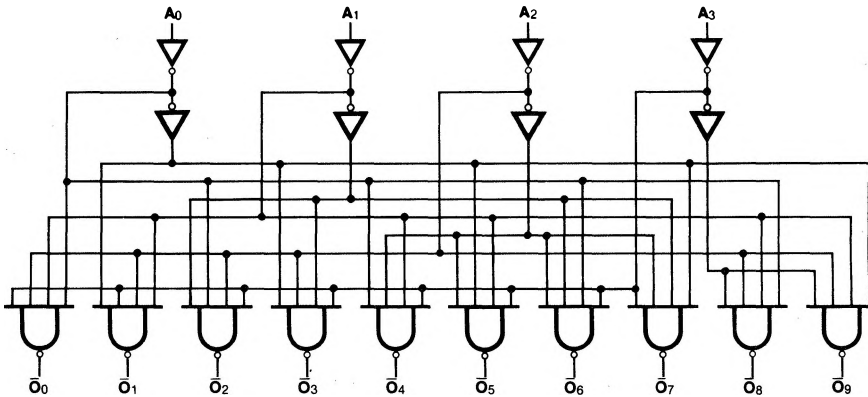


TRUTH TABLE

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} t _{PHL}	Propagation Delay A _n to \bar{O}_n		50 50		ns	Figs. 3-2, 3-20