

# GL390/GL390V

## Thin Bow Type Resin Mold Package Infrared Emitting Diodes

### ■ Features

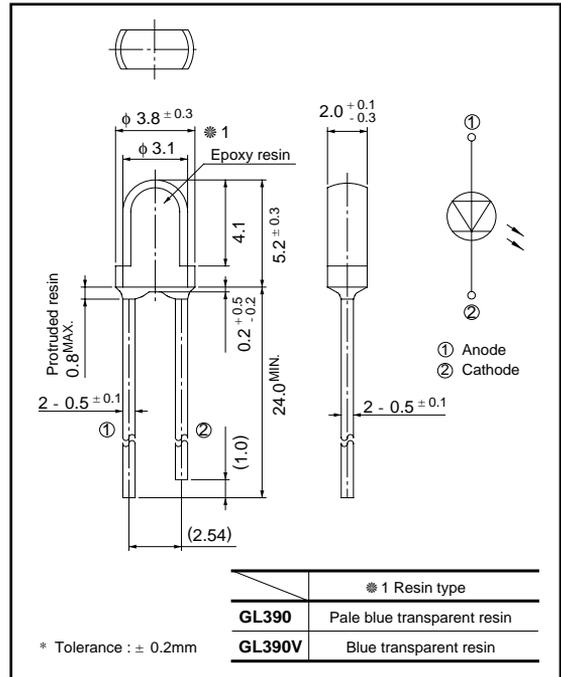
- Thin bow type resin mold package  
(Resin area : 2.0 x 3.1 x 5.2 mm)
- Low peak forward voltage (**GL390V**)  
 $V_{FM}$  : TYP. 1.9V at  $I_{FM}=0.5A$

### ■ Applications

- Cameras
- Infrared remote controllers

### ■ Outline Dimensions

(Unit : mm)



### ■ Model Lineup

| Model                     | GL390     | GL390V  |
|---------------------------|-----------|---------|
| Radiant intensity (mW/sr) | TYP. 13   | TYP. 16 |
| Half intensity angle (°)  | TYP. ± 18 |         |

### ■ Absolute Maximum Ratings

(Ta=25°C)

| Parameter                | Symbol    | Rating     | Unit |
|--------------------------|-----------|------------|------|
| Forward current          | $I_F$     | 60         | mA   |
| *1 Peak forward current  | $I_{FM}$  | 1          | A    |
| Reverse voltage          | $V_R$     | 6          | V    |
| Power dissipation        | P         | 150        | mW   |
| Operating temperature    | $T_{opr}$ | - 25 to 85 | °C   |
| Storage temperature      | $T_{stg}$ | - 40 to 85 | °C   |
| *2 Soldering temperature | $T_{sol}$ | 260        | °C   |

\*1 Pulse width ≤ 100μs, Duty ratio=0.01

\*2 For 3 seconds at the position of 2.6 mm from the resin edge

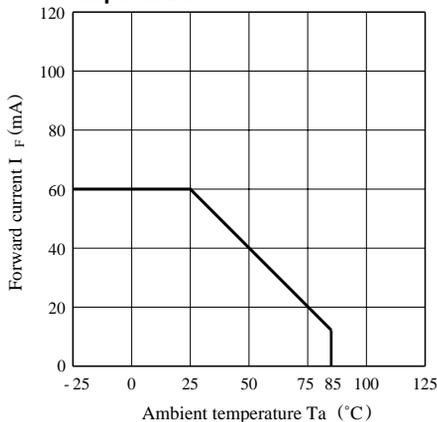
**Electro-optical Characteristics**

(Ta=25°C)

| Parameter                 | Symbol          | Conditions                       | MIN. | TYP.     | MAX. | Unit          |
|---------------------------|-----------------|----------------------------------|------|----------|------|---------------|
| Forward voltage           | $V_F$           | $I_F = 50\text{mA}$              | -    | 1.3      | 1.5  | V             |
| Peak forward voltage      | <b>GL390</b>    | $I_{FM} = 0.5\text{A}$           | -    | 2.2      | 3.5  | V             |
|                           | <b>GL390V</b>   |                                  | -    | 1.9      | 3.0  |               |
| Reverse current           | $I_R$           | $V_R = 3\text{V}$                | -    | -        | 10   | $\mu\text{A}$ |
| *3 Radiant intensity      | <b>GL390</b>    | $I_F = 50\text{mA}$              | 7    | 13       | -    | mW/sr         |
|                           | <b>GL390V</b>   |                                  | 9    | 16       | -    |               |
| Peak emission wavelength  | $\lambda_P$     | $I_F = 5\text{mA}$               | -    | 950      | -    | nm            |
| Half intensity wavelength | $\Delta\lambda$ | $I_F = 5\text{mA}$               | -    | 45       | -    | nm            |
| Terminal capacitance      | <b>GL390</b>    | $V_R = 0\text{ f} = 1\text{MHz}$ | -    | 70       | -    | pF            |
|                           | <b>GL390V</b>   |                                  | -    | 50       | -    |               |
| Response frequency        | $f_c$           |                                  | -    | 300      | -    | kHz           |
| Half intensity angle      | $\Delta\theta$  | $I_F = 20\text{mA}$              | -    | $\pm 18$ | -    | °             |

\*3  $I_E$  : Value obtained by converting the value in power of radiant fluxes emitted at the solid angle of 0.01 sr (steradian) in the direction of mechanical axis of the lens portion into 1 sr or all those emitted from the light emitting diode.

**Fig. 1 Forward Current vs. Ambient Temperature**



**Fig. 2 Peak Forward Current vs. Duty Ratio**

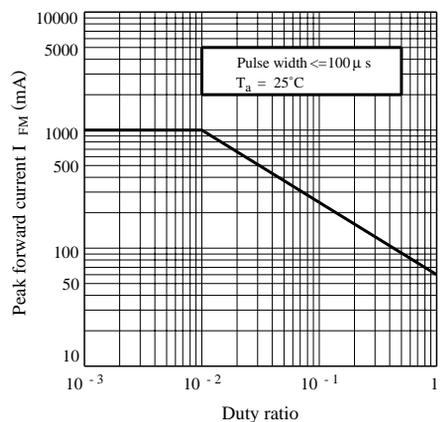


Fig. 3 Spectral Distribution

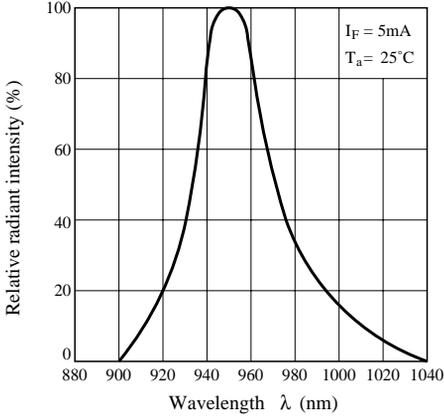


Fig. 4 Peak Emission Wavelength vs. Ambient Temperature

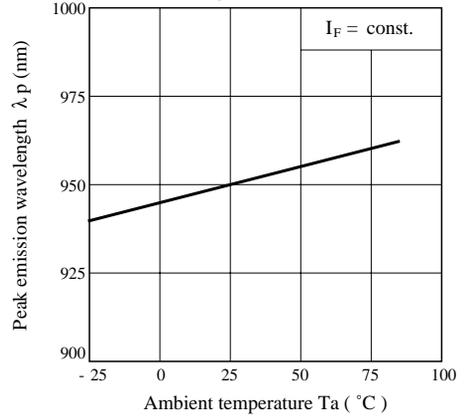


Fig. 5-1 Forward Current vs. Forward Voltage (GL390)

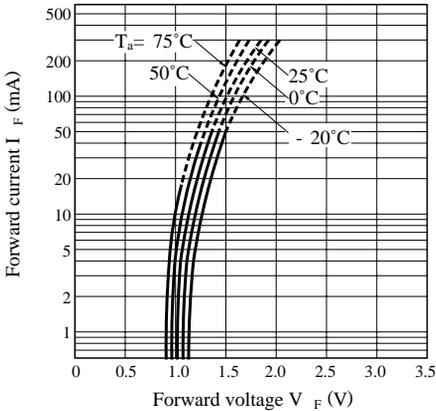


Fig. 5-2 Forward Current vs. Forward Voltage (GL390V)

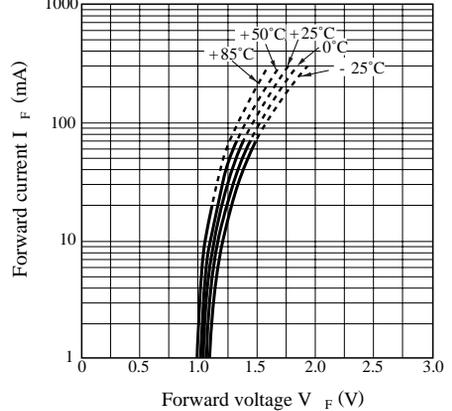


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

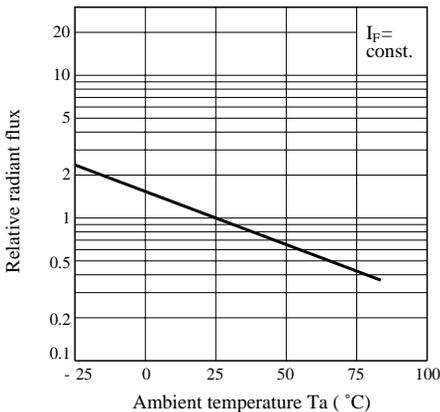
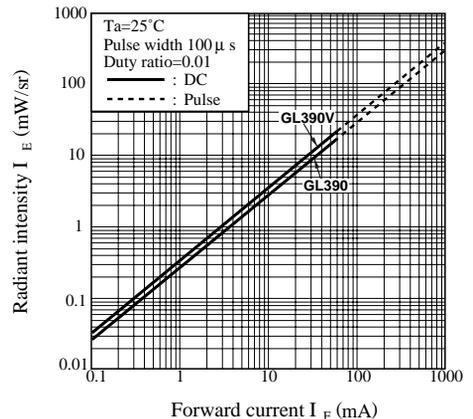
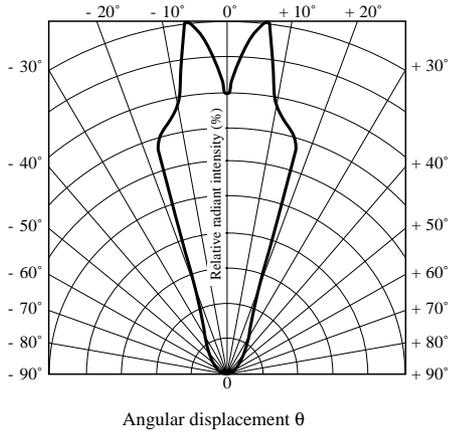
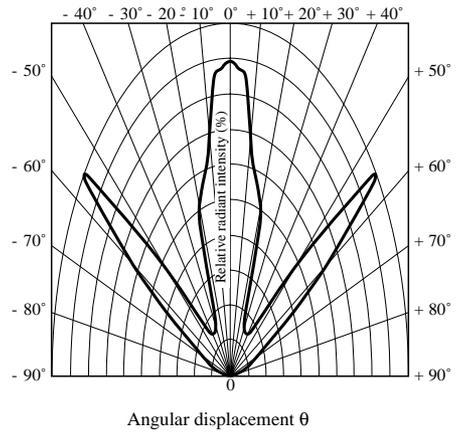


Fig. 7 Radiant Intensity vs. Forward Current



**Fig. 8-1 Radiation Diagram (Horizontal Direction)****Fig. 8-2 Radiation Diagram (Vertical Direction)**

● Please refer to the chapter "Precautions for Use". (Page 78 to 93)

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