HDSP-B0xG

18:88 and 88:88 0.56" Four Digit GaP Green Seven Segment Display



Data Sheet



Description

The 18:88 and 88:88 0.56" Four Digit Seven Segment Displays have surface painted in neutral gray and black for enhanced on/off contrast. All devices are available in either common anode or common cathode configuration with tinted green segments or untinted segments.

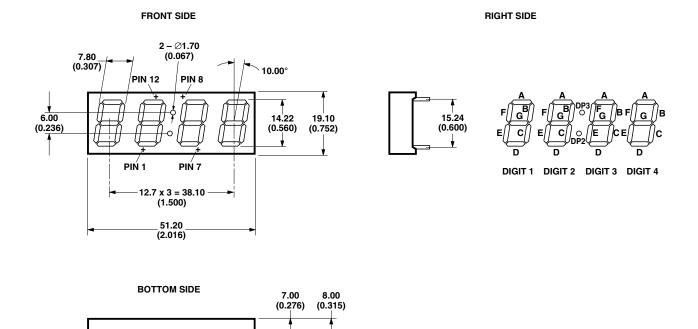
Features

- Excellent appearance
- Evenly illuminated segments
- Gray face for optimum on/off contrast
- Choice of colors: Green
- Choice of character size: 0.56 inch

Package Dimensions

2.54 x 6 = 15.24 (0.600)

88:88 0.56" Four Digit Display



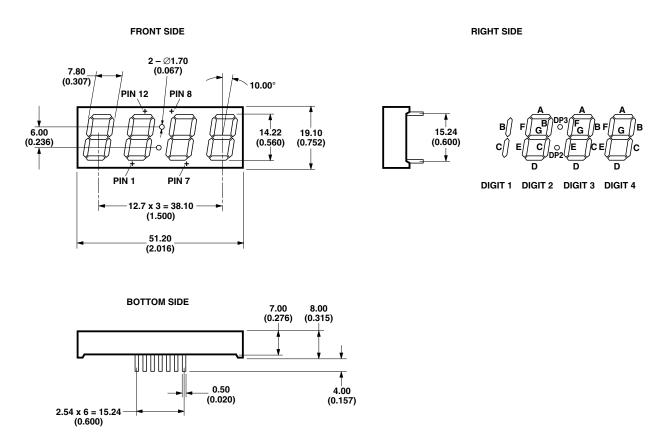
4.00 (0.157)

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (INCHES). UNLESS OTHERWISE STATED, TOLERANCES ARE ± 0.25 mm.

_ 0.50 (0.020)

Package Dimensions

18:88 0.56" Four Digit Display



NOTE:

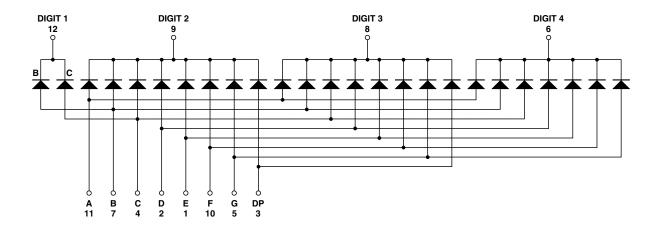
ALL DIMENSIONS ARE IN MILLIMETERS (INCHES). UNLESS OTHERWISE STATED, TOLERANCES ARE \pm 0.25 mm.

Pin Configuration

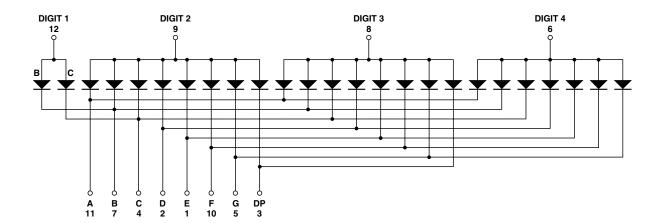
	Function				
Pin	HDSP-B01G/B03G/B05G/B07G/B09G	HDSP-B02G/B04G/B06G/B08G/B10G			
1	Anode E	Cathode E			
2	Anode D	Cathode D			
3	Anode DP	Cathode DP			
4	Anode C	Cathode C			
5	Anode G	Cathode G			
6	Digit 4 Common Cathode	Digit 4 Common Anode			
7	Anode B	Cathode B			
8	Digit 3 Common Cathode	Digit 3 Common Anode			
9	Digit 2 Common Cathode	Digit 2 Common Anode			
10	Anode F	Cathode F			
11	Anode A	Cathode A			
12	Digit 1 Common Cathode	Digit 1 Common Anode			

Internal Circuit Diagram

HDSP-B01G and HDSP-B05G (Common Cathode)

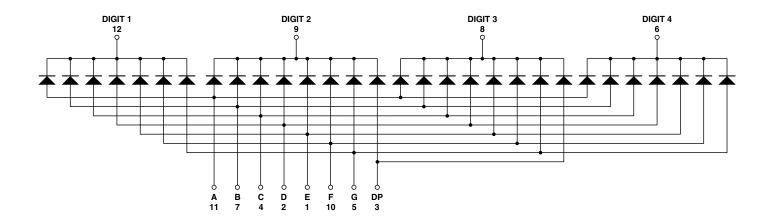


HDSP-B02G and HDSP-B06G (Common Anode)

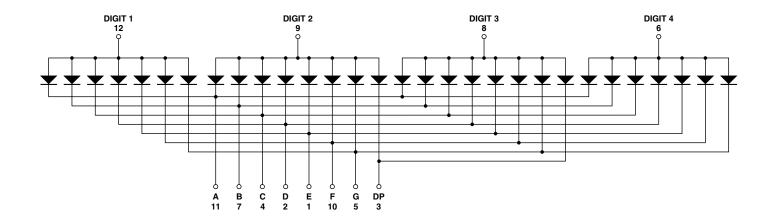


Internal Circuit Diagram

HDSP-B03G, HDSP-B07G, and HDSP-B09G (Common Cathode)



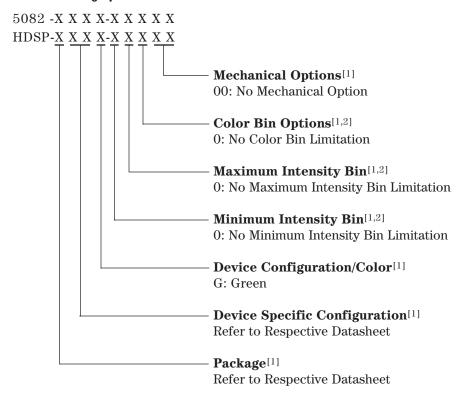
HDSP-B04G, HDSP-B08G, and HDSP-B10G (Common Anode)



Devices

HDSP-	Description
B01G	88:88 0.56" Green 4 Digit, Tinted Green, Common Cathode, Display 18:88, Gray Color Surface
B02G	88:88 0.56" Green 4 Digit, Tinted Green, Common Anode, Display 18:88, Gray Color Surface
B03G	88:88 0.56" Green 4 Digit, Tinted Green, Common Cathode, Display 88:88, Gray Color Surface
B04G	88:88 0.56" Green 4 Digit, Tinted Green, Common Anode, Display 88:88, Gray Color Surface
B05G	88:88 0.56" Green 4 Digit, Untinted, Common Cathode, Display 18:88, Gray Color Surface
B06G	88:88 0.56" Green 4 Digit, Untinted, Common Anode, Display 18:88, Gray Color Surface
B07G	88:88 0.56" Green 4 Digit, Untinted, Common Cathode, Display 88:88, Gray Color Surface
B08G	88:88 0.56" Green 4 Digit, Untinted, Common Anode, Display 88:88, Gray Color Surface
B09G	88:88 0.56" Green 4 Digit, Untinted, Common Cathode, Display 88:88, Black Color Surface
B10G	88:88 0.56" Green 4 Digit, Untinted, Common Anode, Display 88:88, Black Color Surface

Part Numbering System



Notes:

- 1. For codes not listed in the figure above, please refer to the respective datasheet or contact your nearest Avago representative for details.
- 2. Bin options refer to shippable bins for a part number. Color and Intensity Bins are typically restricted to 1 bin per tube (exceptions may apply). Please refer to respective datasheet for specific bin limit information.

Absolute Maximum Ratings

Description	Green	Units
Average Power per Segment or DP	65	mW
Peak Forward Current per Segment or DP	100	mA
DC Forward Current per Segment or DP	25	mA
Operating Temperature Range	-40 to +105	°C
Storage Temperature Range	-40 to +105	°C
Reverse Voltage per Segment or DP	5	V
Wavesoldering Temperature for 3 seconds 2 mm below body	250	°C

Note:

Electrical/Optical Characteristics at $T_A = 25^{\circ}C$

Device Series							
HDSP-	Parameter	Symbol	Min.	Тур.	Max.	Units	Test Conditions
B01G, B02G, B03G, B04G	Luminous Intensity/Segment (Digit Average)	Iv	2000	3200		μcd	I _F = 10 mA
B05G, B06G, B07G, B08G, B09G, B10G			3200	4500			
All Devices	Forward Voltage/Segment or DP	V _F	1.80	2.20	2.60	V	I _F = 20 mA
	Peak Wavelength	λρεακ		568		nm	I _F = 20 mA
	Dominant Wavelength	λ_{d}		573		nm	I _F = 20 mA
	Luminous Intensity Matching Ratio	I _{V-M}			2:1		I _F = 10 mA
	Reverse Current	I _R			100	μΑ	V _R = 5 V

Notes

Intensity Bin Limits (µcd at 10 mA)

Device Series HDSP-	B01G, B02G,	B01G, B02G, B03G, B04G		B07G, B08G, B09G, B10G	
Bin Name	Min. ^[1]	Max. ^[1]	Min. ^[1]	Max. ^[1]	
K	2000	3200	NA	NA	
L	3200	5050	3200	5050	
M	NA	NA	5050	8000	

Note:

Color Categories (Tolerance ± 1 nm)

Rank	Symbol	Hue Range	Unit
2	2	573.5-576.5	nm
3	3	570.5-573.5	nm

^{1.} Derate above 40° C at 0.33 mA/° C for green.

^{1.} Typical specification for reference only. Do not exceed absolute maximum ratings.

^{2.} The dominant wavelength, λ_d , is derived from the CIE chromaticity diagram and is that single wavelength which defines the color of the device.

^{1.} Tolerance for each bin limit is $\pm 10\%$.

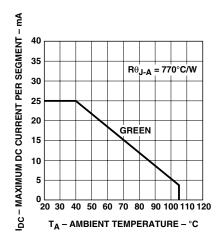
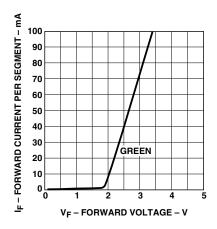


Figure 1. Maximum allowable DC current vs. ambient temperature.



Contrast Enhancement

For information on contrast

Cleaning agents from the ketone

chlorinated hydrocarbon family

recommended for cleaning LED parts. All these various solvents

encapsulating epoxies used to form the package of plastic LED

family (acetone, methyl ethyl

ketone, etc.) and from the

trichloroethylene, carbon

tetrachloride, etc.) are not

(methylene chloride,

attack or dissolve the

parts.

enhancement, please see

Application Note 1015.

Soldering/Cleaning

Figure 2. Forward current vs. forward voltage.

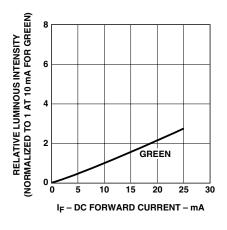


Figure 3. Relative luminous intensity vs. DC forward current.

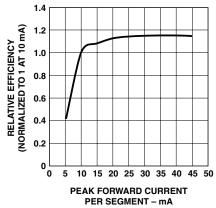


Figure 4. Relative efficiency (luminous intensity per unit current) vs. peak current.

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