# **HDSP-A2xC Series**

Alphanumeric Display, 0.54" (13.7 mm) 2 Character As AllnGaP Red

## **Data Sheet**

#### Description

These 0.54" (13.7 mm) AS AlInGaP displays are available in either common anode or common cathode.

#### Devices

As AllnGaP Red	Description		
HDSP-A22C	Common Anode		
HDSP-A27C	Common Cathode		

#### Features

- · As AllnGaP red color
- · Gray face paint Gray package gives optimum contrast
- · Design flexibility Common anode or common cathode

#### Applications

- Suitable for alphanumeric
- Operating temperature range -40°C to 105°C

#### **Package Dimensions**









Pin	Pin Configuration A Common Anode	Pin Configuration B Common Cathode	
1	1E/2E Cathode	1E/2E Anode	
2	1M/2M Cathode	1M/2M Anode	
3	No Connection	No Connection	
4	1L/2L Cathode	1L/2L Anode	
5	1K/2K Cathode	1K/2K Anode	
6	1J/2J Cathode	1J/2J Anode	
7	1D/2D Cathode	1D/2D Anode	
8	DP1 Cathode	DP1 Anode	
9	1C/2C Cathode	1C/2C Anode	
10	1B/2B Cathode	1B/2B Anode	
11	DIGIT No. 2 Common Anode	DIGIT No. 2 Common Cathode	
12	1A/2A Cathode	1A/2A Anode	
13	1N/2N Cathode	1N/2N Anode	
14	1H/2H Cathode	1H/2H Anode	
15	1G/2G Cathode	1G/2G Anode	
16	DIGIT No. 1 Common Anode	DIGIT No. 1 Common Cathode	
17	1P/2P Cathode	1P/2P Anode	
18	1F/2F Cathode	1F/2F Anode	

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

Parameter	Symbol	HDSP-A22C/HDSP-A27C	Units
DC Forward Current per Segment or DP <sup>[1,2,3]</sup>	IF	50	mA
Peak Forward Current per Segment or DP <sup>[2,3]</sup>	IPEAK	100	mA
Average Forward Current <sup>[3]</sup>	I <sub>AVE</sub>	30	mA
Reverse Voltage per Segment or DP ( $I_R = 100 \ \mu A$ )	V <sub>R</sub>	5	V
Operating Temperature	T <sub>0</sub>	-40 to +105	°C
Storage Temperature	Ts	-40 to +120	°C
Wavesoldering Conditions	Temperature	250	°C
	Time	3	S

Notes:

Derate linearly as shown in Figure 1.
For long term performance with minimal light output degradation, drive currents between 10 mA and 30 mA are recommended. For more information on recommended drive conditions, please refer to Application Brief I-024 (5966-3087E).
Operating at currents below 1 mA is not recommended. Please contact your local representative for further information.

Device Series HDSP-	Parameter	Symbol	Min.	Тур.	Max.	Units	Test Conditions
-							
A22C	Forward Voltage	ly	1.70	1.90	2.20	V	$I_{\rm F} = 20  {\rm mA}$
A27C	Reverse Voltage	V <sub>R</sub>	5	20		V	I <sub>F</sub> = 100 μA
	Peak Wavelength	λρεακ		635		nm	Peak Wavelength of Spectral Distri- bution at I <sub>F</sub> = 20 mA
	Dominant Wavelength <sup>[3]</sup>	$\lambda_{d}$	622.5	626	630	nm	
	Spectral Halfwidth	Δλ <sub>1/2</sub>		17		nm	Wavelength Width at Spectral Distri- bution 1/2 Power Point at I <sub>F</sub> = 20 mA
	Speed of Response	$\tau_{s}$		20		ns	Exponential Time Constant, e <sup>-tτs</sup>
	Capacitance	С		40		pF	$V_F = 0$ , f = 1 MHz

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

### Intensity Bin Limits<sup>[1]</sup> (mcd at 10 mA)

Bin Name	Min. <sup>[2]</sup>	Max. <sup>[2]</sup>
Т	18.0	25.0
U	25.0	36.0

#### Notes:

1. Bin categories are established for classification of products. Products may not be available in all bin categories.

2. Tolerance for each bin limit is  $\pm$  10%.



Figure 1. Maximum forward current vs. ambient temperature. Derating based on  $T_{JMAX} = 130$  °C.



Figure 2. Forward current vs. forwrad voltage.

Contrast Enhancement For information on contrast enhancement, please see Application Note 1015.

#### Soldering/Cleaning

Cleaning agents from ketone family (acetone, methyl ethyl ketone, etc.) and from the chlorinated hydrocarbon family (methylene chloride, trichloroethylene, carbon tetrachloride, etc.) are not recommended for cleaning LED parts. All of these various solvents attack or dissolve the encapsulating epoxies used to form the package of plastic LED parts.

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

For product information and a complete list of distributors, please go to our website: WW

www.avagotech.com

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