

7.6 mm (0.3 inch)/10.9 mm (0.43 inch) Seven Segment Displays

Technical Data

- 5082-761X Series
- 5082-762X Series
- 5082-765X Series
- 5082-766X Series
- 5082-773X Series
- 5082-7740**
- 5082-775X Series
- 5082-7760
- HDSP-360X Series
- HDSP-460X Series
- HDSP-E15X Series

Features

- **Industry Standard Size**
- **Industry Standard Pinout**
7.62 mm (0.300 inch) DIP
Leads on 2.54 mm (0.100 inch) Centers
- **Choice of Colors**
Red, AlGaAs Red, High Efficiency Red, Yellow, Green
- **Excellent Appearance**
Evenly Lighted Segments
Gray Package Gives Optimum Contrast
 $\pm 50^\circ$ Viewing Angle
- **Design Flexibility**
Common Anode or Common Cathode
Single Digits
Left or Right Hand Decimal Point
 ± 1 . Overflow Character
- **Categorized for Luminous Intensity**
Yellow and Green Categorized for Color
Use of Like Categories Yields a Uniform Display
- **High Light Output**
- **High Peak Current**
- **Excellent for Long Digit String Multiplexing**
- **Intensity and Color Selection Available**
See Intensity and Color Selected Displays Data Sheet
- **Sunlight Viewable AlGaAs**



segment displays are designed for viewing distances up to 3 metres (10 feet) and 5 metres (16 feet). These devices use an industry standard size package and pinouts. All devices are available as either common anode or common cathode.

Description

The 7.6 mm (0.3 inch) and 10.9 mm (0.43 inch) LED seven

Devices

Red 5082-	AlGaAs ^[1] Red HDSP-	HER ^[1] 5082-	Yellow 5082-	Green HDSP-	Description	Package Drawing
7730		7610	7620	3600	7.6 mm Common Anode Left Hand Decimal	A
7731		7611	7621	3601	7.6 mm Common Anode Right Hand Decimal	B
7740		7613	7623	3603	7.6 mm Common Cathode Right Hand Decimal	C
7736		7616	7626	3606	7.6 mm Universal ± 1 . Overflow Right Hand Decimal ^[2]	D
7750	E150	7650	7660	4600	10.9 mm Common Anode Left Hand Decimal	E
7751	E151	7651	7661	4601	10.9 mm Common Anode Right Hand Decimal	F
7760	E153	7653	7663	4603	10.9 mm Common Cathode Right Hand Decimal	G
7756	E156	7656	7666	4606	10.9 mm Universal ± 1 . Overflow Right Hand Decimal ^[2]	H

Notes:

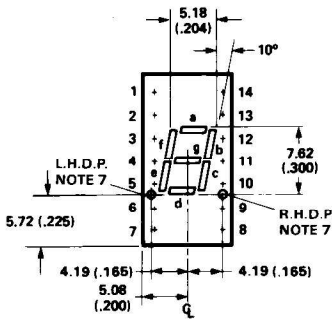
1. These displays are recommended for high ambient light operation. Please refer to the HDSP-E10X AlGaAs and HDSP-335X HER data sheet for low current operation.
2. Universal pinout brings the anode and cathode of each segment's LED out to separate pins. See internal diagram D.
3. Universal pinout brings the anode and cathode of each segment's LED out to separate pins. See internal diagram H.

These displays are ideal for most applications. Pin for pin equivalent displays are also available in a low current or high light

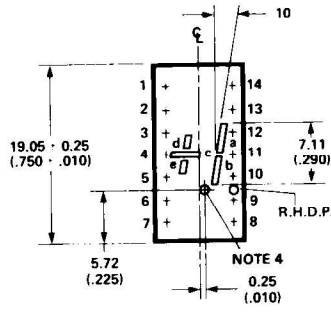
ambient design. The low current displays are ideal for portable applications. The high light ambient displays are ideal for high light ambients or long string

lengths. For additional information see the Low Current Seven Segment Displays, or High Light Ambient Seven Segment Displays data sheets.

Package Dimensions

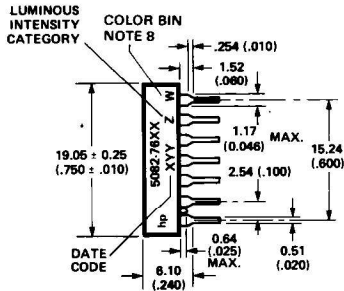


A,B,C

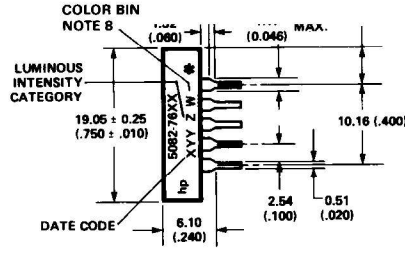


D

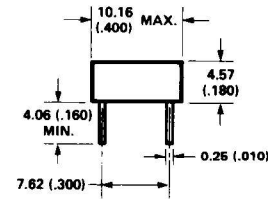
PIN	FUNCTION			
	A	B	C	D
1	CATHODE-a	CATHODE-a	NO PIN	ANODE-d
2	CATHODE-f	CATHODE-f	CATHODE ⁽¹⁾	NO PIN
3	ANODE ⁽²⁾	ANODE ⁽²⁾	ANODE-f	CATHODE-d
4	NO PIN	NO PIN	ANODE-g	CATHODE-c
5	NO PIN	NO PIN	ANODE-e	CATHODE-e
6	CATHODE-dp	NO CONN. ⁽³⁾	ANODE-d	ANODE-e
7	CATHODE-e	CATHODE-e	NO PIN	ANODE-c
8	CATHODE-d	CATHODE-d	NO PIN	ANODE-dp
9	NO CONN. ⁽³⁾	CATHODE-dp	CATHODE ⁽¹⁾	NO PIN
10	CATHODE-c	CATHODE-c	ANODE-dp	CATHODE-dp
11	CATHODE-g	CATHODE-g	ANODE-c	CATHODE-b
12	NO PIN	NO PIN	ANODE-b	CATHODE-a
13	CATHODE-b	CATHODE-b	ANODE-a	ANODE-a
14	ANODE ⁽²⁾	ANODE ⁽²⁾	NO PIN	ANODE-b



A,B,D, SIDE

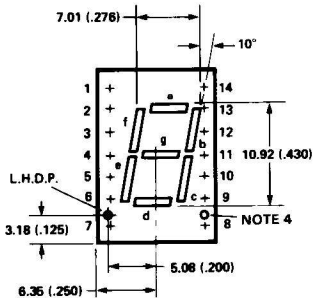


C SIDE

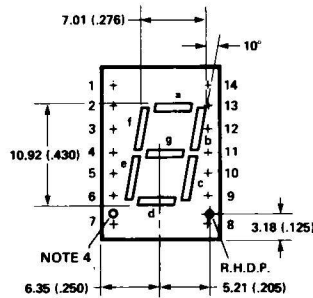


A,B,C,D END

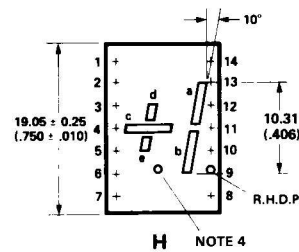
- NOTES:
1. DIMENSIONS IN MILLIMETRES AND (INCHES).
 2. ALL UNTOLERANCED DIMENSIONS ARE FOR REFERENCE ONLY.
 3. REDUNDANT ANODES.
 4. UNUSED DP POSITION.
 5. SEE INTERNAL CIRCUIT DIAGRAM.
 6. REDUNDANT CATHODE.
 7. SEE PART NUMBER TABLE FOR L.H.D.P. AND R.H.D.P. DESIGNATION.
 8. FOR YELLOW AND GREEN DEVICES ONLY.



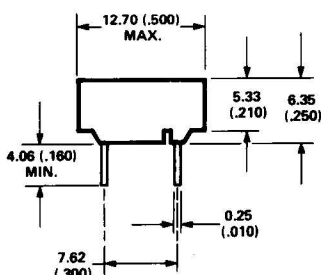
E



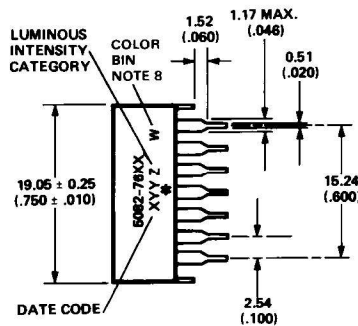
F,G FRONT VIEW



H



END VIEW



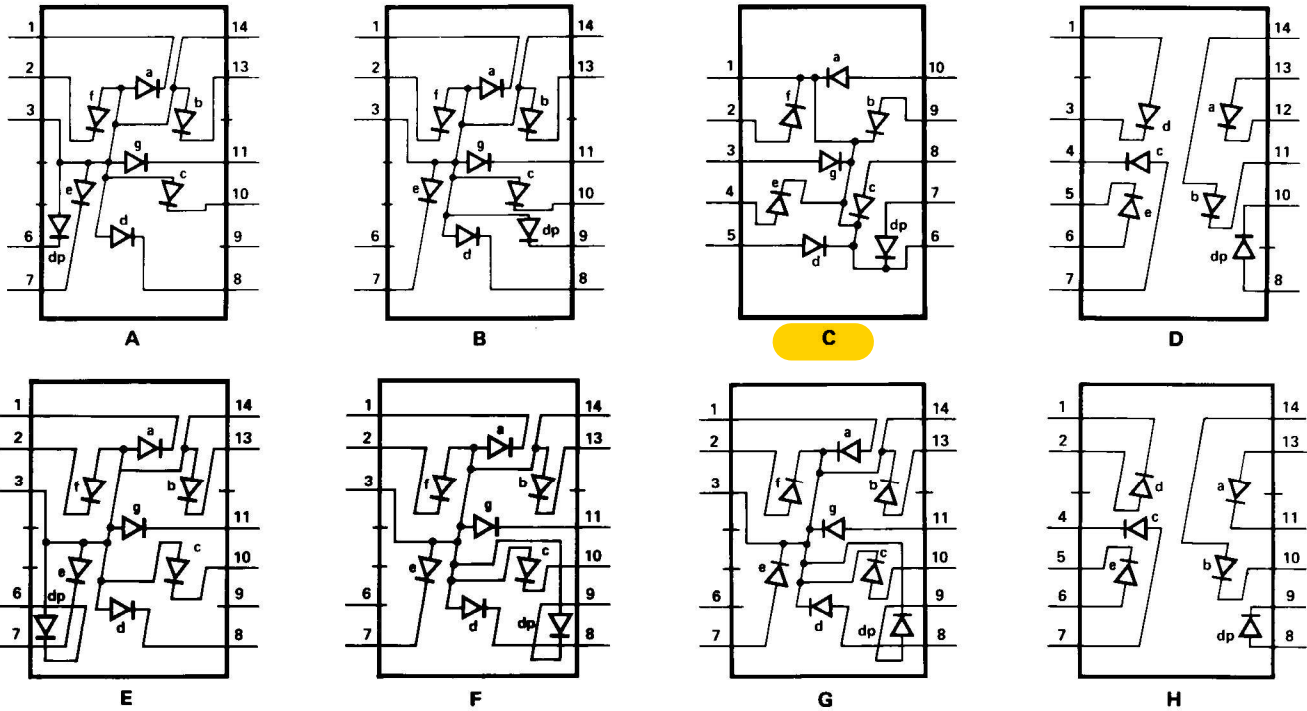
SIDE VIEW

PIN	FUNCTION			
	E	F	G	H
1	CATHODE-a	CATHODE-a	ANODE-a	CATHODE-d
2	CATHODE-f	CATHODE-f	ANODE-f	ANODE-d
3	ANODE ⁽²⁾	ANODE ⁽²⁾	CATHODE ⁽¹⁾	NO PIN
4	NO PIN	NO PIN	NO PIN	CATHODE-c
5	NO PIN	NO PIN	NO PIN	CATHODE-e
6	CATHODE-dp	NO CONN. ⁽³⁾	NO CONN. ⁽³⁾	ANODE-e
7	CATHODE-e	CATHODE-e	ANODE-e	ANODE-c
8	CATHODE-d	CATHODE-d	ANODE-d	ANODE-dp
9	NO CONN. ⁽³⁾	CATHODE-dp	ANODE-dp	CATHODE-dp
10	CATHODE-c	CATHODE-c	ANODE-c	CATHODE-b
11	CATHODE-g	CATHODE-g	ANODE-g	CATHODE-a
12	NO PIN	NO PIN	NO PIN	NO PIN
13	CATHODE-b	CATHODE-b	ANODE-b	ANODE-a
14	ANODE ⁽²⁾	ANODE ⁽²⁾	CATHODE ⁽¹⁾	ANODE-b

* The Side View of package indicates Country of Origin.

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Internal Circuit Diagram



Absolute Maximum Ratings

Description	Red 5082-7700 Series	AlGaAs Red HDSP-E150 Series	HER 5082-7610/ 7650 Series	Yellow 5082-7620/ 7660 Series	Green HDSP-3600/ 4600 Series	Units
Average Power per Segment or DP	82	96	105	80	105	mW
Peak Forward Current per Segment or DP	150 ^[1]	160 ^[3]	90 ^[5]	60 ^[7]	90 ^[9]	mA
DC Forward Current per Segment or DP	25 ^[2]	40 ^[4]	30 ^[6]	20 ^[8]	30 ^[10]	mA
Operating Temperature Range	-40 to +100	-20 to +100 ^[11]	-40 to +100			°C
Storage Temperature Range	-55 to +100					°C
Reverse Voltage per Segment or DP	3.0					V
Lead Solder Temperature for 3 Seconds (1.59 mm [0.063 in.] below seating plane)	260					°C

Notes:

- See Figure 1 to establish pulsed conditions.
- Derate above 80°C at 0.63 mA/°C.
- See Figure 2 to establish pulsed conditions.
- Derate above 46°C at 0.54 mA/°C.
- See Figure 7 to establish pulsed conditions.
- Derate above 53°C at 0.45 mA/°C.
- See Figure 8 to establish pulsed conditions.
- Derate above 81°C at 0.52 mA/°C.
- See Figure 9 to establish pulsed conditions.
- Derate above 39°C at 0.37 mA/°C.
- For operation below -20°C, contact your local HP components sales office or an authorized distributor.

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

Red

Device Series	Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
5082-773X 5082-774X	Luminous Intensity/Segment ^[1,2] (Digit Average)	I_V	360	770		μcd	$I_F = 20\text{ mA}$
5082-775X 5082-776X			360	1100		μcd	$I_F = 20\text{ mA}$
All	Forward Voltage/Segment or DP	V_F		1.6	2.0	V	$I_F = 20\text{ mA}$
	Peak Wavelength	λ_{PEAK}		655		nm	
	Dominant Wavelength ^[3]	λ_d		640		nm	
	Reverse Voltage/Segment or DP ^[4]	V_R	3.0	12		V	$I_R = 100\ \mu\text{A}$
	Temperature Coefficient of V_F /Segment or DP	$\Delta V_F/^\circ\text{C}$		-2		$\text{mV}/^\circ\text{C}$	
	Thermal Resistance LED Junction-to-Pin	$R\theta_{\text{J-PIN}}$		280		$^\circ\text{C}/\text{W}/\text{Seg}$	

AlGaAs Red

Device Series	Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
HDSP-E15X	Luminous Intensity/Segment ^[1,2,5] (Digit Average)	I_V	8.5	15.0		mcd	$I_F = 20\text{ mA}$
	Forward Voltage/Segment or DP	V_F		1.8		V	$I_F = 20\text{ mA}$
				2.0	3.0	V	$I_F = 100\text{ mA}$
	Peak Wavelength	λ_{PEAK}		645		nm	
	Dominant Wavelength ^[3]	λ_d		637		nm	
	Reverse Voltage/Segment or DP ^[4]	V_R	3.0	15		V	$I_R = 100\ \mu\text{A}$
	Temperature Coefficient of V_F /Segment or DP	$\Delta V_F/^\circ\text{C}$		-2		$\text{mV}/^\circ\text{C}$	
Thermal Resistance LED Junction-to-Pin	$R\theta_{\text{J-PIN}}$		340		$^\circ\text{C}/\text{W}/\text{Seg}$		