



# Product Guide

F\_1113F Series, Right Angle AllnGaP SMT LED



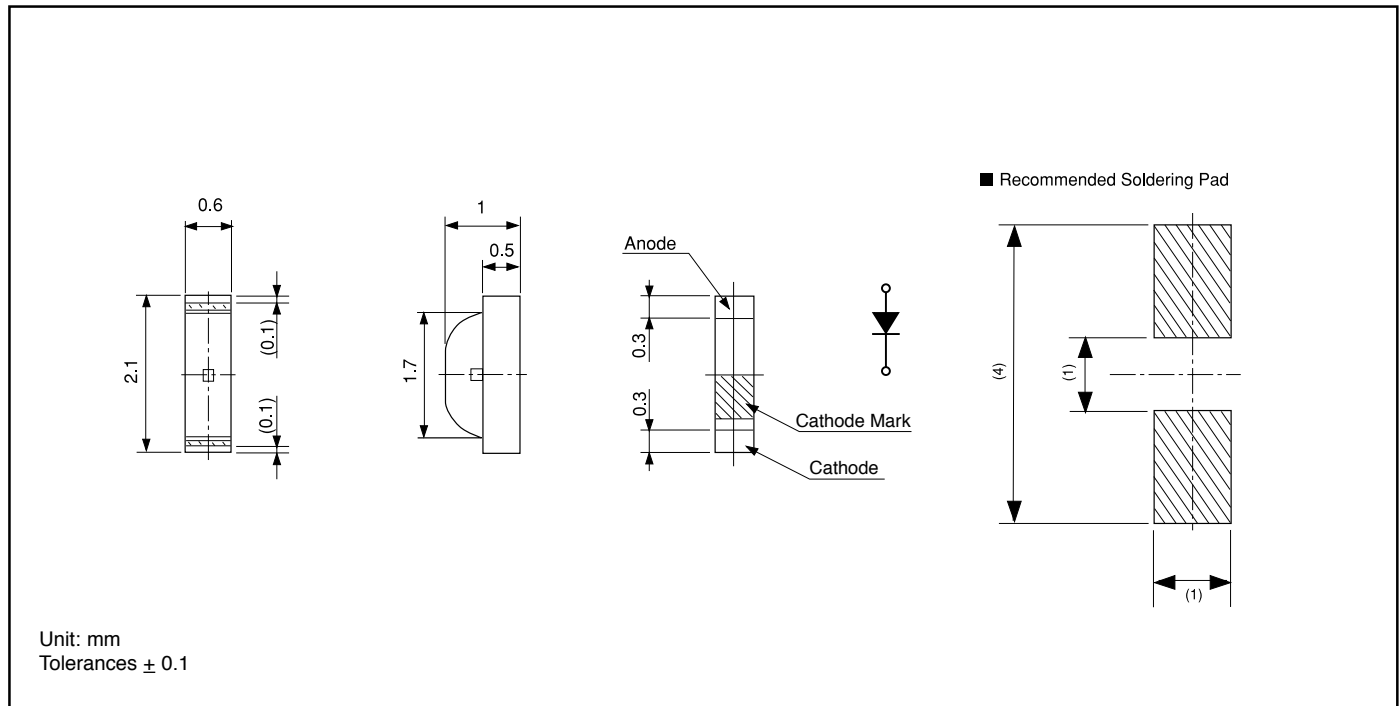
## Features

- High brightness AllnGaP die material
- Wide viewing angle
- Ideal for edge lighting
- Industry's thinnest package

## Applications

- Cellular phones
- PDAs
- Car Audio
- Indicators for compact PC peripherals

## Outline Dimensions



## Electro-Optical Characteristics

(Ta=25°C)

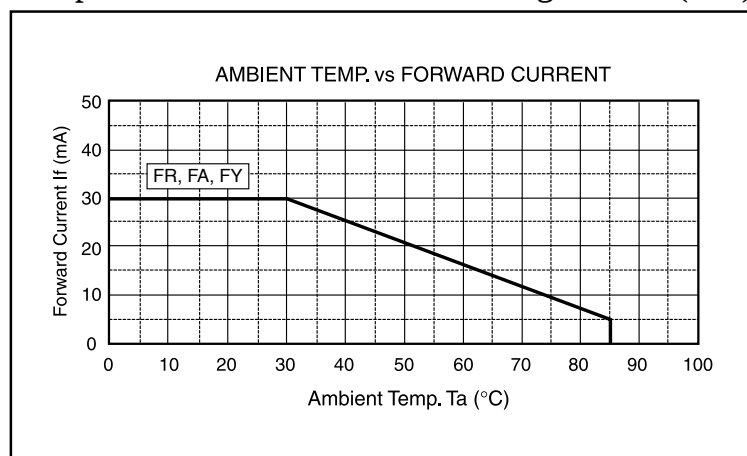
| Part No. | Material | Emitted Color | Lens Color  | Luminous Intensity I <sub>V</sub> |      |                | Wavelength<br>Spectral Line Half Width |                              |         |                | Forward Voltage V <sub>F</sub> |      |                | Reverse Current I <sub>R</sub> |                | Viewing Angle<br>(2 θ 1/2) |
|----------|----------|---------------|-------------|-----------------------------------|------|----------------|----------------------------------------|------------------------------|---------|----------------|--------------------------------|------|----------------|--------------------------------|----------------|----------------------------|
|          |          |               |             | MIN.                              | TYP. | I <sub>F</sub> | Peak λ <sub>p</sub> TYP.               | Dominant λ <sub>d</sub> TYP. | Δλ TYP. | I <sub>F</sub> | TYP.                           | MAX. | I <sub>F</sub> | MAX.                           | V <sub>R</sub> |                            |
| FR1113F  | AlInGaP  | Red           | Milky White | 25                                | 50   | 20             | 635                                    | 626                          | 15      | 20             | 1.9                            | 2.4  | 20             | 100                            | 5              | 130°                       |
| FA1113F  | AlInGaP  | Orange        |             | 25                                | 65   | 20             | 609                                    | 605                          | 15      | 20             | 1.9                            | 2.4  | 20             | 100                            | 5              |                            |
| FY1113F  | AlInGaP  | Yellow        |             | 25                                | 65   | 20             | 592                                    | 590                          | 15      | 20             | 1.9                            | 2.4  | 20             | 100                            | 5              |                            |
| Units    |          |               |             | mcd                               |      | mA             | nm                                     |                              |         | mA             | V                              |      | mA             | μA                             | V              | Deg.                       |

(Ta=25°C)

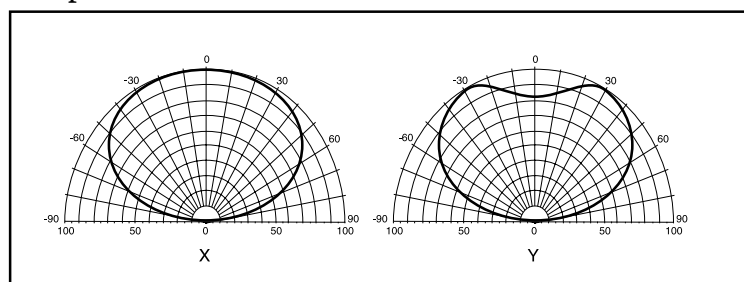
| Item                  |                 | Red                   | Orange | Yellow | Units |
|-----------------------|-----------------|-----------------------|--------|--------|-------|
|                       | Symbol          | FR                    | FA     | FY     |       |
| Power Dissipation     | Pd              | 81                    | 81     | 81     | mW    |
| Forward Current       | I <sub>F</sub>  | 30                    | 30     | 30     | mA    |
| Peak Forward Current  | I <sub>FM</sub> | 100                   | 100    | 100    | mA    |
| Reverse Voltage       | V <sub>R</sub>  | 5                     | 5      | 5      | V     |
| Operating Temperature | Topr            | -40 to +85            |        |        | °C    |
| Storage Temperature   | Tstg            | -40 to +100           |        |        | °C    |
| Derating*             | ΔI <sub>F</sub> | 0.43 (DC) 1.0 (Pulse) |        |        | mA/°C |

\* Ta=25°C, I<sub>FM</sub> applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/10.

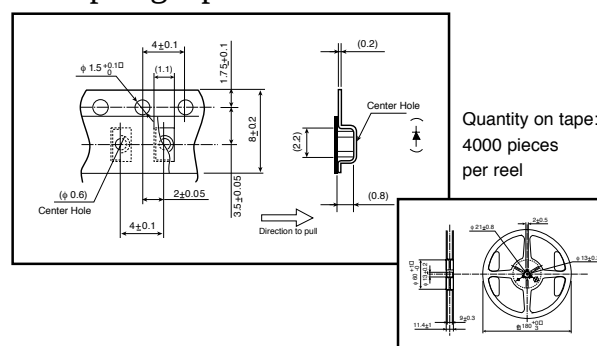
### ■ Operation Current Derating Chart (DC)



## ■ Spatial Distribution



## ■ Taping Specifications

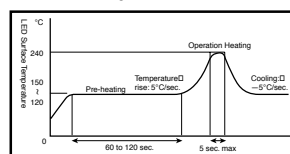


## ■ Precautions

Please follow these handling precautions to prevent damage to the chip and ensure its reliability.

**1. Soldering conditions:**

- **Soldering iron:** Temperature at tip of iron: 280°C max. (30W max.)  
Soldering time: 3 sec. max.
- **Dip soldering:** Preheating: 120 ~ 150°C max. (resin surface temp.)  
60 ~ 120 sec. max. Bath temperature: 260°C max. Dipping Time: 5 sec. max.
- **Reflow Soldering:**



**2. Cleaning:**

- If cleaning is required, use the following solutions for less than 1 minute, at less than 40°C.
- Appropriate chemicals: Ethyl alcohol and isopropyl alcohol.
- Effect of ultrasonic cleaning on the LED resin body differs depending on such factors as the oscillator output, size of PCB and LED mounting method. The use of ultrasonic cleaning should be enforced at proper output after confirming there is no problem.

Product specifications subject to change without notice. PGF1113F-0301