

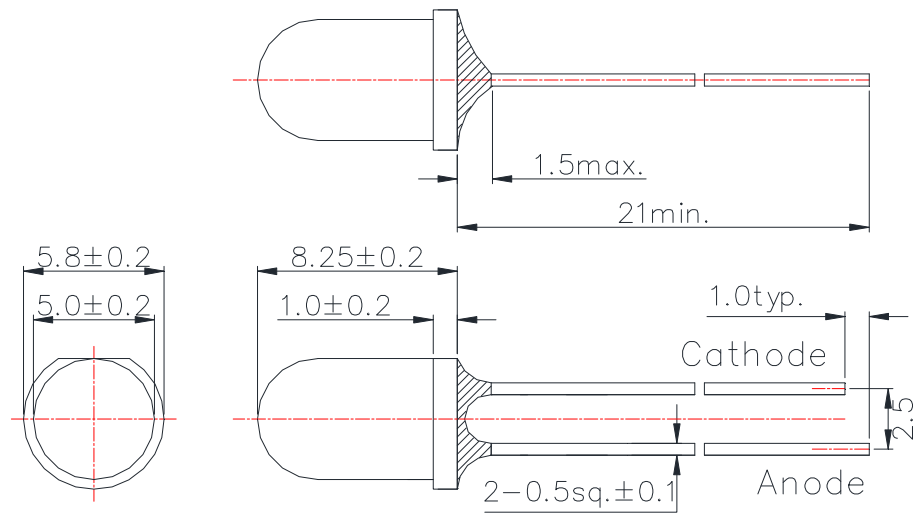
# Data Sheet

## L590-03

High Bright Yellow LED Lamp

USHIO

### Outline and Internal Circuit



(Unit : mm)

### Features

- Chip Material : AlGaInP
- Chip Dimension :  $350\text{um} * 350\text{um}$
- Number of Chips : 1pce
- Peak Wavelength :  $590\text{nm typ.}$
- Package Type :  $\phi 5\text{mm}$  clear molding
- Lead Frame : Soldered (Lead Free)
- Lens : Epoxy Resin

### Application

## Absolute Maximum Ratings (Tc=25°C)

| Item                  | Symbol | Rated      | Unit |
|-----------------------|--------|------------|------|
| Power Dissipation     | PD     | 120        | mW   |
| Forward Current       | IF     | 50         | mA   |
| Pulse Forward Current | IFP    | 100        | mA   |
| Reverse Voltage       | VR     | 5          | V    |
| Thermal Resistance    | Rthja  | 350        | K/W  |
| Junction Temperature  | Tj     | 120        | °C   |
| Operating Temperature | Topr   | -40 ~ +100 | °C   |
| Storage Temperature   | Tstg   | -40 ~ +100 | °C   |
| Soldering Temperature | TSOL   | 265        | °C   |

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Soldering condition must be completed with 3 seconds at 265°C.

## Optical and Electrical Characteristics (Tc=25°C)

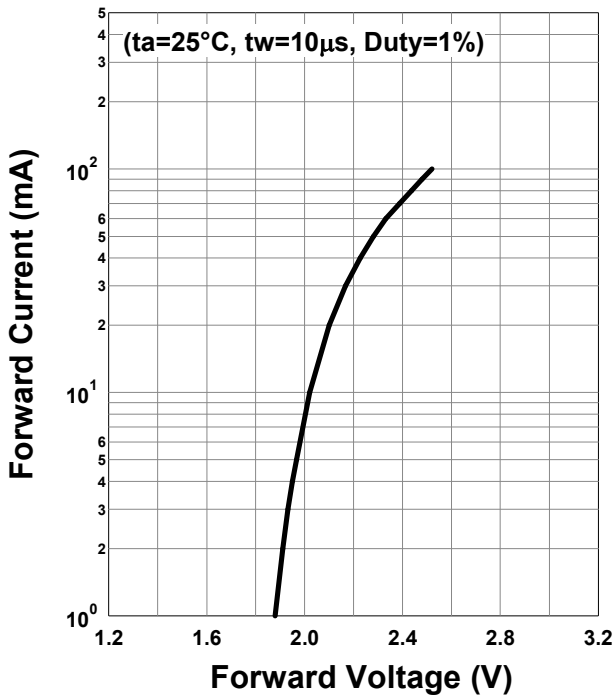
| Parameter            | Symbol | Min | Typ  | Max | Unit  | Test Condition |
|----------------------|--------|-----|------|-----|-------|----------------|
| Forward Voltage      | VF     |     | 2.1  | 2.3 | V     | IF=20mA        |
|                      | VFP    |     | 2.5  |     |       | IFP=100mA      |
| Total Radiated Power | PO     |     | 4.0  |     | mW    | IF=20mA        |
|                      |        |     | 21   |     |       | IFP=100mA      |
| Radiant Intensity    | IE     |     | 14   |     | mW/sr | IF=20mA        |
|                      |        |     | 75   |     |       | IFP=100mA      |
| Luminous Flux        | ΦV     |     | 2300 |     | mlm   | IF=20mA        |
| Peak Wavelength      | λp     | 580 |      | 600 | nm    | IF=20mA        |
| Dominant Wavelength  | λD     |     | 586  |     | nm    | IF=20mA        |
| Half Width           | Δλ     |     | 13   |     | nm    | IF=20mA        |
| Viewing Half Angle   | θ1/2   |     | ±15  |     | deg.  | IF=20mA        |
| Rise Time            | tr     |     | 30   |     | ns    | IF=20mA        |
| Fall Time            | tf     |     | 25   |     | ns    | IF=20mA        |

‡ Radiated Power is measured by S3584-08.

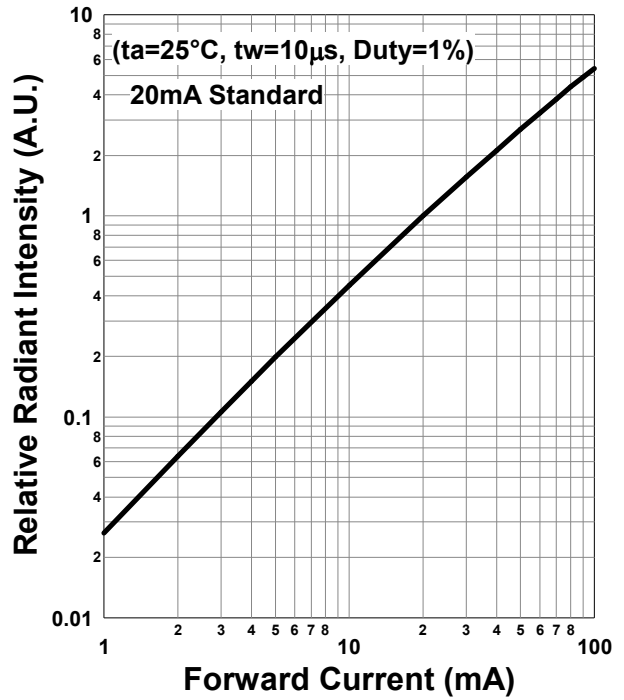
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

## Typical Characteristic Curves

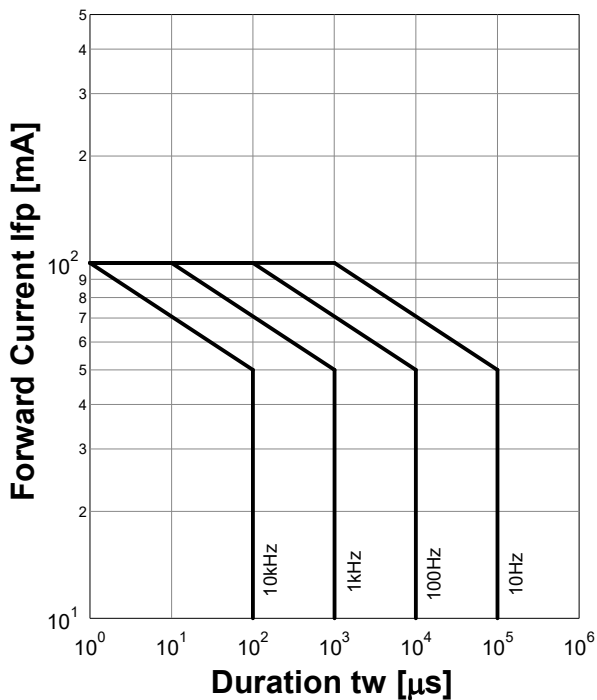
### Forward Current - Forward Voltage



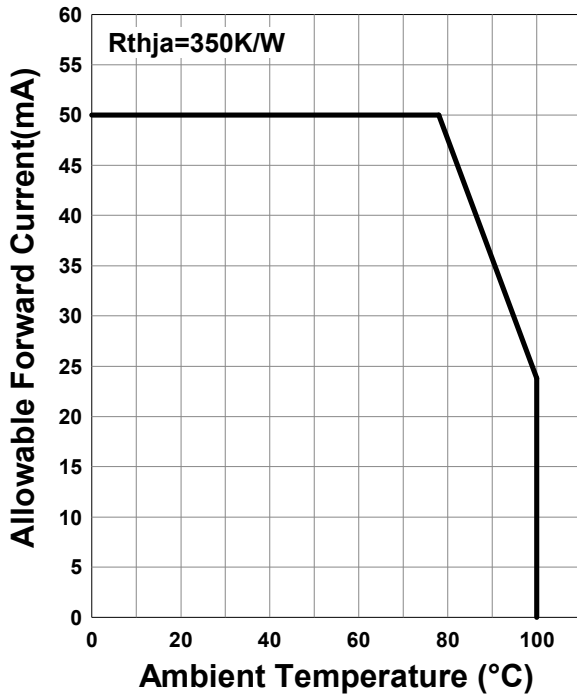
### Relative Radiant Intensity - Forward Current



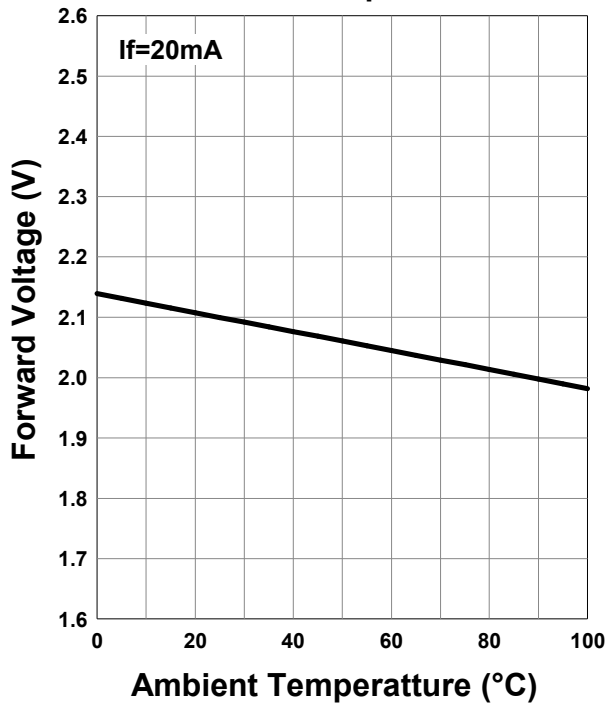
### Forward Current - Pulse Duration



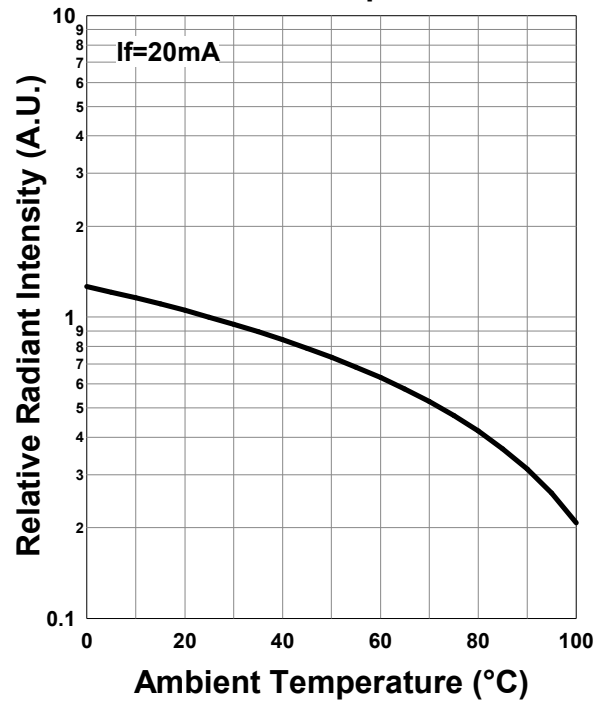
### Allowable Forward Current - Ambient Temperature



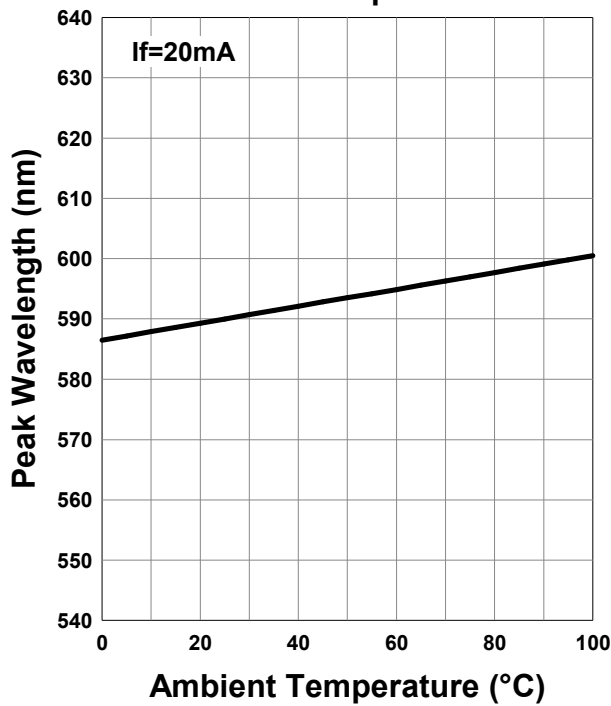
**Forward Voltage - Ambient Temperature**



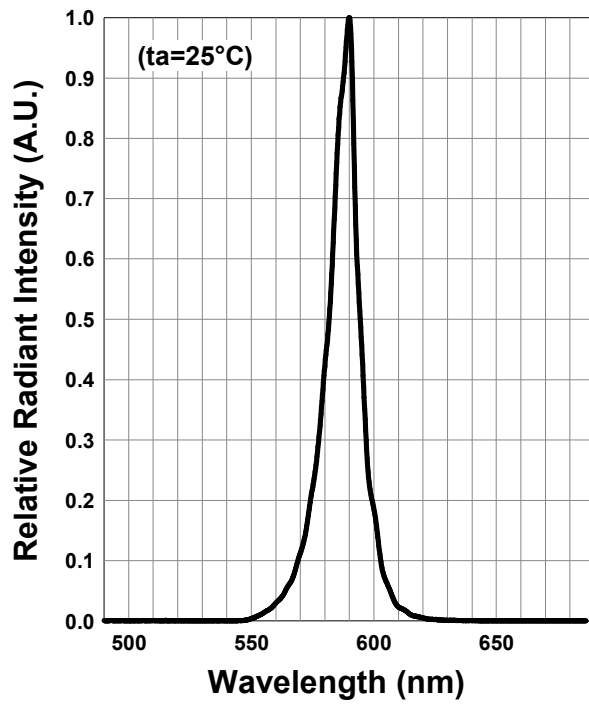
**Relative Radiant Intensity - Ambient Temperature**



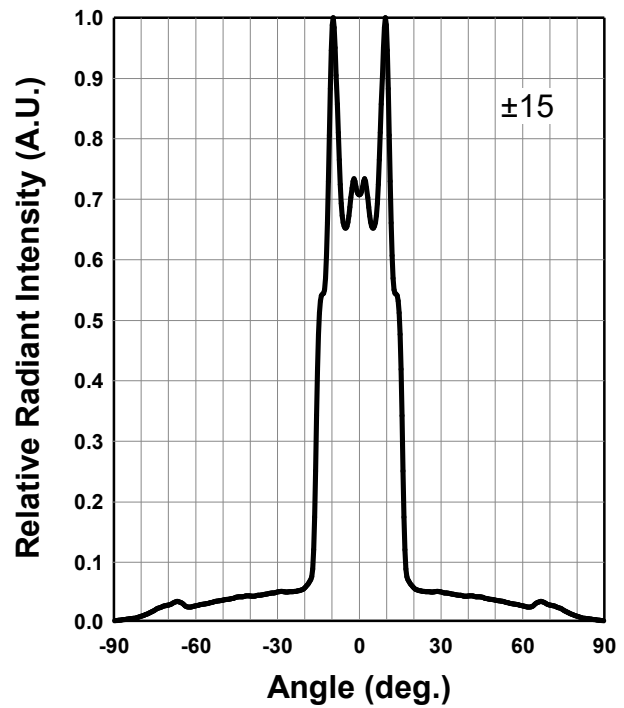
**Peak Wavelength - Ambient Temperature**



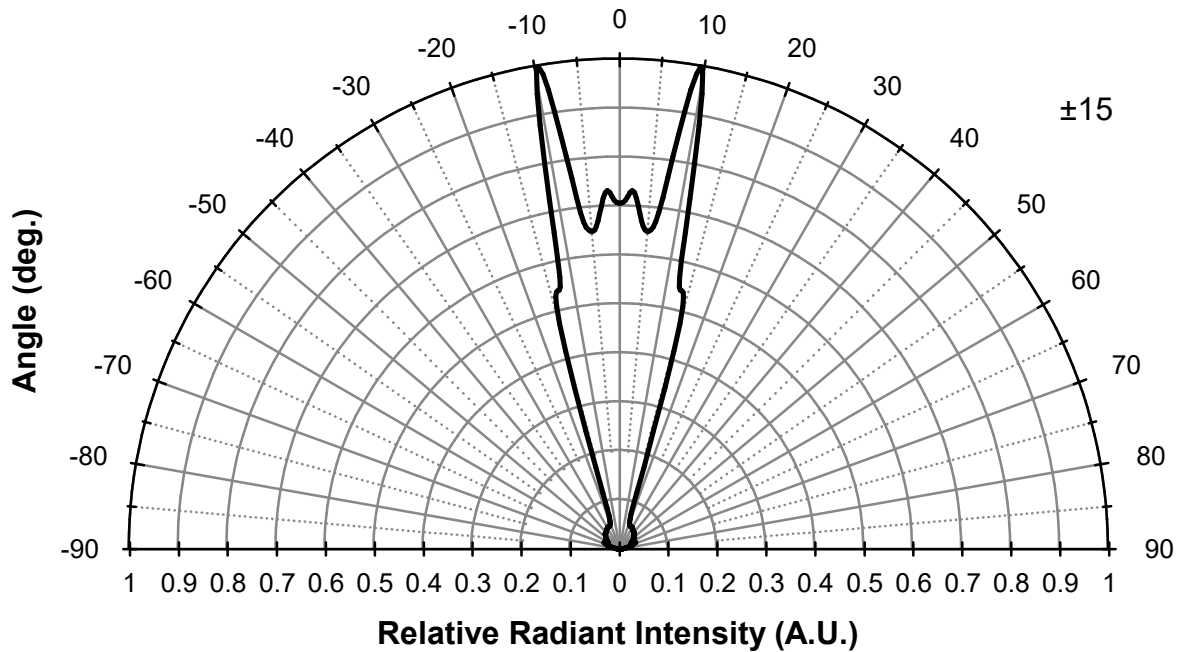
### Relative Spectral Emission



### Radiation Characteristics



### Radiation Characteristics



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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements.

Product data and parameters may vary by user application and over time.

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