

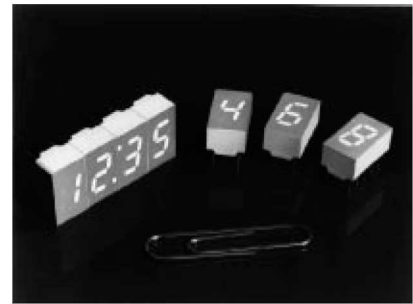
7.6 mm (0.3 inch) Micro Bright Seven Segment Displays

Technical Data

HDSP-730X Series
HDSP-731X Series
HDSP-740X Series
HDSP-750X Series
HDSP-780X Series
HDSP-A15X Series

Features

- **Available with Colon for Clock Display**
- **Compact Package**
0.300 x 0.500 inches
Leads on 2.54 mm (0.1 inch) Centers
- **Choice of Colors**
Red, AlGaAs Red, High Efficiency Red, Yellow, Green
- **Excellent Appearance**
Evenly Lighted Segments
Mitered Corners on Segments
Surface Color Gives Optimum Contrast
± 50° Viewing Angle
- **Design Flexibility**
Common Anode or Common Cathode
- **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**



Description

The 7.6 mm (0.3 inch) LED seven segment displays are designed for viewing distances up to 3 metres (10 feet). These devices use an industry standard size package and pinout. Both the numeric and

Devices

Red HDSP-	AlGaAs ^[1] HDSP-	HER ^[1] HDSP-	Yellow ^[1] HDSP-	Green ^[1] HDSP-	Description	Package Drawing
7301	A151	7501	7401	7801	Common Anode Right Hand Decimal	A
7302		7502	7402	7802	Common Anode Right Hand Decimal, Colon	B
7303	A153	7503	7403	7803	Common Cathode Right Hand Decimal	C
7304		7504	7404	7804	Common Cathode Right Hand Decimal, Colon	D
7307	A157	7507	7407	7807	Common Anode ± 1. Overflow	E
7308	A158	7508	7408	7808	Common Cathode ± 1. Overflow	F

Note:

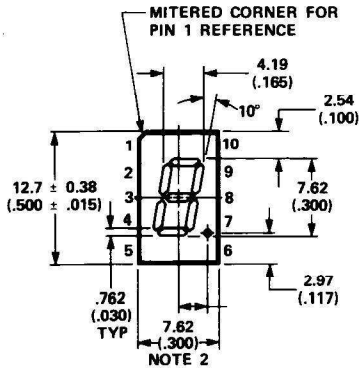
1. These displays are recommended for high ambient light operation. Please refer to the HDSP-A10X AlGaAs, HDSP-335X HER, HDSP-A80X Yellow, and HDSP-A90X Green data sheet for low current operation.

± 1. overflow devices feature a right hand decimal point. All devices are available as either common anode or common cathode.

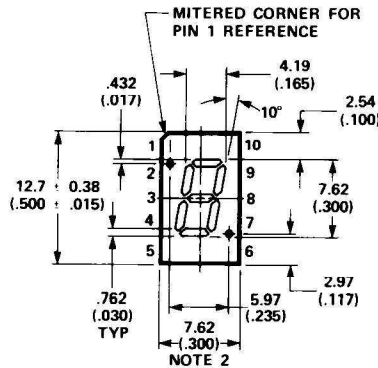
These displays are ideal for most applications. Pin for pin equivalents are also available in a low current design. The low current displays are ideal for

portable applications. For additional information see the Low Current Seven Segment Displays.

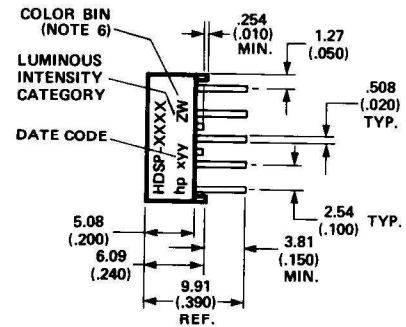
Package Dimensions



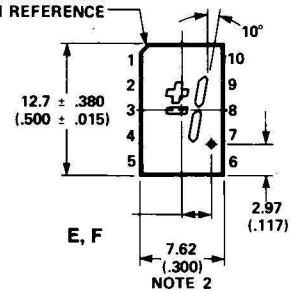
A, C



B, D



MITERED CORNER FOR PIN 1 REFERENCE

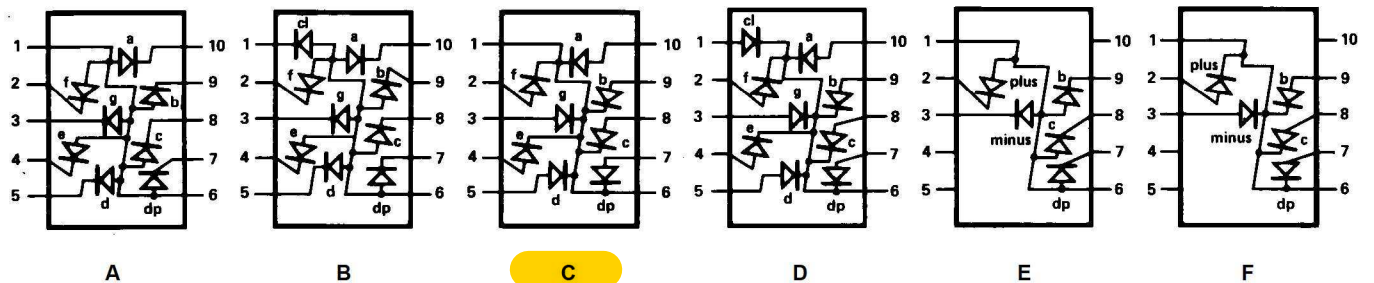


E, F

- NOTES:
 1. ALL DIMENSIONS IN MILLIMETRES (INCHES).
 2. MAXIMUM.
 3. ALL UNTOLERANCED DIMENSIONS ARE FOR REFERENCE ONLY.
 4. REDUNDANT ANODES.
 5. REDUNDANT CATHODES.
 6. FOR HDSP-7400/7800 SERIES PRODUCT ONLY.

PIN	FUNCTION					
	A	B	C	D	E	F
1	ANODE ^[4]	CATHODE COLON	CATHODE ^[5]	ANODE COLON	ANODE ^[4]	CATHODE ^[5]
2	CATHODE f	CATHODE f	ANODE f	ANODE f	CATHODE PLUS	ANODE PLUS
3	CATHODE g	CATHODE g	ANODE g	ANODE g	CATHODE MINUS	ANODE MINUS
4	CATHODE e	CATHODE e	ANODE e	ANODE e	NC	NC
5	CATHODE d	CATHODE d	ANODE d	ANODE d	NC	NC
6	ANODE ^[4]	ANODE	CATHODE ^[5]	CATHODE	ANODE ^[4]	CATHODE ^[5]
7	CATHODE DP	CATHODE DP	ANODE DP	ANODE DP	CATHODE DP	ANODE DP
8	CATHODE c	CATHODE c	ANODE c	ANODE c	CATHODE c	ANODE c
9	CATHODE b	CATHODE b	ANODE b	ANODE b	CATHODE b	ANODE b
10	CATHODE a	CATHODE a	ANODE a	ANODE a	NC	NC

Internal Circuit Diagram



Absolute Maximum Ratings

Description	Red HDSP-7300 Series	AlGaAs Red HDSP-A150 Series	HER HDSP-7500 Series	Yellow HDSP-7400 Series	Green HDSP-7800 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 (1.60 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 HDSP-	Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
730X	Luminous Intensity/Segment ^[1,2] (Digit Average)	I_v	600	1100		μcd	$I_F = 20\text{ mA}$ $I_F = 10\text{ mA}$
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	$I_R = 100\text{ mA}$
	Temperature Coefficient of V_F /Segment or DP	$\Delta V_F / ^\circ\text{C}$		-2		mV/°C	
	Thermal Resistance LED Junction-to-Pin	$R\theta_{\text{J-PIN}}$		200		°C/W/Seg	