



# EVERLIGHT ELECTRONICS CO.,LTD.

Device Number : DDM-202-007 REV: 1.0

2.0" 5\*7 LED Lamp Dot Matrix Displays

MODEL NO : ELLM-2002WB/SURC/S400 ECN :                      Page: 1/5

## ■ Features :

- Large emitting dot 0.264"diameter.
- Low power/high brightness.

## ■ Applications:

- Instrument panels
- Digital read out display

## ■ Description :

- The LM-2002 series are a large emitting area(5.0mm diameter)LAMP sources configured in a 35 dots 5\*7 matrix array.
- These device is made with white clear dots and black surface.

| PART NO               | CHIP     |               | C.C. or C.A. |
|-----------------------|----------|---------------|--------------|
|                       | Material | Emitted Color |              |
| ELLM-2002WB/SURC/S400 | AlGaInP  | Hyper Red     | C.A.         |

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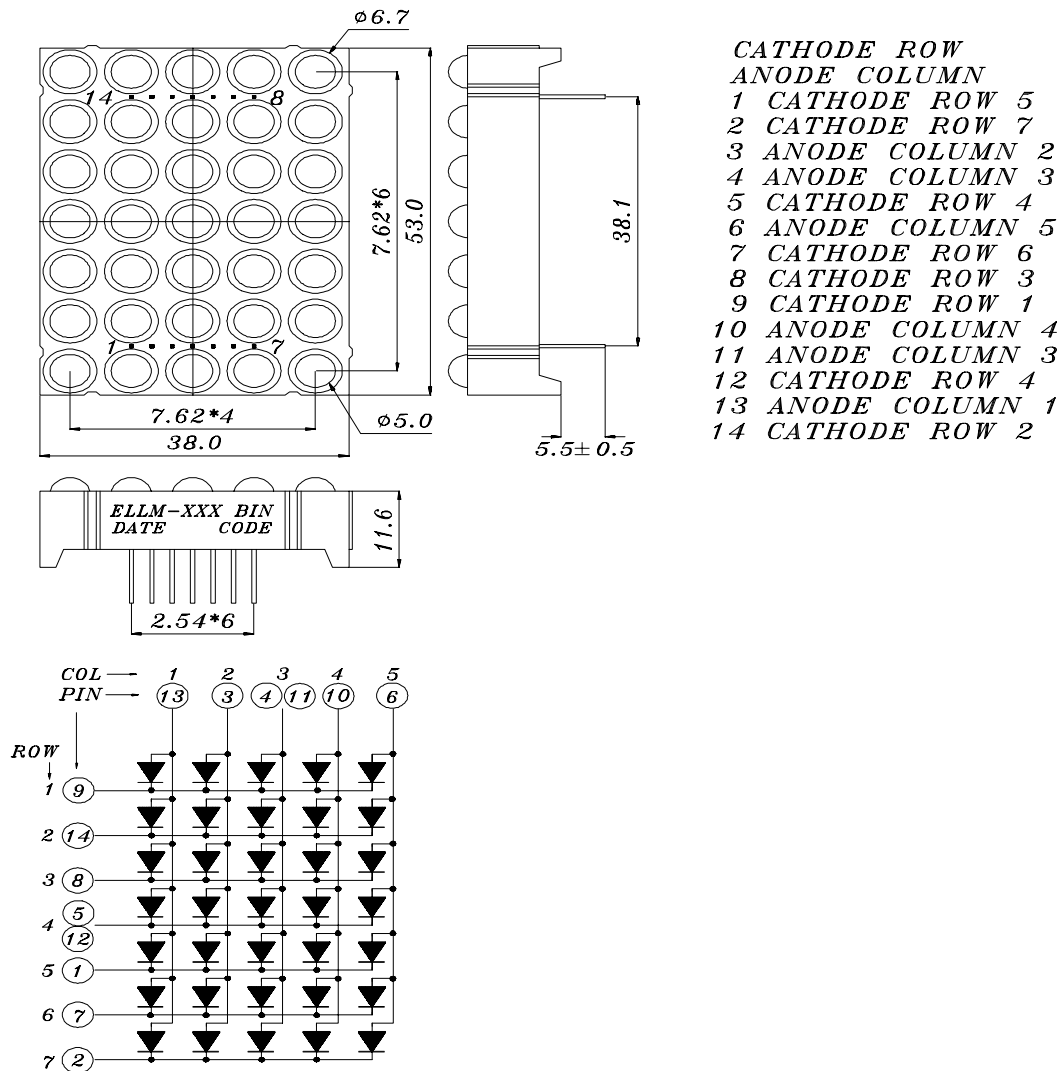
<http://www.everlight.com>



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### ■ Package Dimension:



### ■ NOTES:

1.All dimensions are 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       | 50         | mA   |
| Operating Temperature                  | Topr     | -40 to +85 | °C   |
| Storage Temperature                    | Tstg     | -40to+100  | °C   |
| Soldering Temperature                  | Tsol     | 260 ± 5    | °C   |
| Electrostatic Discharge                | ESD      | 2000       | V    |
| Power Dissipation                      | Pd       | 120        | mW   |
| Peak Forward Current(Duty 1/10 @ 1KHZ) | If(Peak) | 200        | mA   |

### ■ Electronic optical characteristics :

| Parameter                    | Symbol          | MIN. | TYP.  | MAX. | Unit | Condition |
|------------------------------|-----------------|------|-------|------|------|-----------|
| Luminous Intensity           | Iv              | ---- | 118.8 | ---- | mcd  | If=2mA    |
|                              |                 | 1240 | 1980  |      |      | If=10mA   |
| Peak Wavelength              | $\lambda_p$     | ---- | 632   | ---- | nm   | If=20mA   |
| Dominant Wavelength          | $\lambda_d$     | ---- | 624   | ---- | nm   | If=20mA   |
| Spectrum Radiation Bandwidth | $\Delta\lambda$ | ---- | 20    | ---- | nm   | If=20mA   |
| Forward Voltage              | Vf              | ---- | 2.0   | 2.4  | V    | If=20mA   |
| Reverse Current              | Ir              | ---- | ----  | 10   | V    | Vr=5V     |



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■ Reliability test item and condition:

| NO | Item                             | Test Conditions                             | Test Hours/Cycle | Sample Size | Ac/Re |
|----|----------------------------------|---------------------------------------------|------------------|-------------|-------|
| 1  | Solder Heat                      | TEMP : 260℃ ± 5 ℃                           | 5 SEC            | 76 PCS      | 0/1   |
| 2  | Temperature Cycle                | H : +85℃ 30min<br>└ 5 min<br>L : -55℃ 30min | 50 CYCLE         | 76 PCS      | 0/1   |
| 3  | Thermal Shock                    | H : +100℃ 5min<br>└ 10 sec<br>L : -10℃ 5min | 50 CYCLE         | 76 PCS      | 0/1   |
| 4  | High Temperature Storage         | TEMP : 100℃                                 | 1000 HRS         | 76 PCS      | 0/1   |
| 5  | Low Temperature Storage          | TEMP : -55℃                                 | 1000 HRS         | 76 PCS      | 0/1   |
| 6  | DC Operating Life                | If = 20 mA                                  | 1000 HRS         | 76 PCS      | 0/1   |
| 7  | High Temperature / High Humidity | 85℃/85% RH                                  | 1000 HRS         | 76 PCS      | 0/1   |

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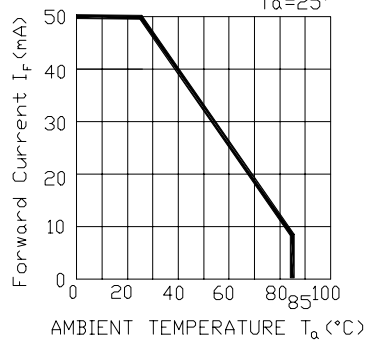
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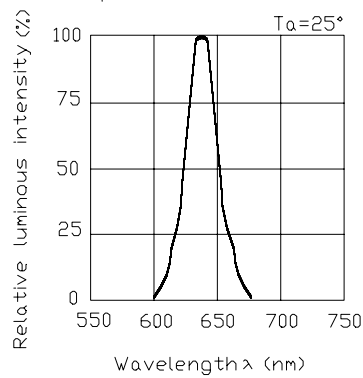
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### Typical Electro-Optical Characteristic Curves:

Forward Current Derating Curve  
 $T_a=25^\circ$



Spectrum Distribution  
 $T_a=25^\circ$



Forward Current vs.  
Forward Voltage

