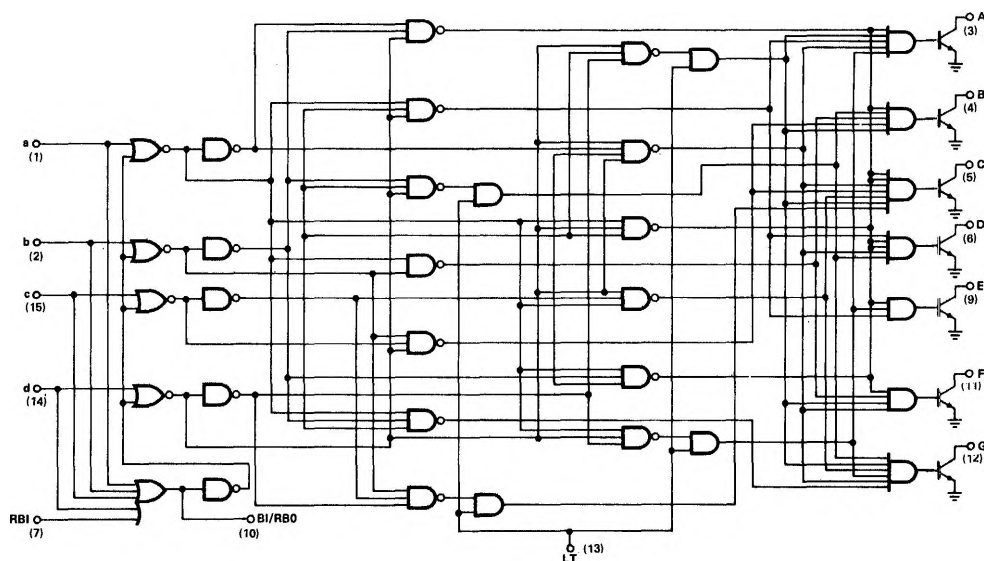


DESCRIPTION

The 8T06 is a monolithic MSI circuit consisting of the necessary logic to decode a 4-bit BCD code to drive 7-segment indicators directly. Open-collector outputs are used for high current source applications, such as driving common cathode LED displays and discrete active components. The 8T06 seven segment decoder/driver accepts a 4-bit binary code and decodes all possible inputs as decimals 0-9 or selected signs and letters. Auxiliary inputs are provided for

maximum versatility. The ripple blanking inputs (RBI) and the ripple blanking output (RBO) may be used for automatic leading and/or trailing-edge zero suppression. The RBO output also acts as an overriding blanking input (BI) which may be used for intensity modulation or strobing of the display. A lamp test (LT) input is provided to check the integrity of the display by activating all outputs independent of the input code.

LOGIC DIAGRAM



V_{CC} = (16)
GND = (8)
() = Denotes Pin Numbers

ELECTRICAL CHARACTERISTICS (Over Recommended Operating Temperature And Voltage)

CHARACTERISTICS	LIMITS				TEST CONDITIONS					NOTES
	MIN.	TYP.	MAX.	UNITS	LT	RB1	RB0 B1	DRIVEN INPUTS	OUTPUTS	
"1" Output Voltage RBO	3.1			V			~160μA			7, 9
"0" Output Voltage (A-G) RBO			0.5 0.4	V V	4.5V	0.4V 0.8V	0.4V 4.8mA	0.8V	40mA	8, 9 8, 9
"1" Output Leakage Current (A-G)			100	μA	0.4V				6.0V	9, 10
"1" Input Current RBI			40	μA		4.5V				
LT			160	μA	4.5V					
All Other Inputs			80	μA		4.5V	4.5V	4.5V		
"0" Input Current RBI	-1		-1.2	mA		0.4V				
BI	-1		-2.2	mA			0.4V			
LT	-1		-10	mA	0.4V					
All Other Inputs	-1		-1.6	mA	0.4V	0.4V	0.4V	0.4V		
Input Voltage Rating	5.5			V		10mA		10mA		
Power/Current Consumption:										
"S" Temperature Range			394/75	mW/mA						11
"N" Temperature Range			446/85	mW/mA						11

NOTES:

1. All voltage measurements are referenced to the ground terminal. Terminals not specifically referenced are left electrically open.

2. All measurements are taken with ground pin tied to zero volts.

3. Positive current is defined as into the terminal referenced.

4. Positive NAND Logic Definitions:
"UP" Level = "1", "DOWN" Level = "0".

5. Precautionary measures should be taken to ensure current limiting in accordance with Absolute Maximum Ratings should the isolation diodes become forward biased.

6. Measurements apply to each gate element independently.
7. Output source current is supplied through a resistor to ground.

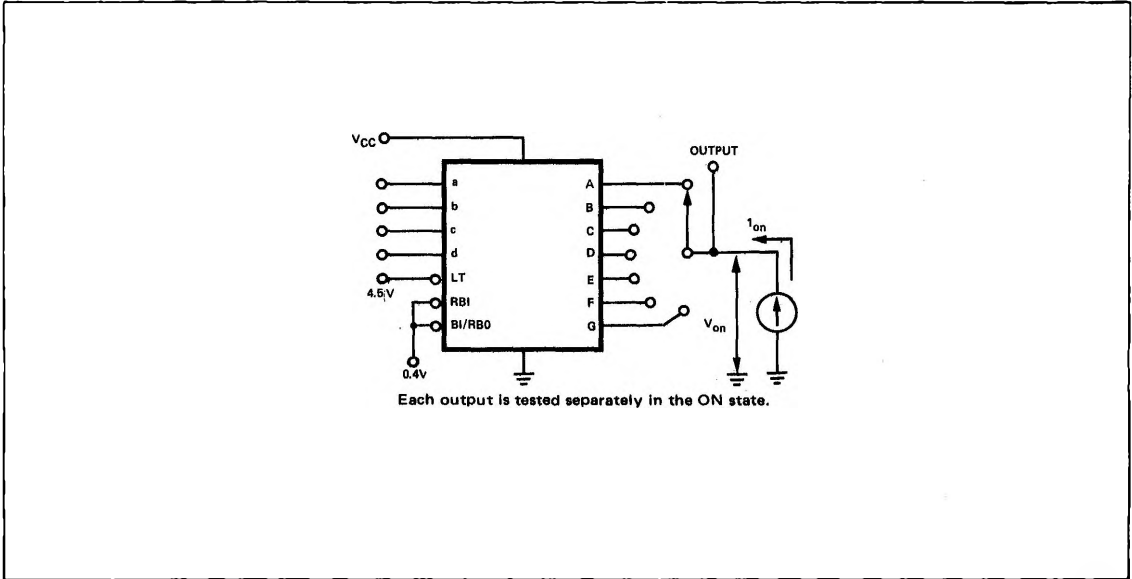
8. Output sink current is supplied through a resistor to V_{CC}.

9. See truth table: "1" Threshold = 2.0V for a,b,c,d.
"0" Threshold = 0.8V for a,b,c,d.

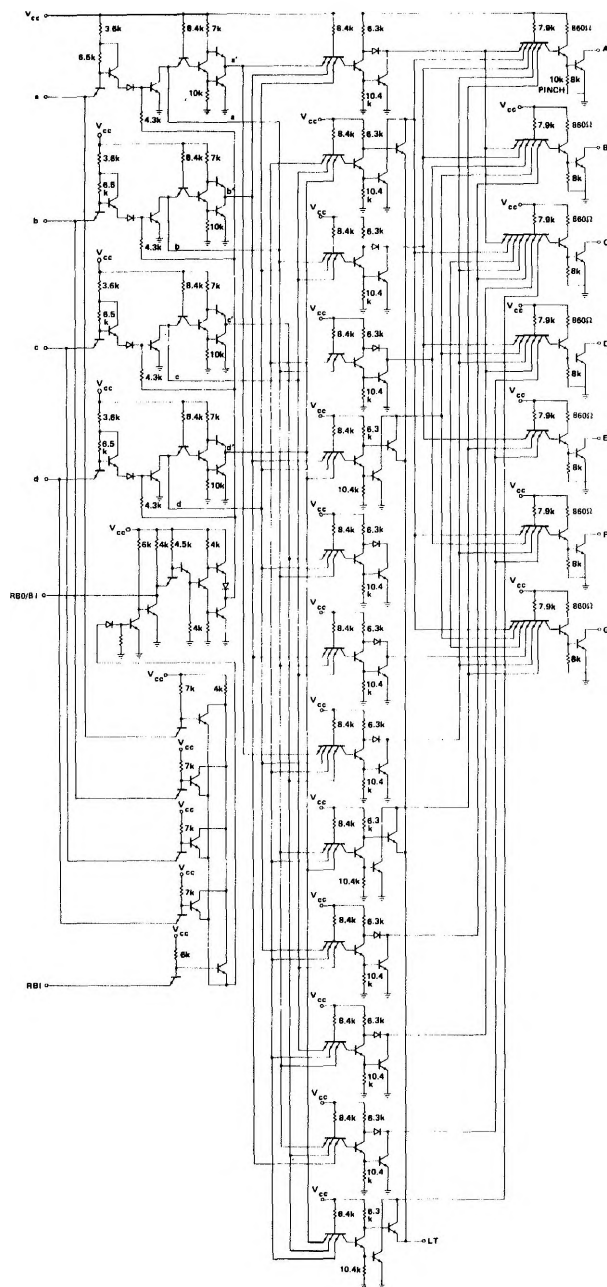
10. Connect an external 1k ±1% resistor to the output for this test.

11. V_{CC} = 5.25V.

TEST FIGURE FOR "0" OUTPUT VOLTAGE



SCHEMATIC DIAGRAM



TRUTH TABLE

INPUTS						BI/RBO	OUTPUTS								
INPUT CODE				LAMP TEST	RBI		OUTPUT STATE								DISPLAY CHARACTER
d	c	b	a	LT			Note	A	B	C	D	E	F	G	
X	X	X	X	0	X	X	1	1	1	1	1	1	1	8	
X	X	X	X	1	X	0	0	0	0	0	0	0	0	BLK	
0	0	0	0	1	0	(Note 1 & 2)	0	0	0	0	0	0	0	BLK	
0	0	0	0	1	1	(Note 2)	1	1	1	1	1	1	0	0	
0	0	0	1	1	X	1	0	1	1	0	0	0	0	1	
0	0	1	0	1	X	1	1	1	0	1	1	0	1	2	
0	0	1	1	1	X	1	1	1	1	1	0	0	1	3	
0	1	0	0	1	X	1	0	1	1	0	0	1	1	4	
0	1	0	1	1	X	1	1	0	1	1	0	1	1	5	
0	1	1	0	1	X	1	0	0	1	1	1	1	1	6	
0	1	1	1	1	X	1	1	1	1	0	0	0	0	7	
1	0	0	0	1	X	1	1	1	1	1	1	1	1	8	
1	0	0	1	1	X	1	1	1	1	0	0	1	1	9	
1	0	1	0	1	X	1	0	0	0	0	0	0	1	1	
1	0	1	1	1	X	1	0	0	0	0	0	0	0	BLK	
1	1	0	0	1	X	1	1	1	1	0	1	1	1	8	
1	1	0	1	1	X	1	0	0	1	0	0	0	0	1	
1	1	1	0	1	X	1	0	0	0	1	1	1	0	7	
1	1	1	1	1	X	1	0	0	0	0	0	0	0	BLK	

*COMMA

X = Don't care, either "1" or "0".
BI/RBO is an internally wired OR output.

- NOTE:
- 1. BI/RBO used as input.
 - 2. BI/RBO should not be forced high when a, b, c, d, RBI terminals are low, or damage may occur to the unit.

