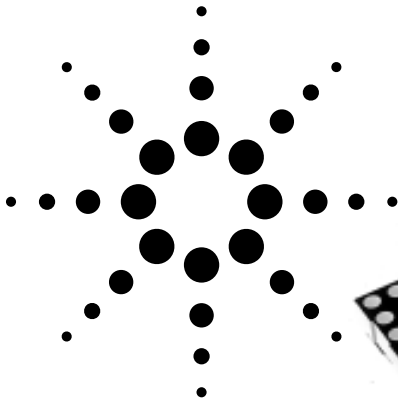


Agilent HDSP-B571/B573 Dot Matrix Displays Data Sheet



Features

- 5 x 7 dot matrix
- Dot diameter 5.0 mm
- Dot pitch 7.62 mm
- Bi-color capability
- Choice of two colors
Green
High Efficiency Red (HER)
- Black face paint

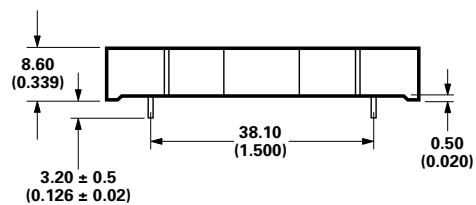
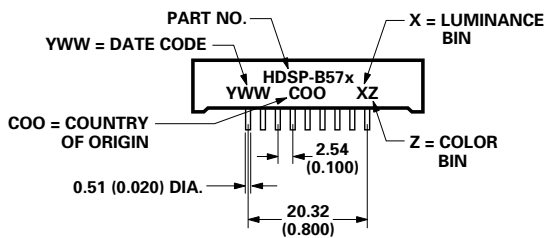
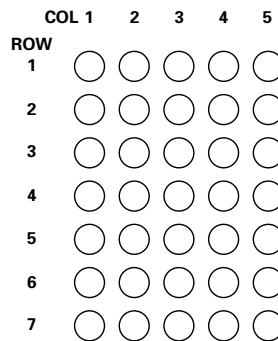
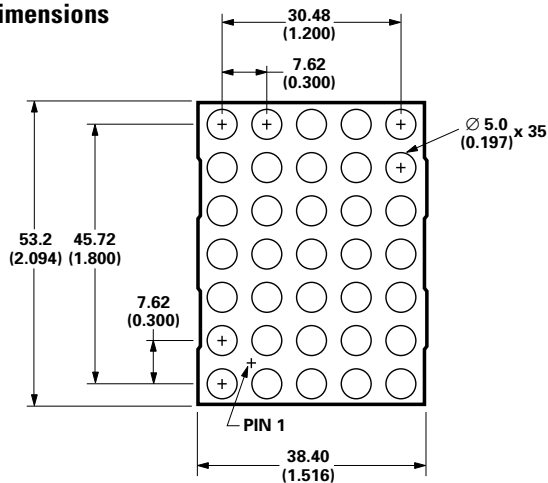
5 x 7 Bi-Color General Purpose Dot Matrix Displays 53.2 mm (2.09 inch) Package

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 (HER) and green colors.

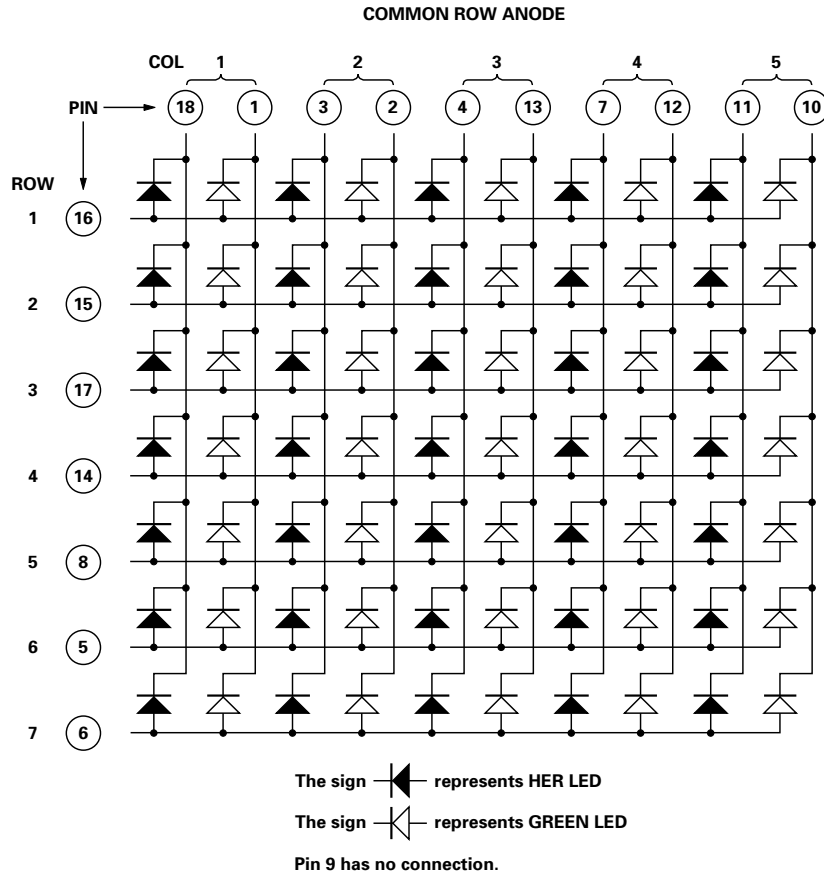
Package Dimensions



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

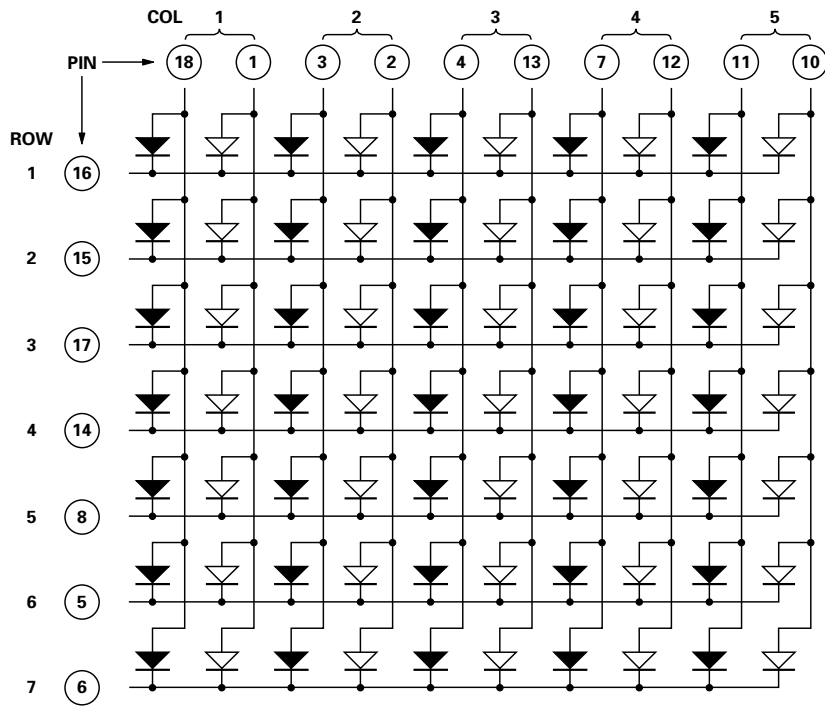
Device Selection Guide

	Description
HDSP-B571	Common Row Anode
HDSP-B573	Common Row Cathode



PIN	FUNCTION	PIN	FUNCTION
1	COLUMN 1 GREEN CATHODE	10	COLUMN 5 GREEN CATHODE
2	COLUMN 2 GREEN CATHODE	11	COLUMN 5 HER CATHODE
3	COLUMN 2 HER CATHODE	12	COLUMN 4 GREEN CATHODE
4	COLUMN 3 HER CATHODE	13	COLUMN 3 GREEN CATHODE
5	ROW 6 ANODE	14	ROW 4 ANODE
6	ROW 7 ANODE	15	ROW 2 ANODE
7	COLUMN 4 HER CATHODE	16	ROW 1 ANODE
8	ROW 5 ANODE	17	ROW 3 ANODE
9	NO CONNECTION	18	COLUMN 1 HER CATHODE

COMMON ROW CATHODE



The sign  represents HER LED

The sign  represents GREEN LED

Pin 9 has no connection.

PIN	FUNCTION	PIN	FUNCTION
1	COLUMN 1 GREEN ANODE	10	COLUMN 5 GREEN ANODE
2	COLUMN 2 GREEN ANODE	11	COLUMN 5 HER ANODE
3	COLUMN 2 HER ANODE	12	COLUMN 4 GREEN ANODE
4	COLUMN 3 HER ANODE	13	COLUMN 3 GREEN ANODE
5	ROW 6 CATHODE	14	ROW 4 CATHODE
6	ROW 7 CATHODE	15	ROW 2 CATHODE
7	COLUMN 4 HER ANODE	16	ROW 1 CATHODE
8	ROW 5 CATHODE	17	ROW 3 CATHODE
9	NO CONNECTION	18	COLUMN 1 HER ANODE

Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$

Parameter	Symbol	Green	High Efficiency Red (HER)	Units
Power Dissipation per Dot	P_D	65	65	mW
Peak Forward Current per Dot ^[1, 2]	I_{PEAK}	80	80	mA
Average Forward Current per Dot	$I_F \text{ AVG}$	25 ^[3]	25 ^[4]	mA
Reverse Voltage per Dot	V_R	5	5	V
Operating Temperature	T_O	-35 to +85	-35 to +85	$^\circ\text{C}$
Storage Temperature	T_S	-35 to +85	-35 to +85	$^\circ\text{C}$
Soldering Conditions (2 mm [0.079 in.] below seating plane)	Temperature	260	260	$^\circ\text{C}$
	Time	3	3	s

Notes:

1. Do not exceed maximum average current per dot.
2. Maximum peak forward current stated at 1/8 duty factor, 10 kHz.
3. Derate above 25°C at $0.33 \text{ mA}/^\circ\text{C}$ for green color.
4. Derate above 25°C at $0.20 \text{ mA}/^\circ\text{C}$ for high efficiency red color.

Optical/Electrical Characteristics

$T_A = 25^\circ\text{C}$

Parameter	Symbol	Color	Min.	Typ.	Max.	Units	Test Conditions
Forward Voltage per Dot	V_F	Green	1.8	2.25	2.6	V	$I_F = 20 \text{ mA}$
		HER		2.05	2.6		
Reverse Current per Dot	I_R	Green			100	μA	$V_R = 5 \text{ V}$
		HER			100		
Luminance per Dot ^[1]	I_V	Green		130		Cd/m^2	$I_{FP} = 40 \text{ mA}$ 1/8 Duty Factor
		HER		130			
Peak Wavelength per Dot	λ_P	Green		568		nm	$I_F = 20 \text{ mA}$
		HER		632			
Dominant Wavelength per Dot ^[2]	λ_D	Green		573		nm	$I_F = 20 \text{ mA}$
		HER		622			
Spectral Line Half Width per Dot	$\Delta\lambda$	Green		30		nm	$I_F = 20 \text{ mA}$
		HER		35			

Notes:

1) Units to be binned into the following Luminance bins:

Both Green and High Efficiency Red (HER) are lighted
 Green: $I_F = 40 \text{ mA}$ at 1/8 Duty Factor
 HER: $I_F = 40 \text{ mA}$ at 1/8 Duty Factor

Bin	Min. (cd/m ² or nit)	Max. (cd/m ² or nit)
F	86.0	104.0
G	104.0	124.0
H	124.0	149.0
I	149.0	179.0
J	179.0	215.0

2) Units to be binned into the following color coordinate bins below.
 (Based on CIE 1931 Chromaticity Coordinates.)

Bin	Color Coordinates	
	X	Y
4	0.542 to 0.553	0.445 to 0.456
5	0.552 to 0.563	0.435 to 0.446
6	0.562 to 0.573	0.425 to 0.436
7	0.572 to 0.583	0.415 to 0.426
8	0.582 to 0.593	0.405 to 0.416

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.

Device Reliability

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

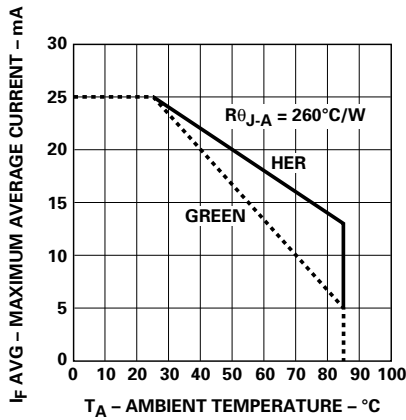


Figure 1. Maximum Allowable Average Current per Dot vs. Ambient Temperature.

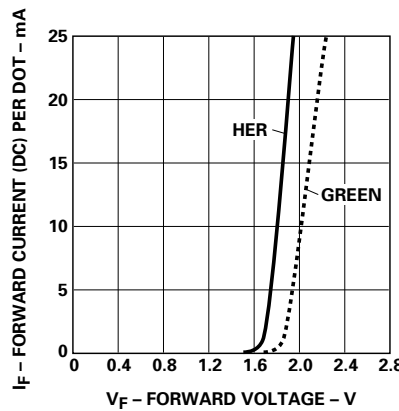


Figure 2. Forward Current (DC) vs. Forward Voltage.

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