



GaP Yellow-Green Chip TC610YGUN

1. Product Description:

TC610YGUN is a yellow-green LED chip. The chips have optimized LPE technology process to perform high brightness in this field. Advanced roughen surface technology makes the chip brighter than normal version. The production process is very matured and stabilized in mass Production. The uniformity of the chips is highly centralized in a limited range, which makes the product quality and production efficiency outstanding. The chip is friendly to adapt in various Applications.

2. Features:

- ◆ Ultra Yellow-Green
- ◆ GaP/GaP
- ◆ Rough Surface
- ◆ High Stability
- ◆ High Quality
- ◆ Various Applications

3. Chip Dimensions and Structure:

The top view shows a square chip with a central circular emitting area. Dimensions are: total width 9±0.5 mil, emitting area width 8±0.5 mil, and bonding pad width 3.8±0.4 mil. The side view shows a thickness of 10±1 mil. Labels include: Bonding Pad, P-GaP, N-GaP, GaP N Substrate, and Gold Alloy.

Unit: mil

- 1. Chip size:** (9±0.5mil)×(9±0.5mil)
(225±12.5μm)×(225±12.5μm)
- 2. Emitting area:** (8±0.5mil)×(8±0.5mil)
(200±12.5μm)×(200±12.5μm)
- 3. Thickness:** 10±1mil
- 4. Bonding pad:** 3.8±0.4mil
(95±10μm) in diameter
- 5. Electrode :**
P side: Aluminum or gold
N side: Gold alloy



4. Electro-optical Characteristics at 25°C:

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITION |
|--------------------|-------------|------|------|------|---------------|---------------------|
| Forward Voltage | V_F | - | 2.2 | 2.35 | V | $I_F=20\text{mA}$ |
| Reverse Voltage | V_R | 5 | - | - | V | $I_R=10\mu\text{A}$ |
| Leakage current | I_r | - | - | 1 | μA | $V_r=9\text{V}$ |
| Wavelength | λ_D | 566 | 570 | 574 | nm | $I_F=20\text{mA}$ |
| Luminous Intensity | I_v | - | ※ | - | mcd | $I_F=20\text{mA}$ |

※

- Rank 1 : 11~11.99mcd
- Rank 2 : 12~12.99mcd
- Rank 3 : 13~13.99mcd
- Rank 4 : 14~14.99mcd
- Rank 5 : 15~15.99mcd
- Rank 6 : 16~16.99mcd

5. Absolute Maximum Ratings:

| Parameter | Symbol | Condition | Rating |
|-----------------------|-----------|-----------------------------|--|
| Forward DC current | I_f | $T_a=25^\circ\text{C}$ | $\leq 30\text{mA}$ |
| Junction Temp | T_j | --- | $\leq 115^\circ\text{C}$ |
| Reverse Voltage | V_r | $T_a=25^\circ\text{C}$ | $\leq 10\text{V}$ |
| Storage Temp | T_{stg} | chip | $-40\sim 85^\circ\text{C}$ |
| | | chip on tape/storage | $0\sim 30^\circ\text{C}$ $\text{RH} \leq 60\%$ |
| | | chip on tape/transportation | $-20\sim 50^\circ\text{C}$ |
| Temp during packaging | --- | --- | Max 265°C ($\leq 15\text{sec}$) |

Note:

- 1) Using the maximum rated current or voltage, is used as a single chip, and is a limit on the PCB board and no glue, independent constant-current source driver. Higher than the rated conditions, P-N junction temperature higher than 115°C can lead to damage of the LED chip.
- 2) Under the condition of maximum 265°C high temperature used only for 15 seconds, high temperature or time is too long, can cause damage to the chip.
- 3) The best storage conditions of Blue tape is placed in the shade dry environment, Indoor temperature is not higher than 30°C , Relative humidity below 60%, shelf life is 1 year.



Uni Light Technology Inc.

■Tel : 0769-87631888 ■Fax : 0769-87631888-166

6.Characteristic Curves:

Remark: These are the typical TC610YGUN measured values, along with different brightness and wavelength, the actual value is slightly different.

Fig1. Intensity vs. Forward Current

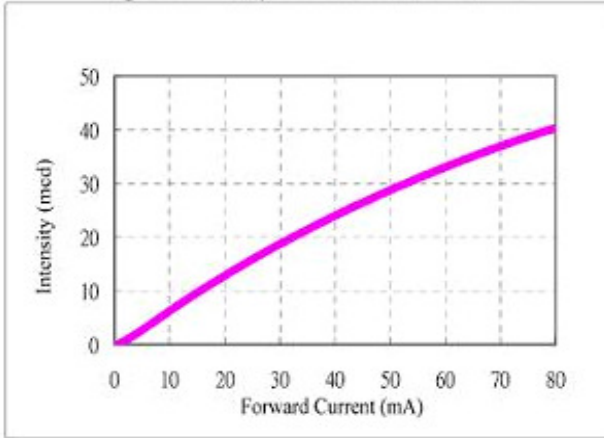


Fig2. Forward Current vs. Forward Voltage

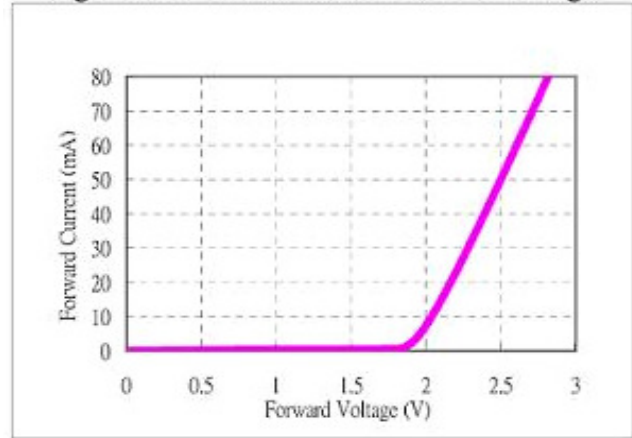


Fig3. Wavelength vs. Forward Current

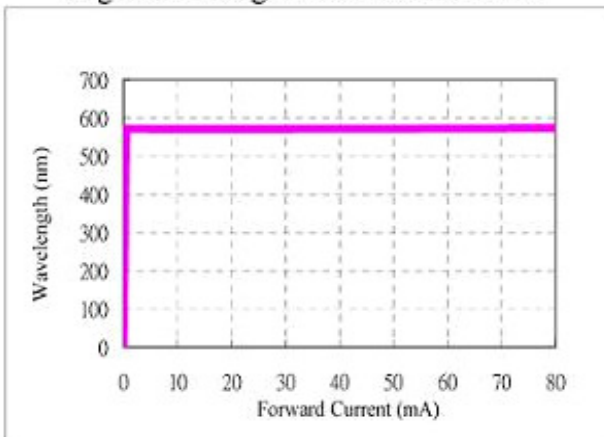


Fig4. Relative Wavelength vs. Temperature

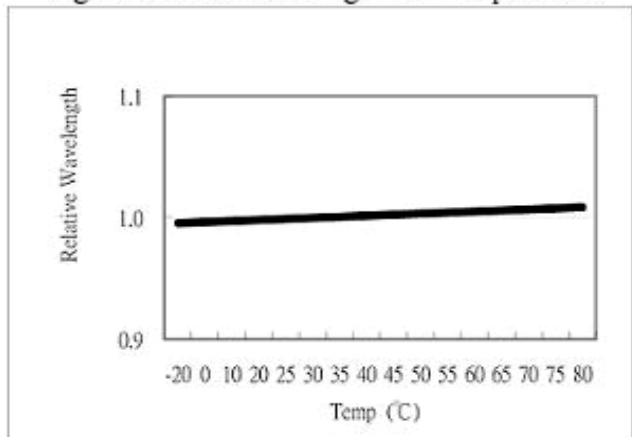


Fig5. Relative Intensity vs. Temperature

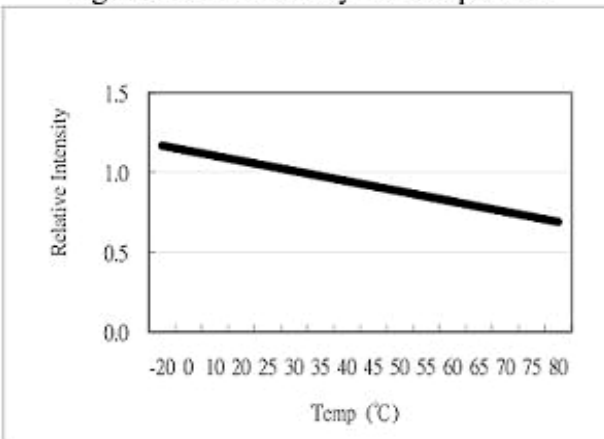
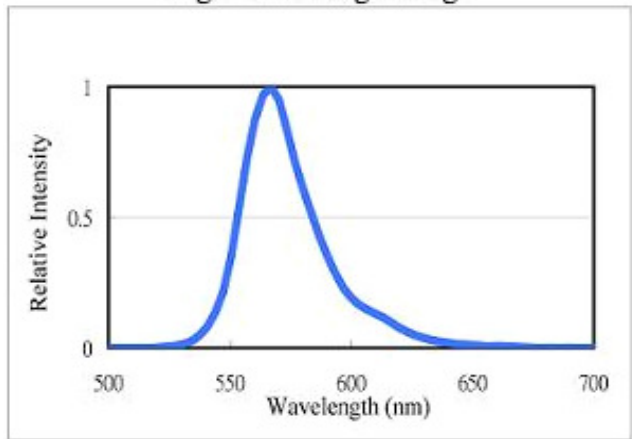


Fig6. Wavelength range



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