

54/7448
54LS/74LS48
BCD TO 7-SEGMENT DECODER

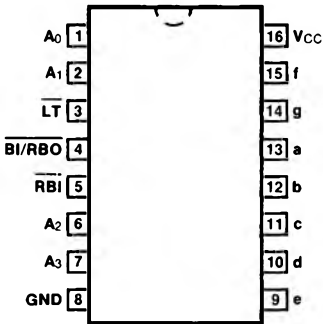
DESCRIPTION — The '48 translates four lines of BCD (8421) input data into the 7-segment numeral code and provides seven corresponding outputs having pull-up resistors, as opposed to totem pole pull-ups. These outputs can serve as logic signals, with a HIGH output corresponding to a lighted lamp segment, or can provide a 1.3 mA base current to npn lamp driver transistors. Auxiliary inputs provide lamp test, blanking and cascadable zero-suppression functions.

The '48 decodes the input data in the pattern indicated in the Truth Table and the segment identification illustration. For a detailed description of the blanking, lamp test and zero-suppression functions refer to the '46A data sheet, but note that the segment output states of the '48 are the logical inverse of those of the '46A. Also see the 'LS248 data sheet.

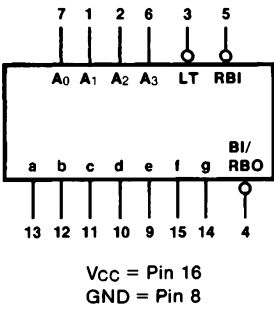
ORDERING CODE: See Section 9

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	7448PC, 74LS48PC		9B
Ceramic DIP (D)	A	7448DC, 74LS48DC	5448DM, 54LS48DM	7B
Flatpak (F)	A	7448FC, 74LS48FC	5448FM, 54LS48FM	4L

CONNECTION DIAGRAM
PINOUT A



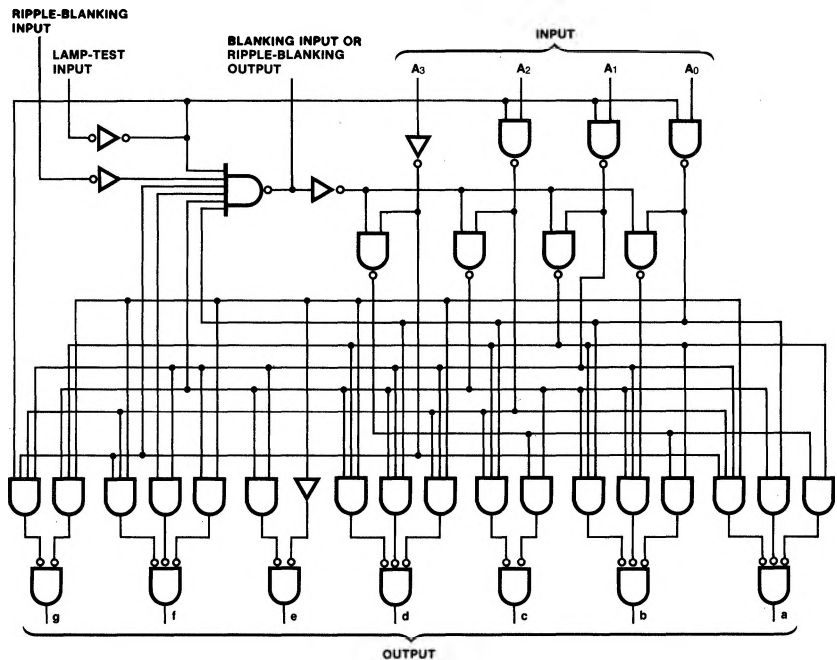
LOGIC SYMBOL



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

PIN NAMES	DESCRIPTION	54/74 (U.L.) HIGH/LOW	54/74LS (U.L.) HIGH/LOW
A ₀ — A ₃	BCD Inputs	1.0/1.0	0.5/0.25
RBI	Ripple Blanking Input (Active LOW)	1.0/1.0	0.5/0.25
LT	Lamp Test Input (Active LOW)	1.0/1.0	0.5/0.25
BI/RBO	Blanking Input (Active LOW) or Ripple Blanking Output (Active LOW)	-2.5 5.0/5.0	-0.75 1.25/2.0 (1.0)
a — g	Segment Outputs (Active HIGH)	10/4.0	2.5/3.75 (1.25)

LOGIC DIAGRAM



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER		54/74		54/74LS		UNITS	CONDITIONS
			Min	Max	Min	Max		
I _{OH}	Output HIGH Current at a — g		-1.3		-1.3		mA	V _{CC} = Min, V _{OUT} = 0.85 V
I _{OS}	Output Short Circuit Current at BI/RBO		-4.0		-0.3 -2.0		mA	V _{CC} = Max, V _{OUT} = 0 V
I _{CC}	Power Supply Current	XM	76		38		mA	V _{CC} = Max All Inputs = 4.5 V
		XC	90		38			

AC CHARACTERISTICS: VCC = +5.0 V, TA = +25° C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER	54/74		54/74LS		UNITS	CONDITIONS
		C _L = 15 pF R _L = 1 kΩ		C _L = 15 pF			
		Min	Max	Min	Max		
t _{PLH} t _{PHL}	Propagation Delay A _n to a — g	100	100	100	100	ns	Figs. 3-1, 3-20
t _{PLH} t _{PHL}	Propagation Delay RBI to a — f	100	100	100	100	ns	Figs. 3-1, 3-5 LT = HIGH, A ₀ — A ₃ = HIGH