HDSP-H5x1/H5x3

0.52" Single Digit PCB Based LED Display

Data Sheet



Description

The HDSP-H5x1/H5x3 is a 052 inch high, single-digit display series. These halogenated devices utilize AllnGaP red, orange, green and deep red chips. This device is halogenated.

All devices are categorized for luminous intensity. The orange and green devices are categorized for color. Use of similar device categories yields a uniform display.

Features

- High reliability
- Excellent characters appearance
- Available in CA and CC
- RoHS Compliant
- Gray top surface with white diffused segments.

Table 1 Ordering Information

Red	Green	Orange	Deep Red	Description
HDSP-H5E1	HDSP-H5G1	HDSP-H5L1	HDSP-H5A1	Common Anode, Right Hand Decimal
HDSP-H5E3	HDSP-H5G3	HDSP-H5L3	HDSP-H5A3	Common Cathode, Right Hand Decimal

Figure 1 Package Dimension





С

Figure 2 Circuit Diagram



Table 2 Absolute Maximum Ratings at $T_A = 25^{\circ}C$

Parameter	Symbol	Red/Orange/Green/Deep Red	Units
Power Dissipation per segment or Dot Point (DP)	P _D	52	mW
Continuous Forward Current per segment	۱ _F	20	mA
Peak Forward Current per segment (1/10 Duty Cycle, 0.1m sec pulse width		100	mA
Derating Linearly from 25°C per segment		0.21	mA/°C
Reverse Voltage per segment or DP	V _R	Not designed for reverse biasing	
Operating Temperature	Τ _Ο	-40 to 85	°C
Storage Temperature	Τ _S	-40 to 85	°C
Wave solder Condition 1.6mm below body		260°C peak for 3 secs max	

Table 3 Red Electrical/Optical Characteristics at $T_A = 25^{\circ}C$

Parameter	Symbol	Min	Тур	Мах	Units	Test Conditions
Average Luminous Intensity (Digit Average)	l _v	—	40	—	mcd	I _F = 10 mA
Peak Wavelength	λ _p	—	634	—	nm	I _F = 20 mA
Dominant Wavelength	λ _d	—	625	—	nm	I _F = 20 mA
Forward Voltage per segment / DP	V _F	—	2.0	2.6	V	I _F = 20 mA
Reverse Current per segment / DP ^a	I _R	—	—	100	μΑ	$V_R = 5 V$
Luminous Intensity Matching Ratio (Segment to Segment)	I _{v-M}	—	2:1	—	—	l _F = 10 mA

a. Indicates production go-no-go test only. Long term reverse biasing is not recommended.

Table 4 Green Electrical/Optical Characteristics at $T_A = 25^{\circ}C$

Parameter	Symbol	Min	Тур	Мах	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I _v	—	15	—	mcd	I _F = 10 mA
Peak Wavelength	λ _p	_	570	_	nm	I _F = 20 mA
Dominant Wavelength	λ_d	_	571	_	nm	I _F = 20 mA
Forward Voltage per segment / DP	V _F	_	2.0	2.6	V	I _F = 20 mA
Reverse Current per segment / DP ^a	I _R	_	_	100	μΑ	V _R = 5 V
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}	_	2:1	_	_	l _F = 10 mA

a. Indicates production go-no-go test only. Long term reverse biasing is not recommended.

Table 5 Orange Electrical/Optical Characteristics at $T_{\rm A}$ = 25°C

Parameter	Symbol	Min	Тур	Мах	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I _v	—	40	—	mcd	I _F = 10 mA
Peak Wavelength	λ _p	—	610	_	nm	I _F = 20 mA
Dominant Wavelength	λ _d	—	605	_	nm	I _F = 20 mA
Forward Voltage per segment / DP	V _F	—	2.0	2.6	V	I _F = 20 mA
Reverse Current per segment / DP ^a	I _R	—	—	100	μΑ	$V_R = 5 V$
Luminous Intensity Matching Ratio	I _{v-M}	—	2:1	_	—	I _F = 10 mA
(Segment to Segment)						

a. Indicates production go-no-go test only. Long term reverse biasing is not recommended.

Table 6 Deep Red Electrical/Optical Characteristics at $T_A = 25^{\circ}C$

Parameter	Symbol	Min	Тур	Мах	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I _v	—	35	—	mcd	I _F = 10 mA
Peak Wavelength	λ _p	—	644	—	nm	I _F = 20 mA
Dominant Wavelength	λ_d	—	635	_	nm	I _F = 20 mA
Forward Voltage per segment / DP	V _F	—	2.0	2.6	V	I _F = 20 mA
Reverse Current per segment / DP ^a	I _R	—	—	100	μΑ	5 V
Luminous Intensity Matching Ratio	I _{v-M}	—	2:1	—	_	I _F = 10 mA
(Segment to Segment)						

a. Indicates production go-no-go test only. Long term reverse biasing is not recommended.

Red







FORWARD VOLTAGE - V

2.5

Green













FORWARD VOLTAGE - V

Orange

Figure 9 Relative Luminous Intensity Vs Forward Current



Figure 11 Relative Luminous Intensity Vs Wavelength



Figure 10 Forward Voltage Vs Current



Deep Red

Figure 12 Relative Luminous Intensity Vs Forward Current









Packing Tube Specifications



Reference

For further information on soldering LEDs, please refer to Avago Technologies Application Note 1027.

For product information and a complete list of distributors, please go to our web site: www.avagotech.com

Avago Technologies and the A logo are trademarks of Avago Technologies in the United States and other countries. All other brand and product names may be trademarks of their respective companies.



pub-005312 – December 16, 2015



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Broadcom Limited:

HDSP-H5E3 HDSP-H5A1 HDSP-H5G1 HDSP-H5A3 HDSP-H5L1 HDSP-H5G3 HDSP-H5L3 HDSP-H5E1