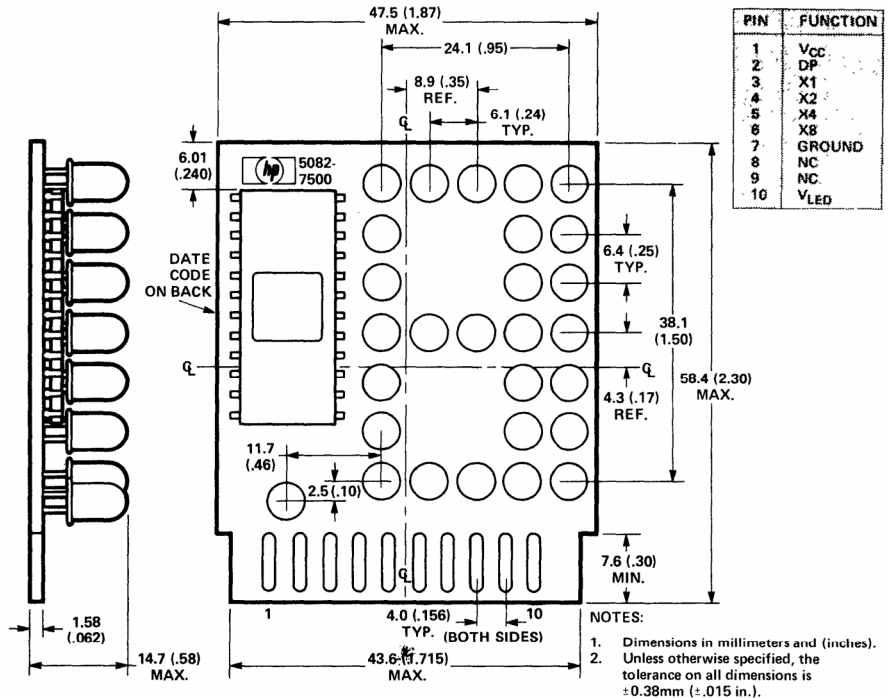


Features

- 1.5 INCH HIGH CHARACTER
Readable From 60 Feet
- ON-BOARD DECODER/DRIVER
8421 Positive Logic Input
DTL-TTL Compatible
- 5 x 7 DOT MATRIX
Shaped Character For
Excellent Readability
- SINGLE PLANE
CONSTRUCTION
Wide Viewing Angle
- EDGE MOUNTING IN STAND-
ARD PC BOARD
CONNECTORS (.156" Centers)
- RELIABLE, RUGGED, LONG
OPERATING LIFE



Description

The HP 5082-7500 is a 38.1mm (1.5 in.) numeric indicator utilizing discrete red light emitting diodes arranged in a 5 x 7 dot matrix. Inclusion of the decoder/driver permits direct addressing by the standard BCD code.

The large size and high efficiency light emitters permit viewing distances up to 60 feet. The single plane of light emitters permits wide viewing angles and low mounting space requirements. Applications include equipment for scales, process control and medical measurement, and other data systems requiring ease of readability at a distance.

Absolute Maximum Ratings

Description	Symbol	Min.	Max.	Unit
Storage Temperature, Ambient	T _S	-40	85	°C
Operating Temperature, Ambient	T _A	-20	70	°C
Logic Supply Voltage [1]	V _{CC}	-0.5	7	V
LED Supply Voltage [1, 2]	V _{LED}	-0.5	5.25	V
Voltage Applied to BCD [1, 2] and Decimal Point Inputs	V _I	-0.5	5.25	V

[1] Voltage values are with respect to ground pin. [2] V_I or V_{LED} not to exceed V_{CC} by more than 0.5V at any time.

Recommended Operating Conditions

Description	Symbol	Min.	Nom.	Max.	Unit
Logic Supply Voltage	V _{CC}	4.5	5.0	5.5	V
LED Supply Voltage, Display ON [1]	V _{LED}	4.5	5.0	5.25	V
LED Supply Voltage, Display OFF [2]	V _{LED}	-0.5	0	1.0	V
Operating Temperature, Ambient	T _A	-20	25	70	°C

[1] All selected LEDs remain uniformly lit. [2] All LEDs remain off.

Electrical / Optical Characteristics ($T_A = -20^\circ\text{C}$ to 70°C , Unless Noted)

Description	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Logic Voltage, "L" State	V_{IL}	$V_{CC} = 4.5\text{V}$	0		0.8	V
Logic Voltage, "H" State	V_{IH}	$V_{CC} = 5.5\text{V}$	2.0		5.25	V
Logic Supply Current	I_{CC}	$V_{CC} = 5.5\text{V}$		37 [1]	65	mA
LED Supply Current	I_{LED}	$V_{CC} = 5.5\text{V}, V_{LED} = 5.25\text{V}$		250 [1]	460	mA
Power Dissipation	P_D	$V_{CC} = 5.5\text{V}, V_{LED} = 5.25\text{V}$		1.4 [1]	2.8	W
Luminous Intensity per LED (digit average)	I	$V_{CC} = 5.0\text{V}, V_{LED} = 5.0\text{V}$ $T_A = 25^\circ\text{C}$	0.8	1.25		mcd
Logic Current, "L" State	I_{IL}	$V_{CC} = 5.5\text{V}, V_{in} = 0.4\text{V}$			-1.6	mA
Logic Current, "H" State	I_{IH}	$V_{CC} = 5.5\text{V}, V_{in} = 2.4\text{V}$			+100	μA
Decimal Point Current	I_{dp} [3]	$V_{CC} = 5.5\text{V}, V_{LED} = 5.25\text{V}$ $V_{dp} = 0.4\text{V}$		-25 [2]	-35	mA
Peak Wavelength	λ_{PEAK}			655		nm
Spectral Halfwidth	$\Delta\lambda_{1/2}$			30		nm
Weight				25		gm

[1] $V_{CC} = 5.0\text{V}, V_{LED} = 5.0\text{V}$ with statistical average number of LEDs lit, $T_A = 25^\circ\text{C}$.

[2] $V_{CC} = 5.0\text{V}, V_{LED} = 5.0\text{V}, T_A = 25^\circ\text{C}$.

[3] Pin 2 is connected to the decimal point LED thru a 120Ω series current limiting resistor. This pin should be connected to ground thru a NPN switching transistor.

Truth Table

Character	X8	X4	X2	X1
0	L	L	L	L
1	L	L	L	H
2	L	L	H	L
3	L	L	H	H
4	L	H	L	L
5	L	H	L	H
6	L	H	H	L
7	L	H	H	H
8	H	L	L	L
9	H	L	L	H
BLANK	H	L	H	L
BLANK	H	L	H	H
BLANK	H	H	L	L
BLANK	H	H	L	H
BLANK	H	H	H	L
BLANK	H	H	H	H
D.P. ON			D.P. (IN) = L	
D.P. OFF			D.P. (IN) = H	

0
1
2
3
4
5
6
7
8
9

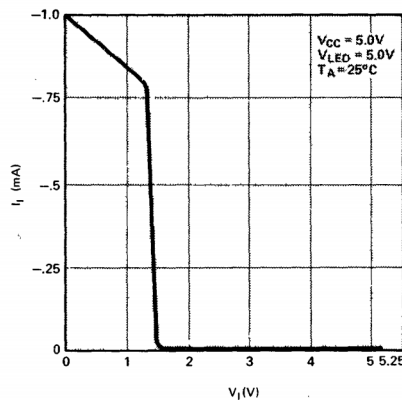


Figure 1. Typical BCD logic input current vs. input voltage.

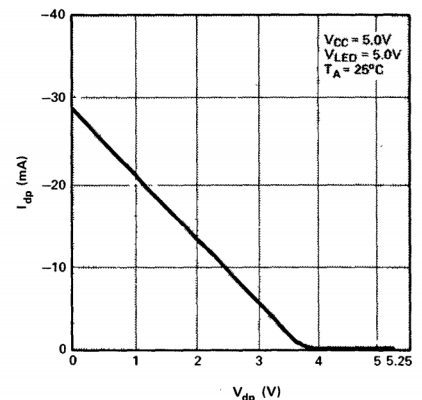


Figure 2. Typical decimal point input current as a function of dp input voltage.

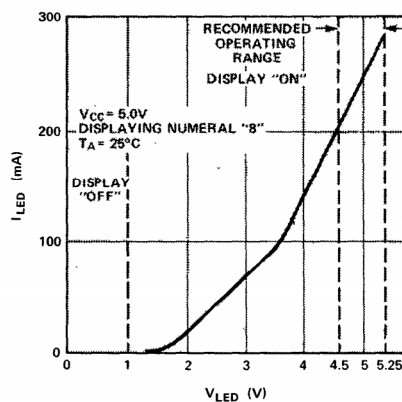


Figure 3. Typical I_{LED} as a function of V_{LED} .

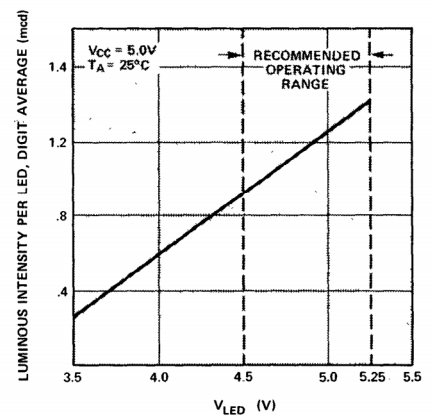


Figure 4. Typical luminous intensity per LED (digit average) as a function of V_{LED} .