HDSP-C5x1/C5x3
0.52" Single Digit PCB Based LED Display

Data Sheet

Avago
TECHNOLOGIES

Description

This is 0.52" height single digit display. It utilizes GaAsP/ GaP Red, Orange, Yellow, Green and AlGaAs/GaAs Red chips. This device is halogenated.

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

Features

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

Ordering Information

| Red	Green	Yellow	Orange	AlGaAs Red	Description
HDSP-C5E1	HDSP-C5G1	HDSP-C5Y1	HDSP-C5L1	HDSP-C5A1	Common Anode, Right Hand Decimal
HDSP-C5E3	HDSP-C5G3	HDSP-C5Y3	HDSP-C5L3	HDSP-C5A3	Common Cathode, Right Hand Decimal

Package Dimensions
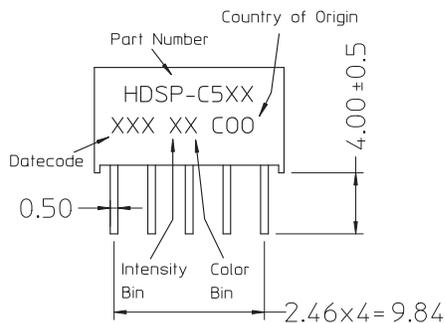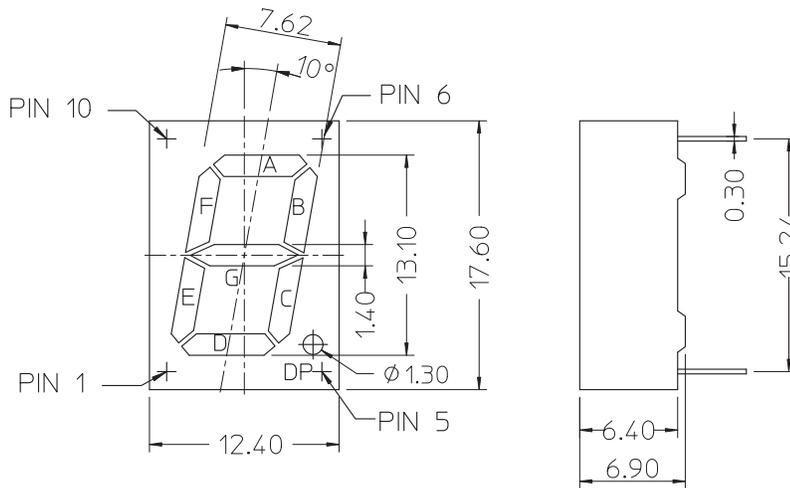
Notes:
1. All dimensions are in millimeter.
2. Unless otherwise stated, the tolerance is ± 0.25mm.

Circuit Diagram

Common Anode   Common Cathode
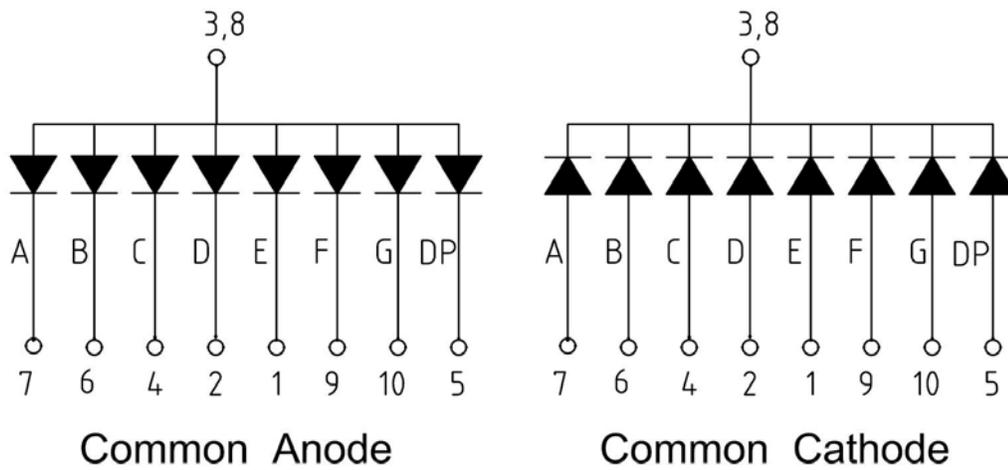
Absolute Maximum Ratings at $T_A = 25°C$

Parameter	Symbol	Red/Yellow/Orange	Green	AlGaAs Red	Units
Power Dissipation per segment or Dot Point (DP)	P_D	57.5	62.5	50	mW
Continuous Forward Current per segment	I_F	25	25	25	mA
Peak Forward Current per segment (1/10 Duty Cycle, 0.1m sec pulse width)		80	80	80	mA
Derating Linearly from 25°C per segment		0.33	0.33	0.33	mA/°C
Reverse Voltage per segment or DP	V_R	5			V
Operating Temperature	T_O	-40 to 85			°C
Storage Temperature	T_S	-40 to 85			°C
Wave solder Condition 1.6mm below body	260°C peak for 5 secs max				

Electrical / Optical Characteristic at $T_A = 25°C$

Red

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I_v	–	4.0	–	mcd	$I_F = 10mA$
Peak Wavelength	λ_p	–	640	–	nm	$I_F = 20mA$
Dominant Wavelength	λ_d	–	626	–	nm	$I_F = 20mA$
Forward Voltage per segment or DP	V_F	–	2.0	2.3	V	$I_F = 20mA$
Reverse Current	I_R	–	–	100	μA	$V_R = 5V$
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}		2:1			$I_F = 10mA$

Green

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I_v	–	6.0	–	mcd	$I_F = 10mA$
Peak Wavelength	λ_p	–	565	–	nm	$I_F = 20mA$
Dominant Wavelength	λ_d	–	569	–	nm	$I_F = 20mA$
Forward Voltage per segment or DP	V_F	–	2.25	2.5	V	$I_F = 20mA$
Reverse Current	I_R	–	–	100	μA	$V_R = 5V$
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}		2:1			$I_F = 10mA$

Yellow

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I_v	–	3.0	–	mcd	$I_F = 10mA$
Peak Wavelength	λ_p	–	587	–	nm	$I_F = 20mA$
Dominant Wavelength	λ_d	–	589	–	nm	$I_F = 20mA$
Forward Voltage per segment or DP	V_F	–	2.15	2.3	V	$I_F = 20mA$
Reverse Current	I_R	–	–	100	μA	$V_R = 5V$
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}		2:1			$I_F = 10mA$

Orange

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I_v	–	4.0	–	mcd	$I_F = 10mA$
Peak Wavelength	λ_p	–	610	–	nm	$I_F = 20mA$
Dominant Wavelength	λ_d	–	605	–	nm	$I_F = 20mA$
Forward Voltage per segment or DP	V_F	–	2.15	2.3	V	$I_F = 20mA$
Reverse Current	I_R	–	–	100	μA	$V_R = 5V$
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}		2:1			$I_F = 10mA$

AlGaAs Red

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Average Luminous Intensity (Digit Average)	I_v	–	16	–	mcd	$I_F = 10mA$
Peak Wavelength	λ_p	–	660	–	nm	$I_F = 20mA$
Dominant Wavelength	λ_d	–	643	–	nm	$I_F = 20mA$
Forward Voltage per segment or DP	V_F	–	1.85	2.0	V	$I_F = 20mA$
Reverse Current	I_R	–	–	100	μA	$V_R = 5V$
Luminous Intensity Matching Ratio (Segment to Segment)	I_{v-M}		2:1			$I_F = 10mA$

Red
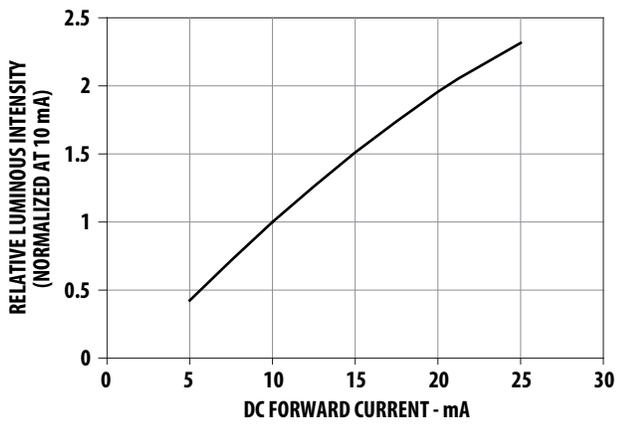
Figure 1. Relative Luminous Intensity Vs Forward Current
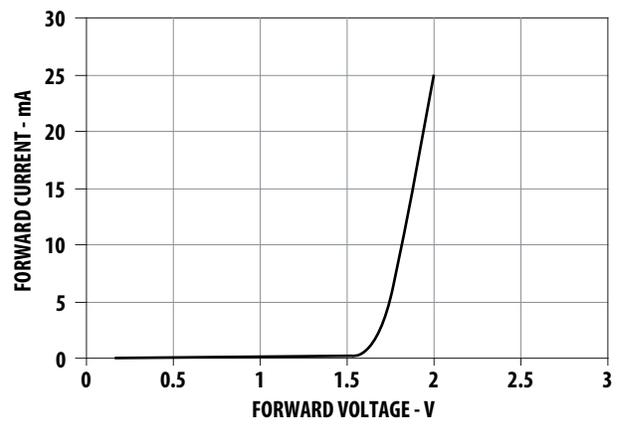
Figure 2. Forward Voltage Vs Current
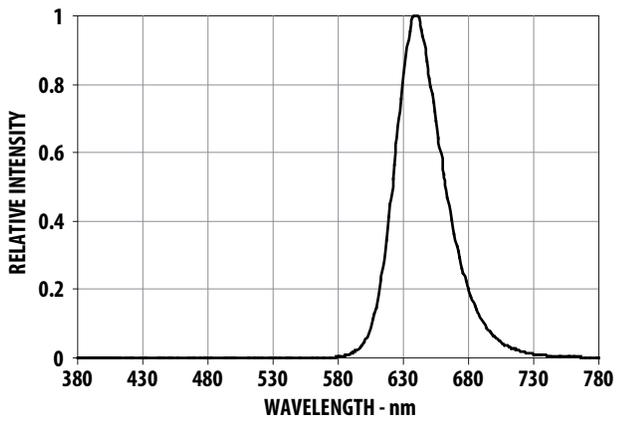
Figure 3. Relative Luminous Intensity Vs Wavelength

Green
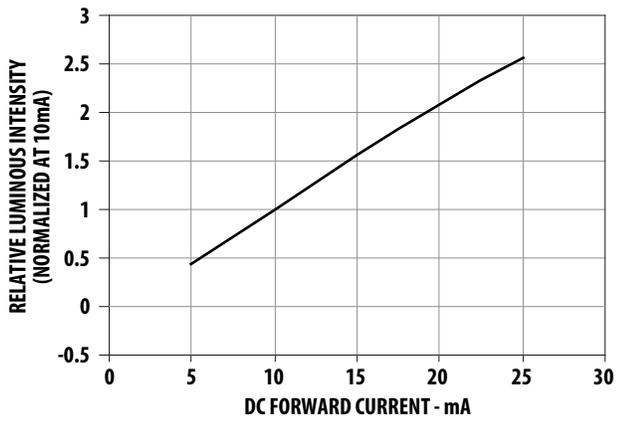
Figure 4. Relative Luminous Intensity Vs Forward Current
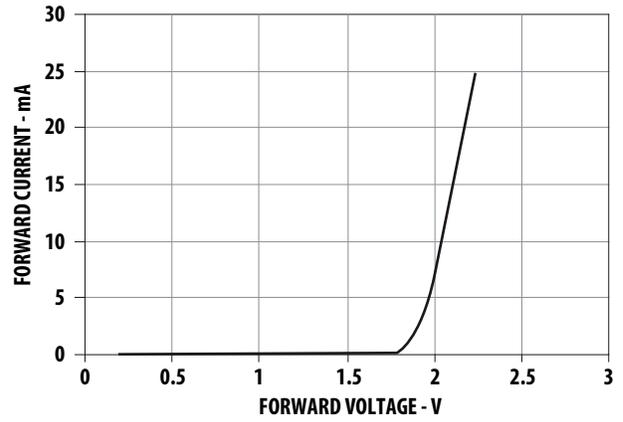

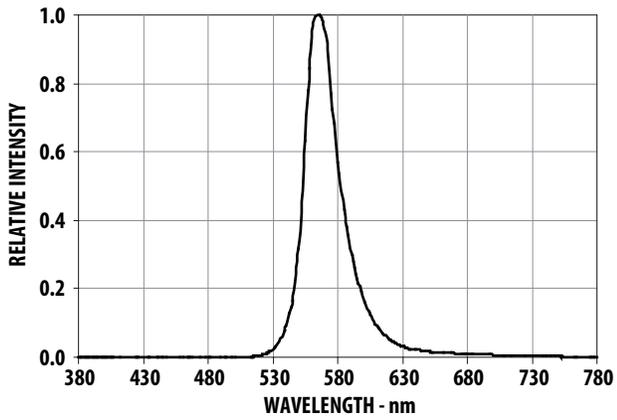Figure 5. Forward Voltage Vs Current

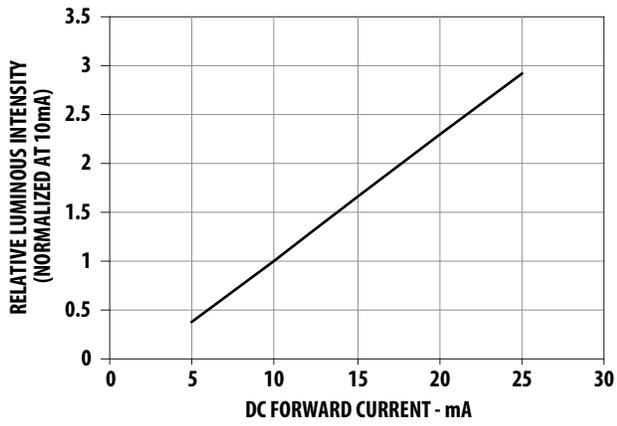Figure 6. Relative Luminous Intensity Vs Wavelength

Yellow

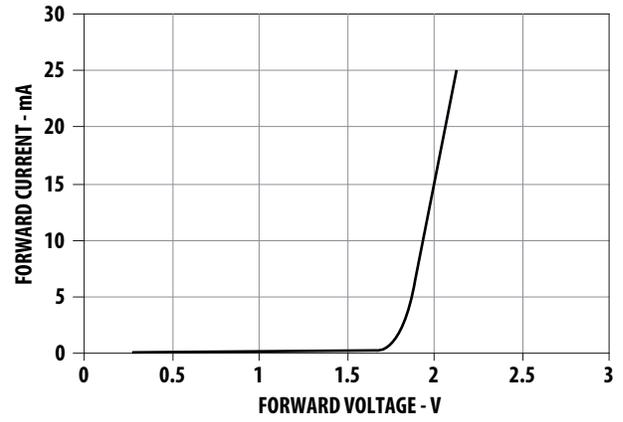Figure 7. Relative Luminous Intensity Vs Forward Current
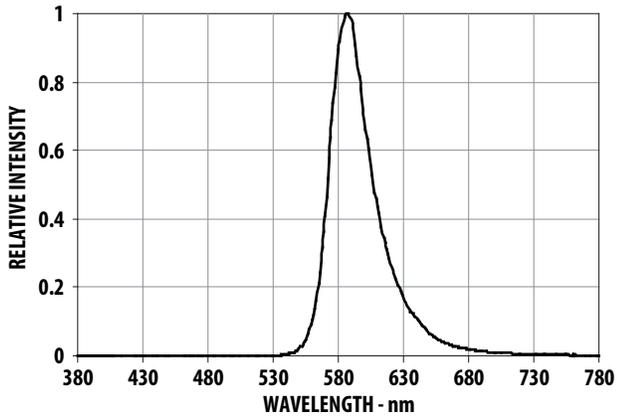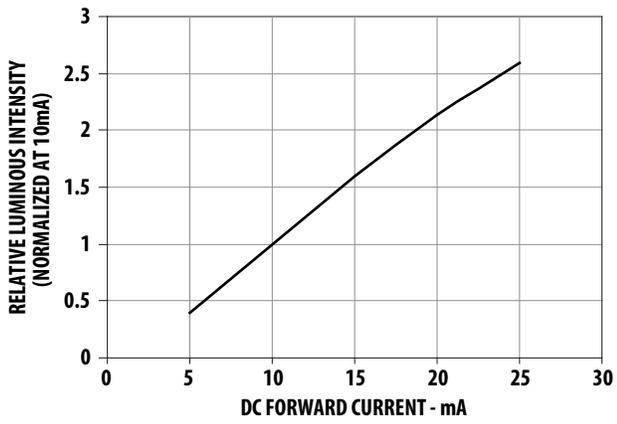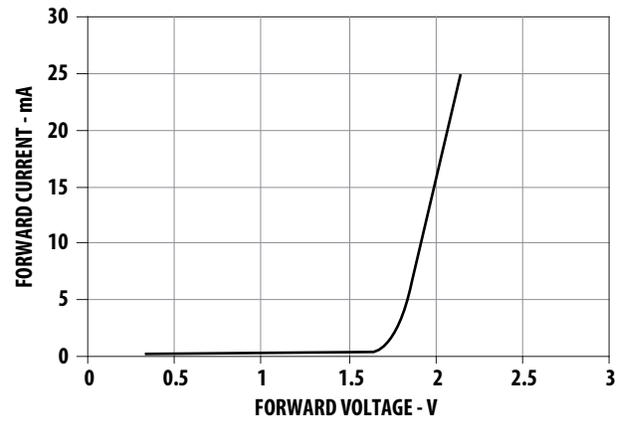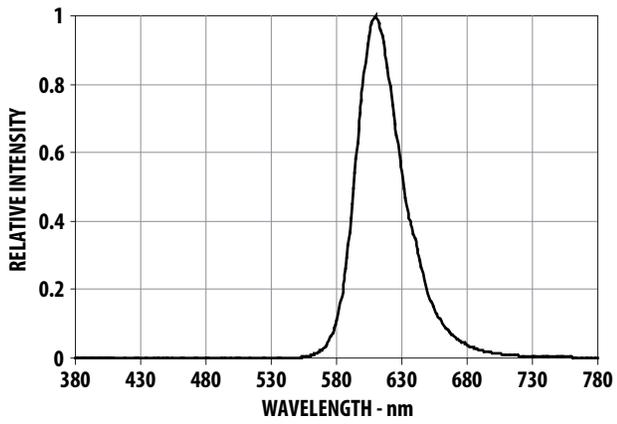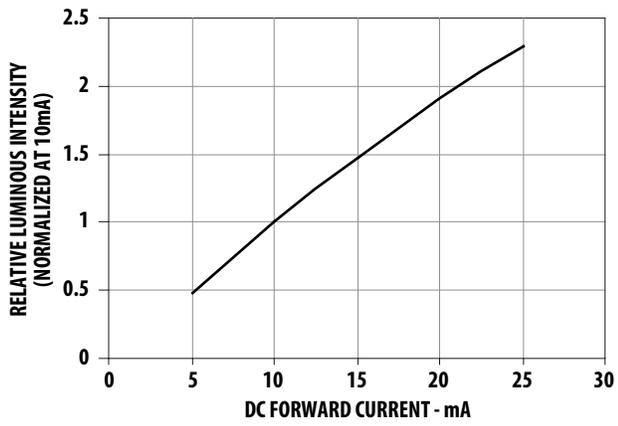

Figure 8. Forward Voltage Vs Current

Figure 9. Relative Luminous Intensity Vs Wavelength

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Orange

Figure 10. Relative Luminous Intensity Vs Forward Current

Figure 11. Forward Voltage Vs Current

Figure 12. Relative Luminous Intensity Vs Wavelength

AlGaAs Red

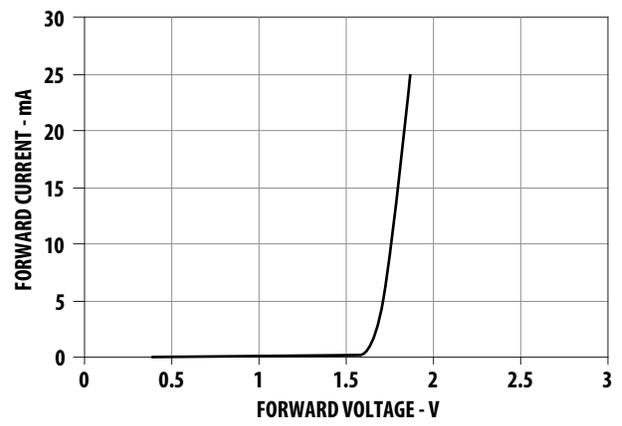Figure 13. Relative Luminous Intensity Vs Forward Current
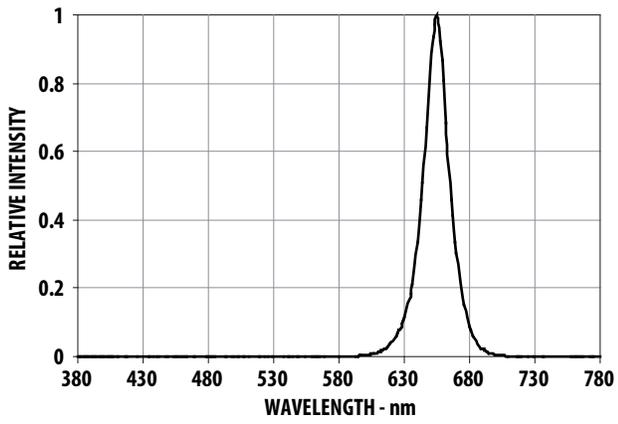

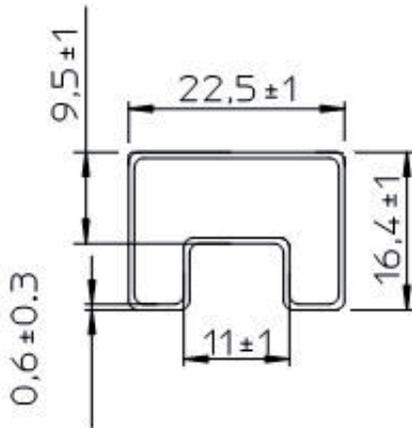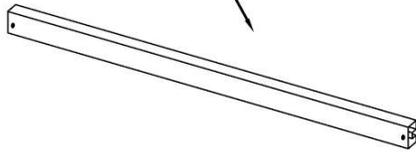Figure 14. Forward Voltage Vs Current

Figure 15. Relative Luminous Intensity Vs Wavelength

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Packing Tube Specifications:

25 PCS PRODUCTS PER IC TUBE

Tube Front View   Tube Top View

Reference

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

AVAGO
T E C H N O L O G I E S

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