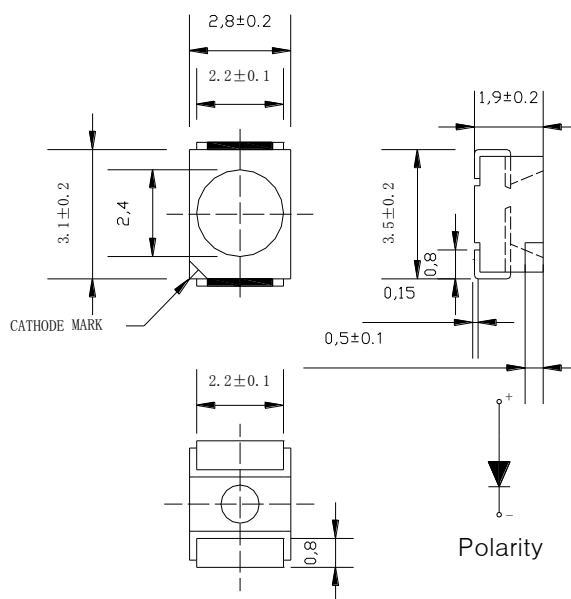


# GNL-1210xx-SE (3.1X2.8mm TOP TYPE) epoxy and silicon package

ABSOLUTE MAXIMUM RATING:(Ta=25°C)

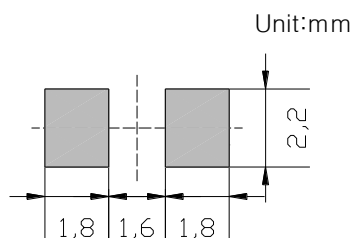
| Parameter                                              | Symbol    | Max     | Unit |
|--------------------------------------------------------|-----------|---------|------|
| DC Forward Current                                     | $I_F$     | 30      | mA   |
| Reverse Voltage                                        | $V_R$     | 5       | V    |
| Reverse Current (Vr=5V)                                | $I_R$     | 10      | μA   |
| Peak Forward Current ,tw ,=1 msec Duty ,=1/20          | $I_{FP}$  | 80      | mA   |
| Operation Temperature                                  | $T_{opr}$ | -40-85  | °C   |
| Storage Temperature                                    | $T_{stg}$ | -55-100 | °C   |
| Solder Dip<br>(5 seconds,1.6mm from body ) Temperature |           | 260     | °C   |



## Features:

- Compatible with automatic placement equipment
- Compatible with reflow solder process

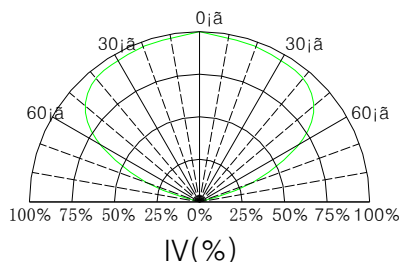
## Soldering Pad Dimensions



## Applications:

- Automotive and Telecommunication
- General use for indicators

## Viewing Pattern



| Part Number       | EMITTED COLOR |                  | Lens Color  | Peak Wavelength (nm) | Vf (v) Typ | IV (If=20mA) mcd |      | View Angle 2 θ 1/2 |
|-------------------|---------------|------------------|-------------|----------------------|------------|------------------|------|--------------------|
|                   |               |                  |             |                      |            | Min.             | Typ. |                    |
| GNL-1210URC-SE    | GaAlAs        | Super Red        | Water Clear | 640                  | 1.9        | 50               | 100  | 120°               |
| GNL-1210HRC-SE    | AlGaInP       | Super red        | Water Clear | 630                  | 2.1        | 100              | 200  | 120°               |
| GNL-1210HRC-TL-SE | AlGaInP       | HI. Super red    | Water Clear | 630                  | 2.1        | 300              | 500  | 120°               |
| GNL-1210UEC-SE    | AlGaInP       | Orange Red       | Water Clear | 625                  | 2.1        | 600              | 800  | 120°               |
| GNL-1210UEC-TL-SE | AlGaInP       | HI. Orange Red   | Water Clear | 625                  | 2.1        | 800              | 1000 | 120°               |
| GNL-1210UEC-1-SE  | AlGaInP       | Orange Red       | Water Clear | 625                  | 2.1        | 400              | 600  | 120°               |
| GNL-1210UYC-SE    | AlGaInP       | Super Yellow     | Water Clear | 590                  | 2.1        | 600              | 800  | 120°               |
| GNL-1210UYC-TL-SE | AlGaInP       | HI. Super Yellow | Water Clear | 590                  | 2.1        | 800              | 1000 | 120°               |
| GNL-1210UYC-1-SE  | AlGaInP       | Super Yellow     | Water Clear | 590                  | 2.1        | 100              | 300  | 120°               |
| GNL-1210UGC-SE    | AlGaInP       | Yellow Green     | Water Clear | 573                  | 2.1        | 60               | 80   | 120°               |
| GNL-1210UBC-SE    | InGaN         | Super Blue       | Water Clear | 470                  | 3.5        | 300              | 400  | 120°               |
| GNL-1210PGC-SE    | InGaN         | Super Pure Green | Water Clear | 525                  | 3.5        | 1000             | 1300 | 120°               |

|                |       |             |             |            |     |     |      |      |
|----------------|-------|-------------|-------------|------------|-----|-----|------|------|
| GNL-1210UWC-SE | InGaN | Super White | Water Clear | 5500-6000K | 3.5 | 900 | 1200 | 120° |
|----------------|-------|-------------|-------------|------------|-----|-----|------|------|

Usage:

1. Too high temperature will affect the brightness and other performance of LED, so in order to get better performance of LED, it is necessary to keep LED away from heat source.
2. Tolerance of photoelectric parameters: forward voltage (REF / VF):  $\pm 0.1V$  brightness (CAT / IV):  $\pm 15\%$  wavelength) (HUE / WLD):  $\pm 1nm$

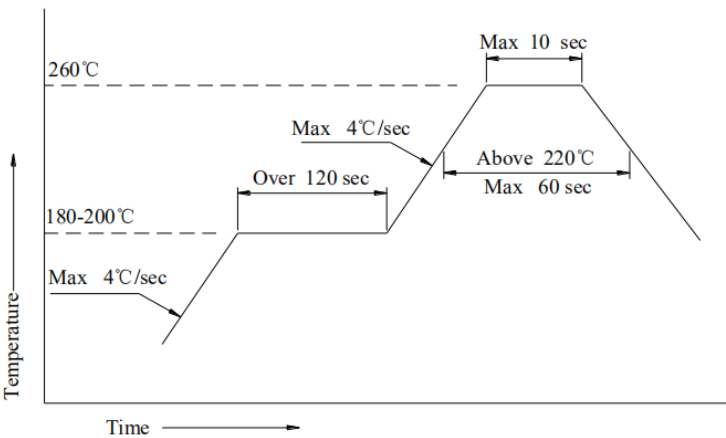
Storage:

1. Without opening the original packaging, the recommended storage environment is: temperature 5 °C ~ 30 °C, humidity below 85%RH. When the stock is more than two months, before use, do dehumidification treatment, conditions 60 °C / 8 hours;
2. After opening the original packaging, the recommended storage environment is: temperature 5-30 °C, humidity less than 60%;
3. LED is a humidity sensitive element. To avoid moisture absorption, it is recommended to open the package and store it in a closed container with desiccant, or in a nitrogen moisture proof cabinet.
4. After opening the package, the component should be used within 168 hours (7 days), and welding should be completed as soon as possible after the patch.
5. If the desiccant fails or the component is exposed to air for more than 168 hours (7 days), dehumidification shall be performed; baking conditions: 60 °C / 24 hours.

ESD: Electrostatic protection

LED (especially blue, emerald green, purple, white, pink LED) is an electrostatic sensitive element. Electrostatic or current overload can damage the LED structure. Led can result in abnormal performance caused by electrostatic damage or current overload, such as excessive leakage current, lower VF, or failure to light up and so on. So please note the following: 1. Wear anti-static wristband or anti-static gloves when touching LED; 2. All machinery, equipment, tools, work tables, shelves, etc., shall be properly grounded (within 10  $\Omega$  of grounding impedance); 3. Storage or handling of LED shall use anti-static material bags, anti-static boxes and anti-static turnover boxes, strictly prohibited the use of ordinary plastic products; 4. It is recommended that ion fans be used to suppress static electricity during operation. 5. Within an environmental range of 1 foot from the LED element, the electrostatic field voltage is less than 100 V.

Reflow soldering instructions:



Reflow soldering is recommended to the use of clean free flux, and in accordance to the reflow curve.

Maximum number of soldering is limited .

When soldering, do not exert pressure during heating process