

# Agilent HDSP-A22G, HDSP-A27G Alphanumeric Display, 0.54" (13.7 mm) 2 Character GaP Green Data Sheet



## Description

These 0.54" (13.7 mm) Dual Digit GaP green displays are available in common anode and common cathode.

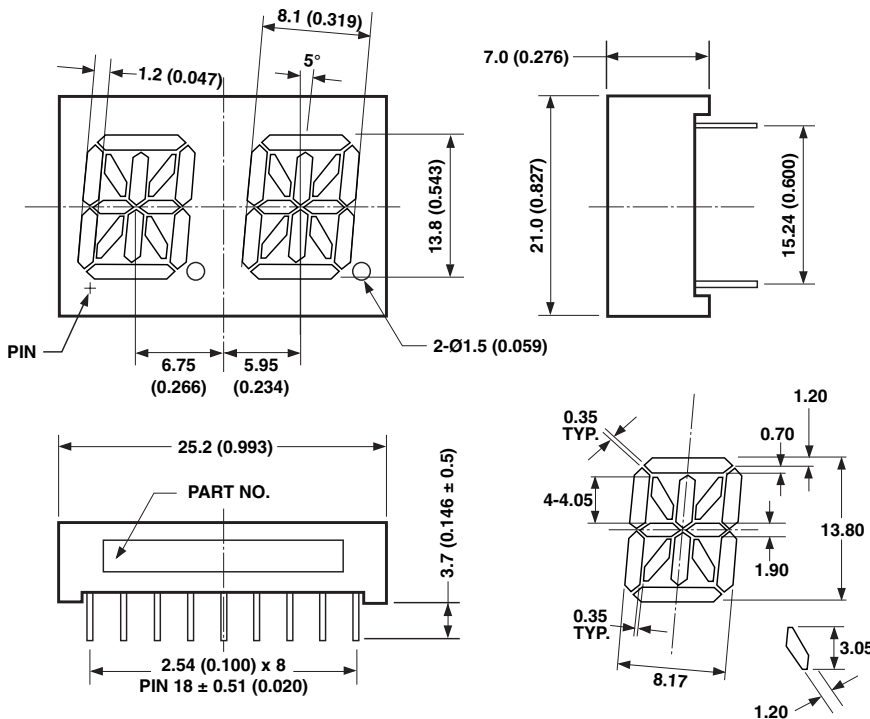
## Devices

GaP Green	Description
HDSP-A22G	Common Anode
HDSP-A27G	Common Cathode

## Features

- High reliability
- GaP green color
- Gray face paint
- Excellent appearance
  - evenly lighted segments
  - gray package gives optimum contrast
  - $\pm 50^\circ$  viewing angle
- Categorized for luminous intensity  
Green categorized for color
- Easy assembly

## Package Dimensions



## Applications

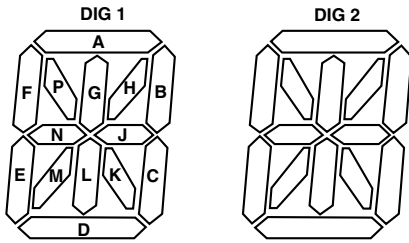
- Suitable for indoor use
- Not recommended for industrial application, i.e., operating temperature requirements exceeding  $85^\circ\text{C}$  or below  $-25^\circ\text{C}$ <sup>[1]</sup>
- Extreme temperature cycling not recommended

## Note:

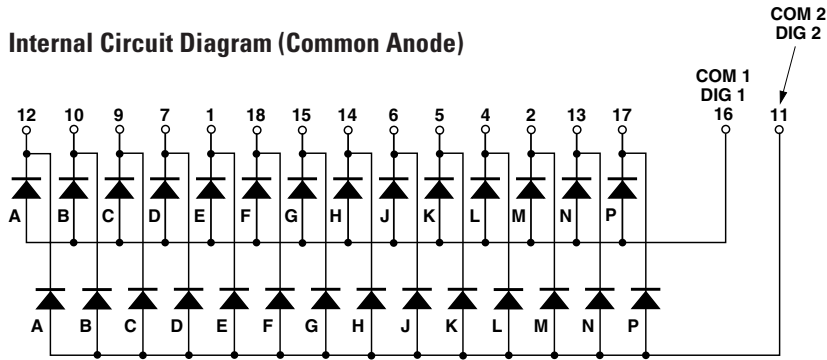
1. For additional details, please contact your local Agilent sales office or an authorized distributor.

- NOTES:  
 1. ALL DIMENSIONS IN MILLIMETERS (INCHES).  
 2. UNLESS OTHERWISE STATED, TOLERANCE IS  $\pm 0.25$  mm.

## Internal Circuit Diagram

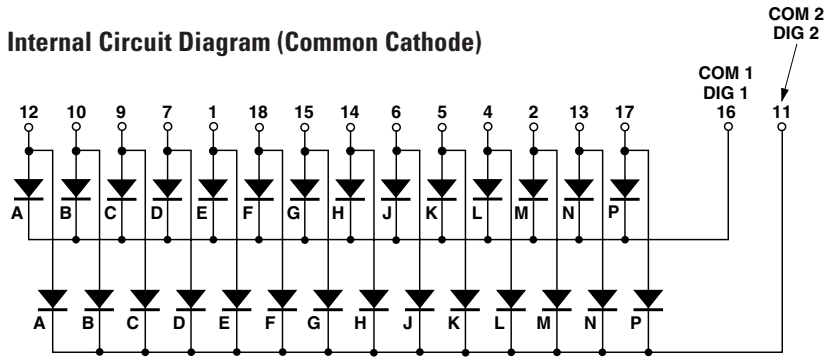


## Internal Circuit Diagram (Common Anode)



NOTE:  
PINS 3, 8 NO CONNECTION

## Internal Circuit Diagram (Common Cathode)



NOTE:  
PINS 3, 8 NO CONNECTION

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

### Absolute Maximum Ratings at T<sub>A</sub> = 25°C

Parameter	GaP Green	Units
Power Dissipation Segment	52	mW
Forward Current Segment	20 <sup>[1]</sup>	mA
Peak Forward Current Per Segment (1/10 Duty Factor at 10 KHz)	100	mA
Operating Temperature Range	-35 to +85	°C
Storage Temperature Range	-35 to +85	°C
Reverse Voltage per Segment or DP	5	V
Wavesoldering Temperature for 3 Seconds (at 2 mm Distance from The Body)	250	°C

**Note:**

1. Derate above 25°C at 0.33 mA/°C.

### Electrical/Optical Characteristics at T<sub>A</sub> = 25°C Green

Devices	Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
HDSP-  A22G/A27G	Luminous Intensity/Segment	I <sub>V</sub>	3.20	5.05		mcd	I <sub>F</sub> = 10 mA
	Forward Voltage	V <sub>F</sub>	1.80	2.25	2.60	V	I <sub>F</sub> = 20 mA
	Peak Wavelength	λ <sub>PEAK</sub>		568		nm	
	Dominant Wavelength	λ <sub>d</sub>		573		nm	
	Reverse Voltage	V <sub>R</sub>		5		V	I <sub>R</sub> = 100 μA

#### Intensity Bin Limits (mcd @ 10 mA)

Bin Name	Green	
	Min. <sup>[1]</sup>	Max. <sup>[1]</sup>
L	3.201	5.050
M	5.051	8.000

**Notes:**

- Bin categories are established for classification of products. Products may not be available in all bin categories.
- Tolerance for each bin limit is ± 10%.

#### Color Bin Limits (nm @ 10 mA)

Color	Bin	Dominant Wavelength (nm)	
		Min. <sup>[1]</sup>	Max. <sup>[1]</sup>
Green	2	573.5	576.5
	3	570.5	573.5

**Notes:**

- Bin categories are established for classification of products. Products may not be available in all bin categories.
- Tolerance for each bin limit is ± 1 nm.

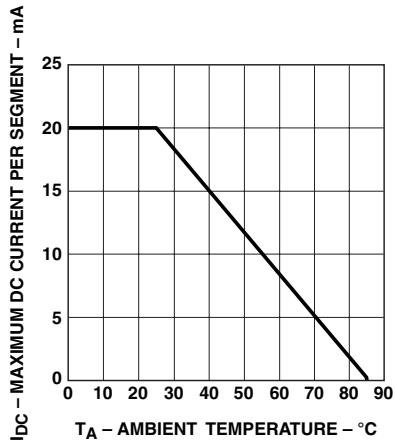


Figure 1. Maximum allowable average or DC current vs. ambient temperature.

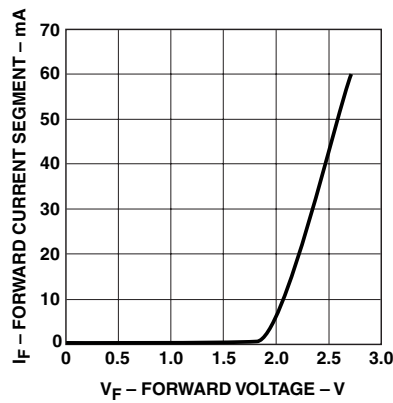


Figure 2. Forward current vs. forward voltage.

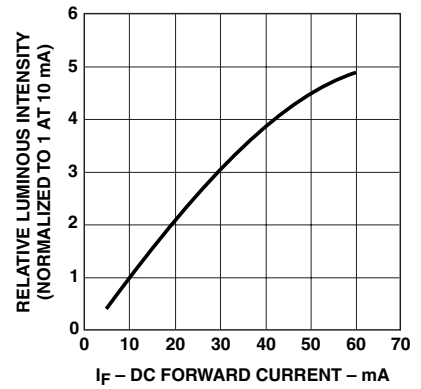


Figure 3. Relative luminous intensity vs. DC forward current.

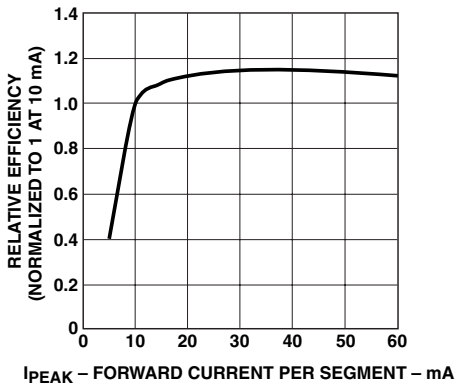


Figure 4. Relative efficiency (luminous intensity per unit current) vs. peak current.

### 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.

### [www.agilent.com/semiconductors](http://www.agilent.com/semiconductors)

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