



Device Number : DDS-411-001 REV: 1.1

## 0.43" Single Digit Displays

PART NO. : ELS-411HWB ECN :            Page: 1/5

### ■ Features :

- Industrial standard size.
- Low power consumption.
- Categorized for luminous intensity.

### ■ Applications:

- Audio equipment
- Instrument panels
- Digital read out display

### ■ Descriptions :

- The ELS-411 series is a large 10.8 mm (0.43")high seven segment display designed for viewing distances up to 7 meters.
- These displays provide excellent reliability in bright ambient light.
- These devices are made with white segments and black surface.

PART NO.	Chip	
	Material	Emitted Color
ELS-411HWB	GaP	Bright Red

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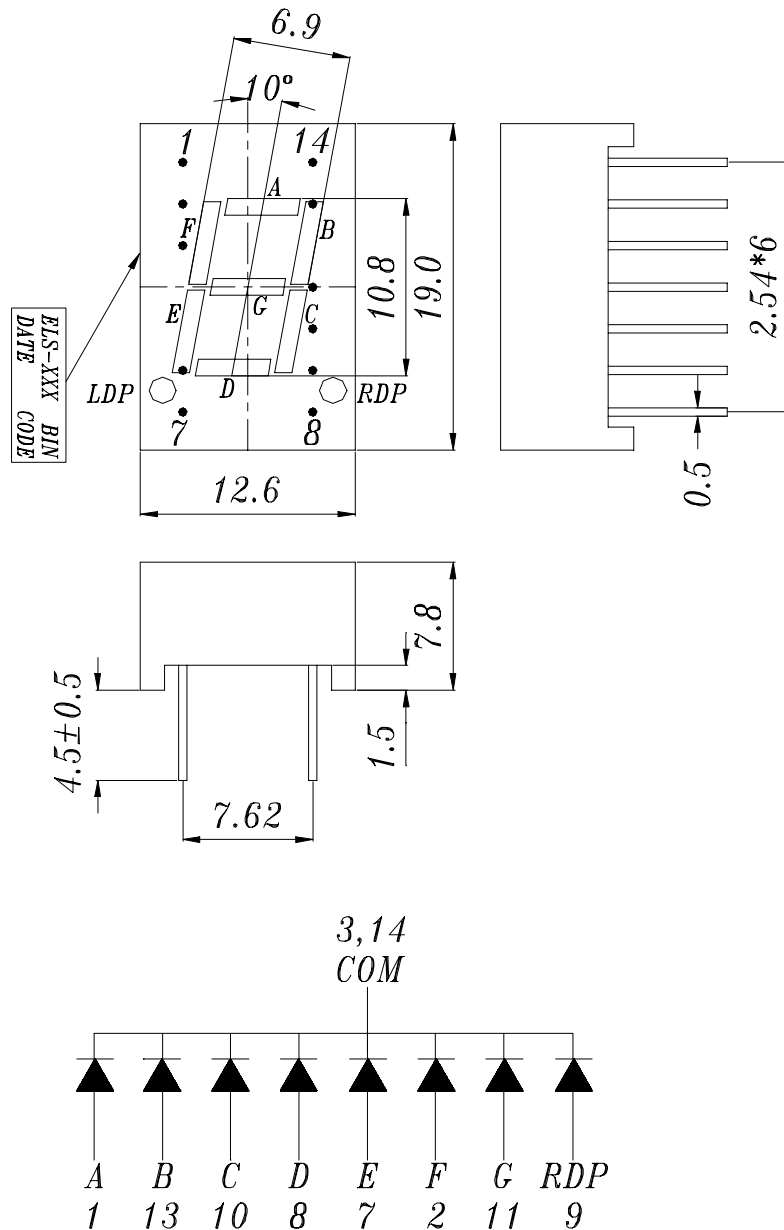
<http://www.everlight.com>



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■ Package Dimensions:



COMMON CATHODE  
1 ANODE A  
2 ANODE F  
3 COMMON CATHODE  
4 NO PIN  
5 NO PIN  
6 NO CONNECT  
7 ANODE E  
8 ANODE D  
9 ANODE R.DP  
10 ANODE C  
11 ANODE G  
12 NO PIN  
13 ANODE B  
14 COMMON CATHODE

■ Notes:

- 1.All dimensions are in millimeters , tolerance is 0.25mm unless otherwise noted.
  - 2.Above specification may be changed without notice.
- Supplier will reserve authority on material change for above specification.



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■ Absolute maximum ratings at Ta = 25°C :

Parameter	Symbol	Rating	Unit
Reverse Voltage	VR	5	V
Forward Current	IF	15	mA
Operating Temperature	Topr	-40 to +85	°C
Storage Temperature	Tstg	-40 to +100	°C
Soldering Temperature	Tsol	260 ± 5	°C
Power Dissipation	Pd	45	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	IF(Peak)	50	mA

■ Electronic optical characteristics :

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Per segment	Iv	0.3	0.50	----	mcd	IF=10mA
	Per decimal point		0.11	0.18	----		
Peak Wavelength		λ p	----	697	----	nm	IF=10mA
Dominant Wavelength		λ d	----	650	----	nm	IF=10mA
Spectrum Radiation Bandwidth		△ λ	----	90	----	nm	IF=10mA
Forward Voltage		VF	1.5	2.0	2.4	V	IF=10mA
Reverse Current		IR	----	----	10	μ A	VR=5V



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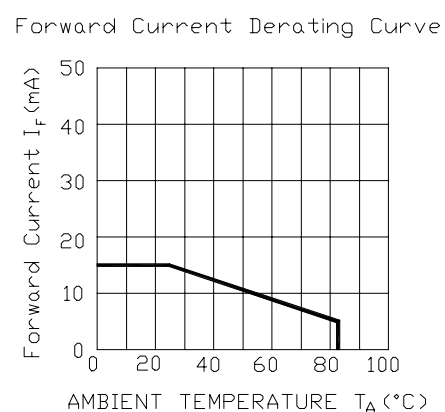
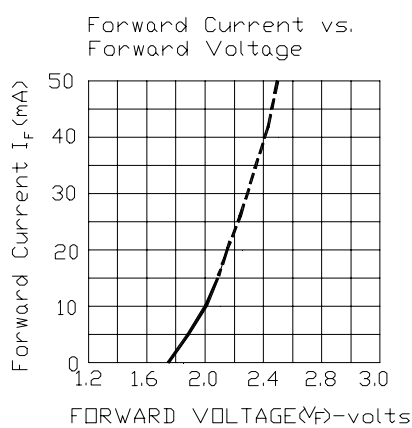
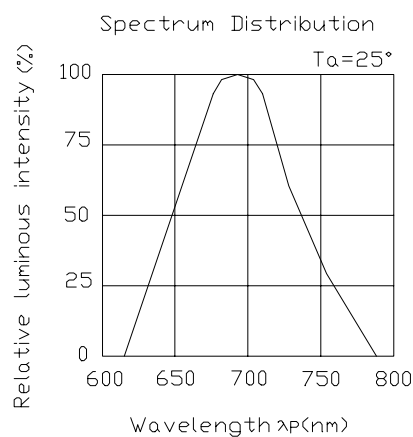
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## Typical Electro-Optical Characteristic Curves:

CHIP Material:Gap  
Emitted Color:Bright Red





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## ■ Reliability test items and conditions:

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min └ 5 min L : -55°C 30min	50 CYCLE	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min └ 10 sec L : -10°C 5min	50 CYCLE	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	IF = 10 mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 PCS	0/1