Agilent HDSP-H571, HDSP-H573
5 x 7 General Purpose Dot Matrix Displays
53.2 mm (2.09 Inch) Package
Data Sheet

Features

- **5 x 7 Dot matrix**
  - Dot diameter 5.0 mm
  - Dot pitch 7.62 mm
- **High Efficiency Red (HER)**
- **Black face paint**

Description

This display comprises 7 rows by 5 columns of 5.0 mm diameter dots on a pitch of 7.62 mm. The device is available in common row cathode and common row anode configurations. The displays come in black face paint. Each dot has high efficiency red.

Device Selection Guide

	Description
HDSP-H571	Common Row Anode
HDSP-H573	Common Row Cathode

Part Numbering System

HDSP - X X X X

Device Configuration/Color[1]
1: Common Row Anode
3: Common Row Cathode

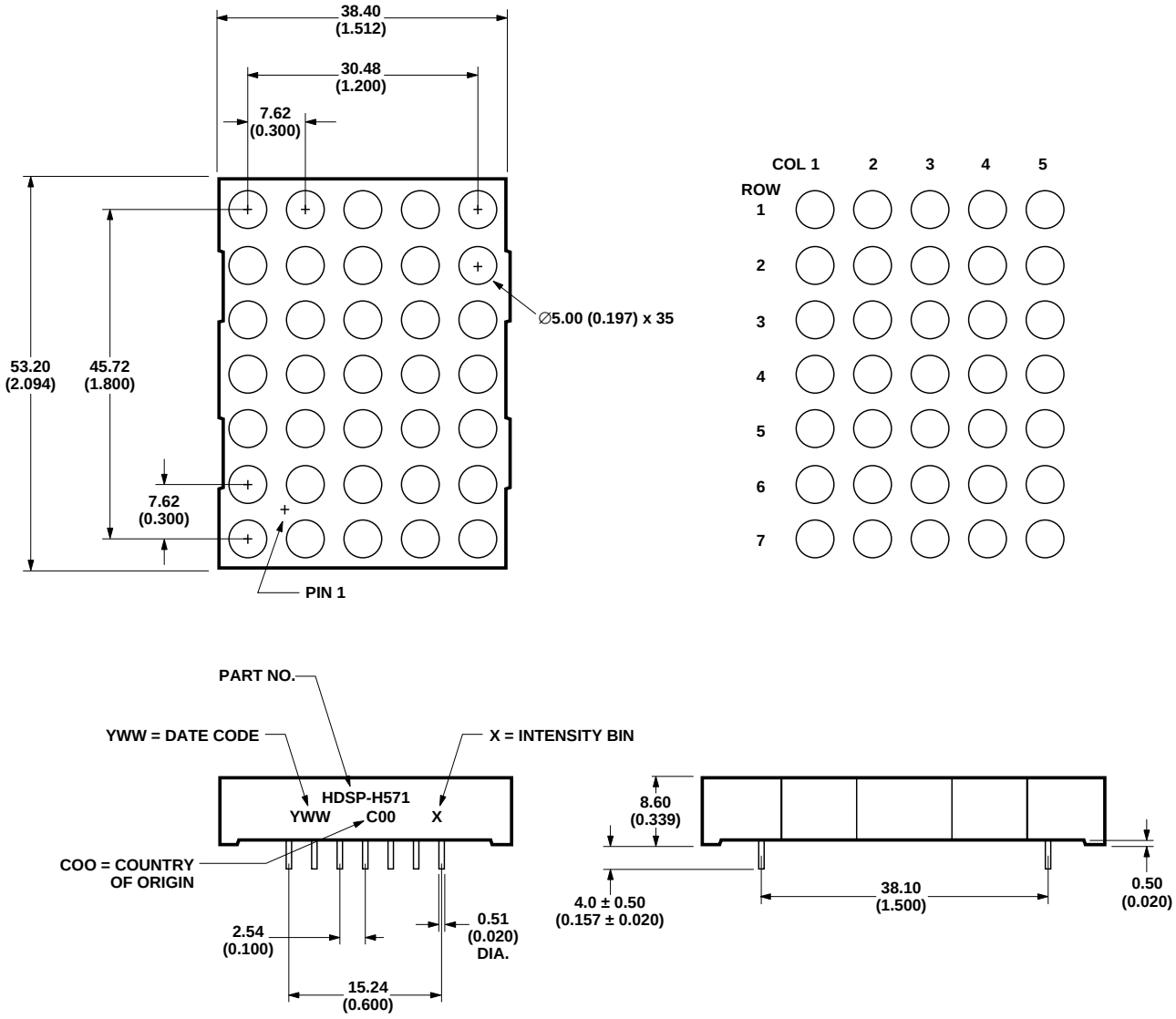
Character Height/Device Configuration[1]
7: 2.0 to 2.99 inch Height, Common Row Cathode
(for HDSP-Sxxx and Mxxx Series only)

Package Configuration[1]
5: 5 x 7 Dot Matrix

Package Type/Color[1]
Refer to Respective Datasheet

Note:
1. For codes not listed in the figure above, please refer to the respective datasheet or contact your nearest Agilent representative for details.

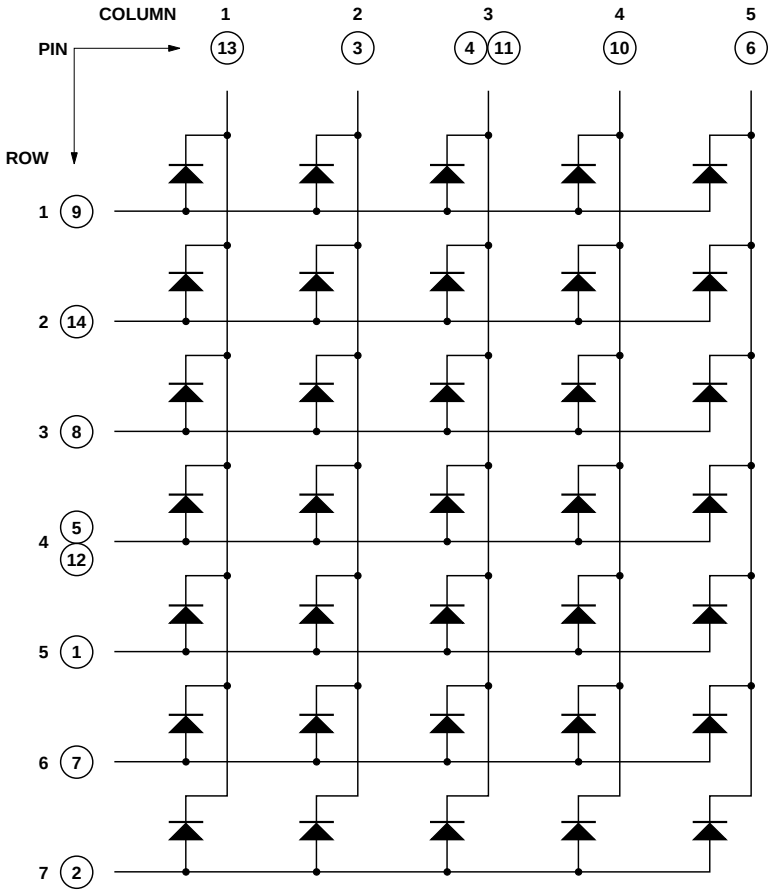
Package Dimensions



NOTES:
1. DIMENSIONS IN MILLIMETERS (INCHES).
2. UNLESS OTHERWISE STATED, TOLERANCE IS ± 0.25 mm.

Internal Circuit Diagram

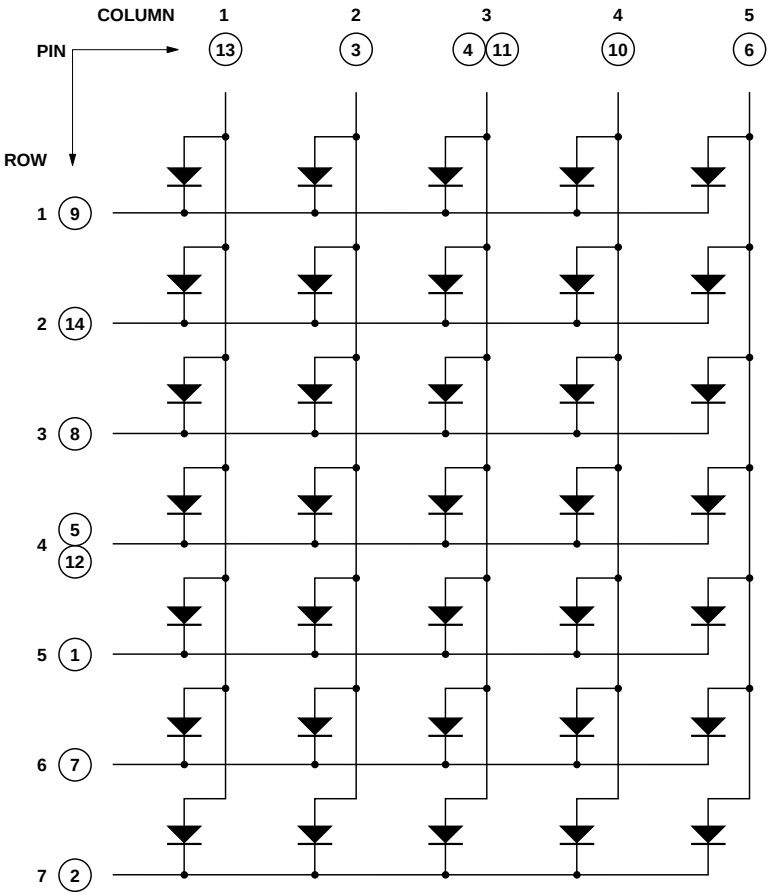
Common Row Anode



PIN NO.	FUNCTION
1	ROW 5 ANODE
2	ROW 7 ANODE
3	COLUMN 2 CATHODE
4	COLUMN 3 CATHODE
5	ROW 4 ANODE
6	COLUMN 5 CATHODE
7	ROW 6 ANODE
8	ROW 3 ANODE
9	ROW 1 ANODE
10	COLUMN 4 CATHODE
11	COLUMN 3 CATHODE
12	ROW 4 ANODE
13	COLUMN 1 CATHODE
14	ROW 2 ANODE

Internal Circuit Diagram

Common Row Cathode



PIN NO.	FUNCTION
1	ROW 5 CATHODE
2	ROW 7 CATHODE
3	COLUMN 2 ANODE
4	COLUMN 3 ANODE
5	ROW 4 CATHODE
6	COLUMN 5 ANODE
7	ROW 6 CATHODE
8	ROW 3 CATHODE
9	ROW 1 CATHODE
10	COLUMN 4 ANODE
11	COLUMN 3 ANODE
12	ROW 4 CATHODE
13	COLUMN 1 ANODE
14	ROW 2 CATHODE

Absolute Maximum Ratings at T_A = 25°C

Parameter	Symbol	High Efficiency Red (HER)	Units
Power Dissipation per Dot	P_D	60	mW
Peak Forward Current per Dot	I_{PEAK}	80	mA
Average Forward Current per Dot	I_F AVG	25[1]	mA
Reverse Voltage per Dot	V_R	5	V
Operating Temperature	T_O	–40 to +85	°C
Storage Temperature	T_s	–40 to +85	°C
Soldering Conditions	Temperature	260	°C
(2 mm [0.079 in.] below seating plane)	Time	3	s

Note:
1. Derate above 50°C at 0.36 mA/°C.

Optical/Electrical Characteristics at T_A = 25°C

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Forward Voltage	V_F		2.1	2.6	V	I_F = 20 mA
Reverse Voltage per Dot	V_R	5.0			V	I_R = 100 μA
Intensity per Dot	I_v	2.20	3.30		mcd	I_{FP} = 40 mA, 1/8 Duty
Peak Wavelength	λ_P		632		nm	I_F = 20 mA
Dominant Wavelength	λ_D		622		nm	I_F = 20 mA
Spectral Line Half Wavelength	$\Delta\lambda$		40		nm	I_F = 20 mA
Thermal Resistance LED Junction-to-Pin	$R\theta_{J\text{-}PIN}$		320		°C/W/Dot	

Notes:
1. The digits are categorized for luminous intensity. The intensity category is designated by a letter on the side of the package.
2. Typical specification for reference only. Do not exceed absolute maximum ratings.

Intensity Bin Limits (I_{FP} = 40 mA at 1/8 Duty Factor)

Bin	I_V, Min. (mcd)	I_V, Max. (mcd)
G	2.20	3.30
H	3.31	4.97

Tolerance of each minimum and maximum = ±15%.

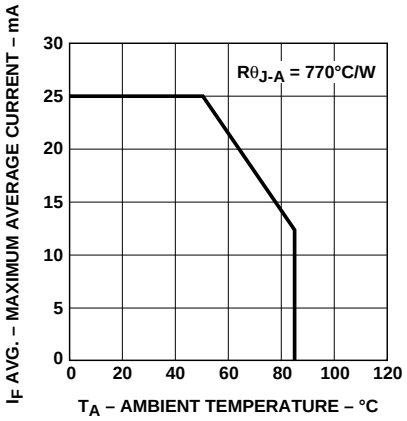


Figure 1. Maximum allowable average current per dot vs. ambient temperature.

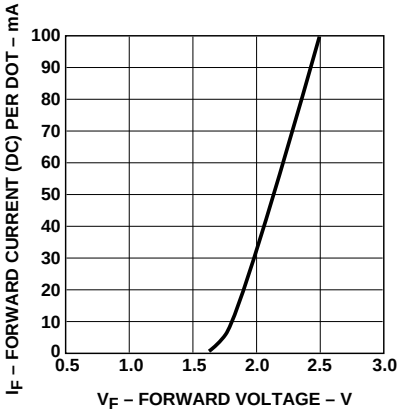


Figure 2. Forward current (DC) vs. forward voltage.

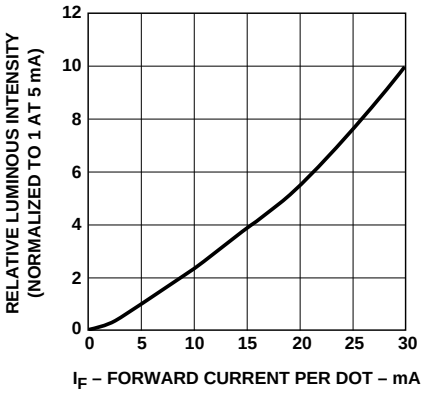


Figure 3. Relative luminous intensity vs. DC forward current.

Contrast Enhancement

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

Soldering/Cleaning

Cleaning agents from the 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 and Application Note 1060.

Device Reliability

For reliability information, please see the reliability data sheet *5 x 7 Bi-Color General Purpose Dot Matrix Displays*.

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Data subject to change.
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