

## Technical Data Sheet

## High Power LED – 0.5W (Preliminary)

## EHP-A09/SUR31-PU5

**Features**

- Feature of the device: small package with high efficiency
- View angle: 120°.
- High light flux output: more than 13 lm@150mA.
- ESD protection.
- Soldering methods: SMT
- Grouping parameter: total luminous flux, dominant wavelength.
- Optical efficiency: 41 lm/W.
- Thermal resistance (junction to lead): 80 K/W.
- The product itself will remain within RoHS compliant version.

**Applications**

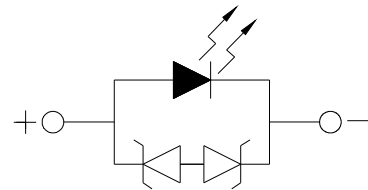
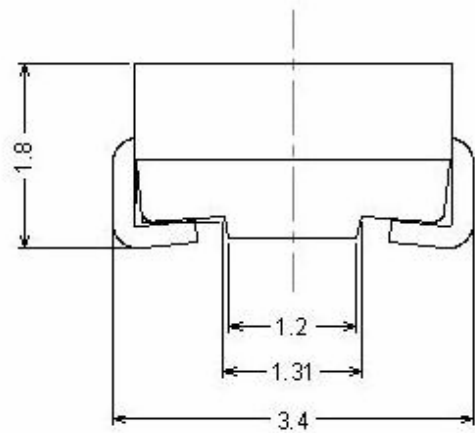
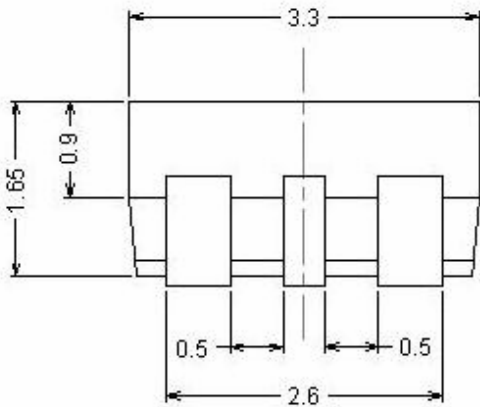
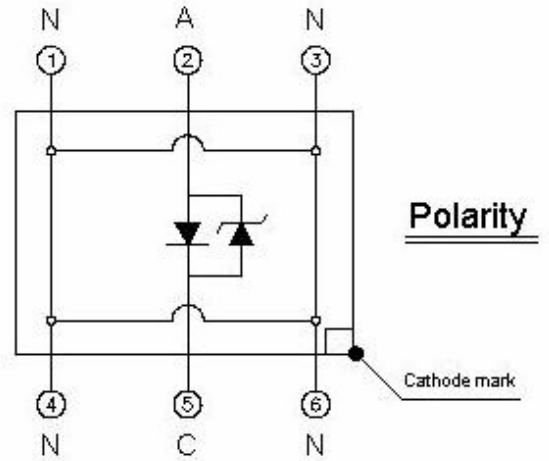
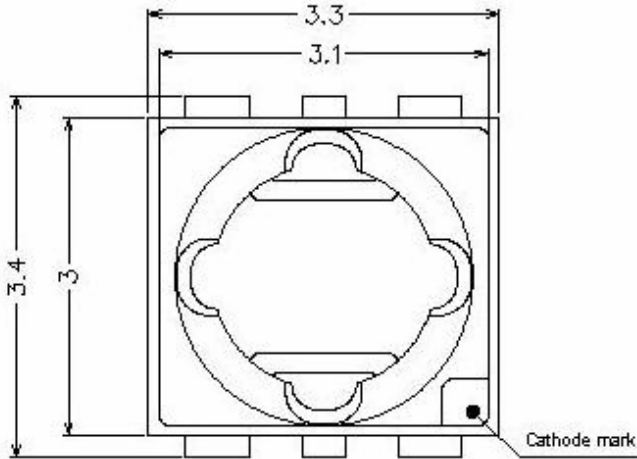
- Traffic lights
- Backlighting (LCD, switches, keys, displays, illuminated advertising))
- Interior and exterior automotive lighting (e.g. backlighting and brake lights)
- Indoor and outdoor commercial and residential architectural illumination
- Signal and symbol luminaries for orientation marker lights (e.g. steps, exit ways, etc.)  
Marker lights (e.g. steps, exit ways, etc.)

**Materials**

| Items               | Description             |
|---------------------|-------------------------|
| Reflector           | Heat resistant polymer  |
| Encapsulating Resin | Silicone resin          |
| Electrodes          | Ag plating copper alloy |
| Die attach          | Silver paste            |
| Chip                | AlGaInP                 |

**EHP-A09/SUR31-PU5**

**Dimensions**



- Notes: 1. Dimensions are in millimeters**
- 2. Tolerances unless dimensions  $\pm 0.25\text{mm}$**

**Maximum Ratings ( $T_{Ambient}=25^{\circ}C$ )**

| Parameter                                 | Symbol    | Rating     | Unit        |
|---|-----------|------------|-------------|
| Operating Temperature                     | $T_{opr}$ | -40 ~ +100 | $^{\circ}C$ |
| Storage Temperature                       | $T_{stg}$ | -40 ~ +100 | $^{\circ}C$ |
| Junction temperature                      | $T_j$     | 125        | $^{\circ}C$ |
| Forward Current                           | $I_F$     | 200        | mA          |
| Power Dissipation                         | $P_d$     | 460        | mW          |
| Thermal resistance, junction to soldering | $R_{th}$  | 80         | K/W         |

**Electro-Optical Characteristics ( $T_{Ambient}=25^{\circ}C$ )**

| Parameter                         | Bin  | Symbol          | Min  | Typ. | Max  | Unit | Condition   |
|-----------------------------------|------|-----------------|------|------|------|------|-------------|
| Luminous Intensity <sub>(1)</sub> | F1   | $I_v$           | 8    | ---- | 10   | lm   | $I_F=150mA$ |
|                                   | F2   |                 | 10   | ---- | 13   |      |             |
| Viewing Angle <sub>(2)</sub>      | ---- | $2\theta_{1/2}$ | ---- | 120  | ---- | deg  |             |
| Wavelength <sub>(3)</sub>         | R4   | $\lambda_d$     | 615  | ---- | 620  | nm   |             |
|                                   | R5   |                 | 620  | ---- | 625  |      |             |
| Forward Voltage <sub>(4)</sub>    | U2   | $V_F$           | 2.05 | ---- | 2.35 | V    |             |
|                                   | U3   |                 | 2.35 | ---- | 2.65 |      |             |

Note. 1. Luminous intensity measurement tolerance :  $\pm 10\%$

2.  $2\theta_{1/2}$  is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.

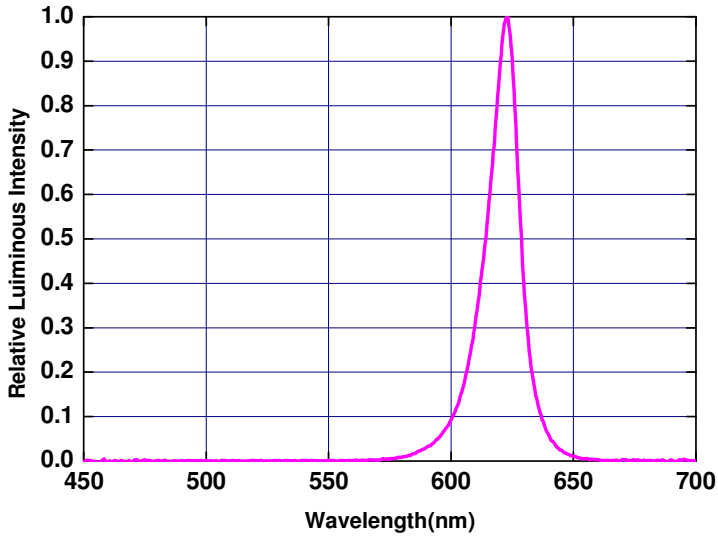
3. Wavelength measurement tolerance :  $\pm 1nm$

4. Forward Voltage measurement tolerance :  $\pm 0.1V$

**Typical Electro-Optical Characteristics Curves**

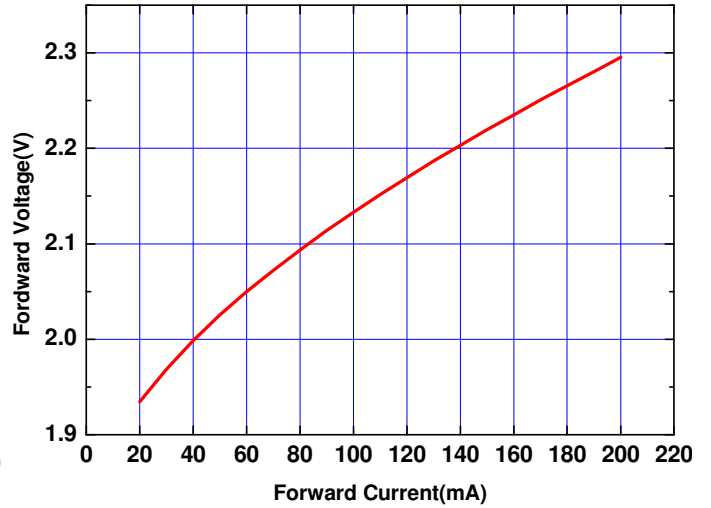
**Relative Spectral Distribution of mono-color emitter**

$I_f=150\text{mA}$ ,  $T_{\text{Ambient}}=25^\circ\text{C}$

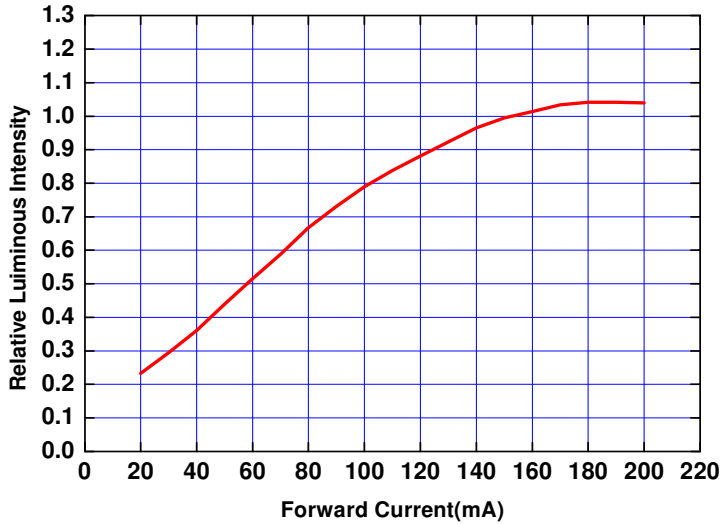


**Forward Voltage vs Forward Current,**

$T_{\text{Ambient}}=25^\circ\text{C}$



**Relative Luminous Intensity vs Forward Current,  $T_{\text{Ambient}}=25^\circ\text{C}$**



**Typical Representative Spatial Radiation Pattern**

