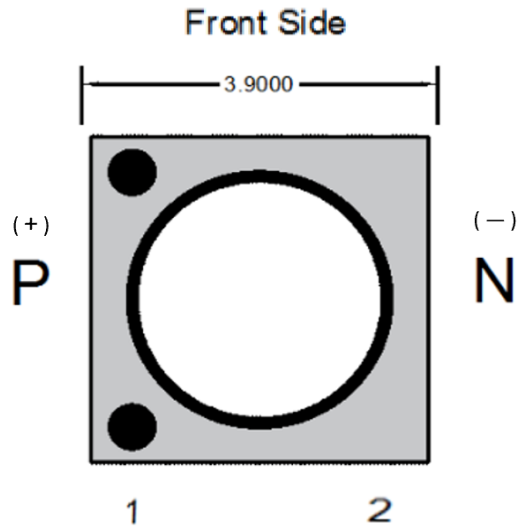




**Package Dimensions**

(All dimensions are in mm, tolerance is  $\pm 0.13\text{mm}$ )





**Absolute Maximum Ratings at Ta=25 °C**

| Characteristics            | Symbol | Min. | Typ.      | Max. | Unit |
|----------------------------|--------|------|-----------|------|------|
| DC Forward Current         | IF     | --   | --        | 150  | mA   |
| Pulse Current (@1/10 duty) | IP     | --   | --        | TBD  | mA   |
| Forward Voltage            | VF     | 5.0  | --        | 9.0  | V    |
| Junction Temperature       | Tj     | --   | --        | 65   | °C   |
| Storage Temperature Range  | Tstg   | -40  | --        | 80   | °C   |
| Soldering Temperature      | Tsol   | --   | --        | 245  | °C/W |
| Viewing Angle              | 2θ1/2  | --   | 30/60/120 | --   | Deg  |

Notes:

1. When operating at other than ambient temperature, maximum allowable current depends on derating curves.
2. Pulse width = 0.01s & duty factor = 1/10.
3. When operating at maximum allowable current, Tj must be below 85 °C.
4. Viewing angle tolerance is ± 10°.

**Electrical and Optical Characteristics at Ta=25 °C**

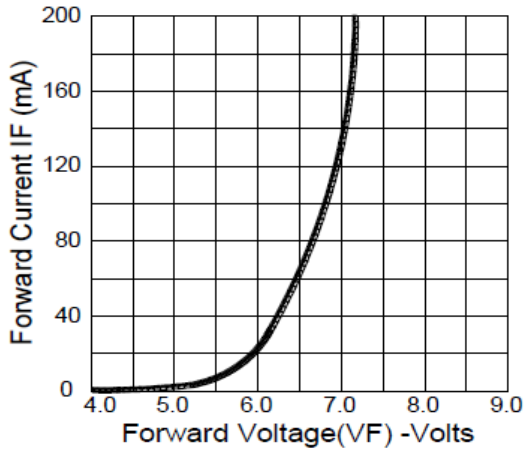
| Product       | VF(V)@150mA |      |      | Viewing Angle |
|---------------|-------------|------|------|---------------|
|               | Min.        | Typ. | Max. |               |
| PLH39CA-WCU01 | 5.0         | --   | 9.0  | 2θ1/2         |
| PLH39CB-WCU01 |             |      |      | 30/60/120     |
| PLH39CB-WCU01 |             |      |      |               |

Notes:

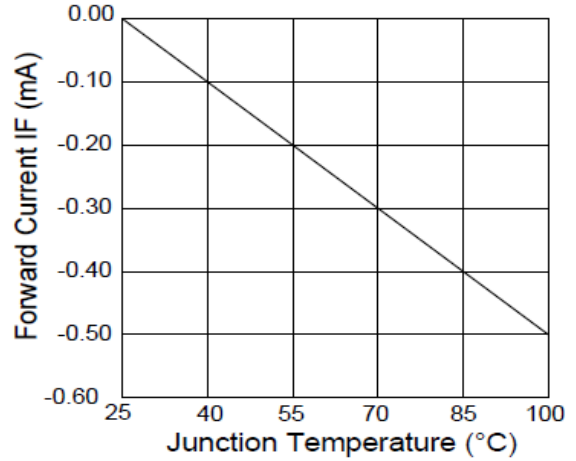
1. Performance guaranteed only under conditions listed in above tables.

**Typical Electrical / Optical Characteristic Curves**

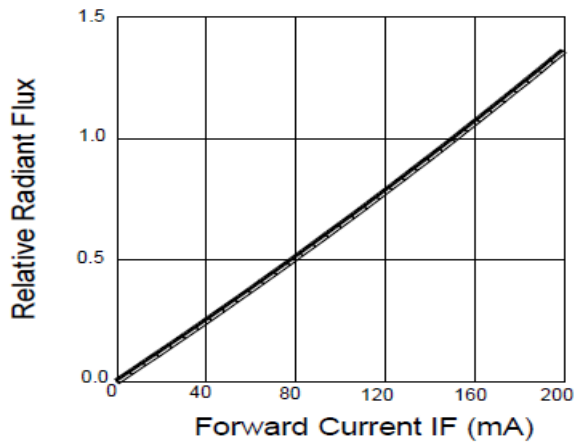
**Forward Current VS. Forward Voltage**



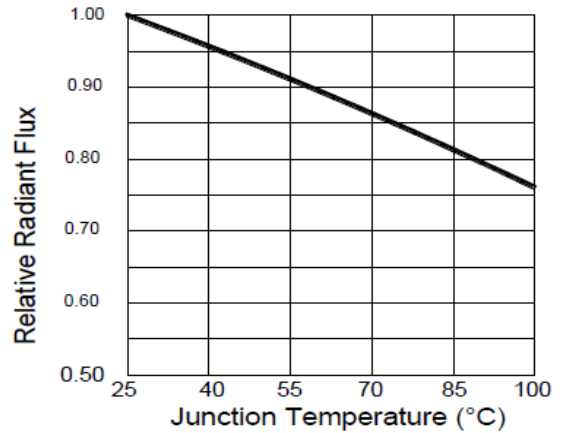
**Forward Voltage Shift VS. Tj**



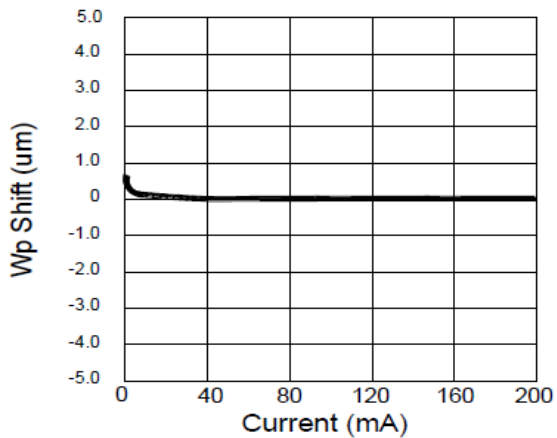
**Relative Radiant Flux VS. Current**



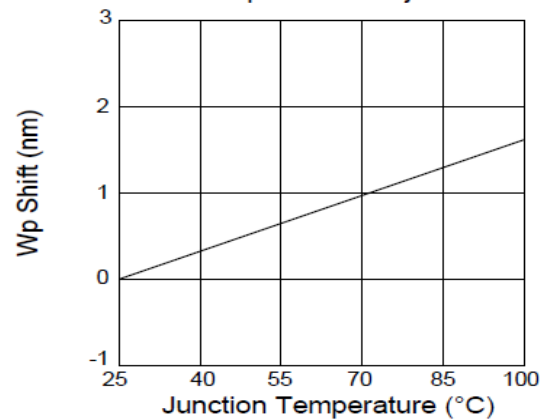
**Relative Radiant Flux VS. Tj**



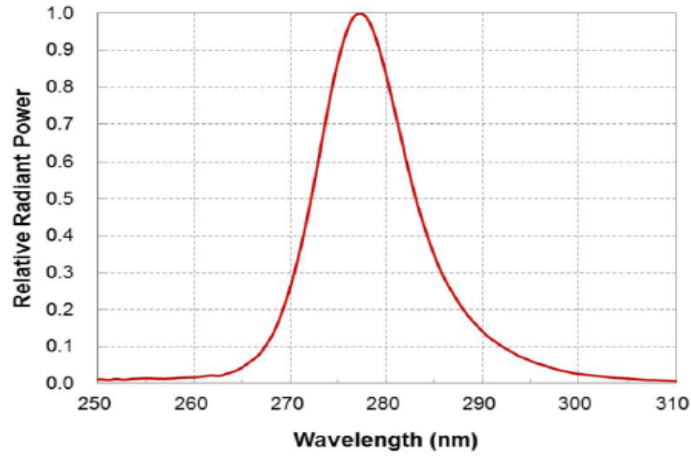
**Wp Shift VS. Current**



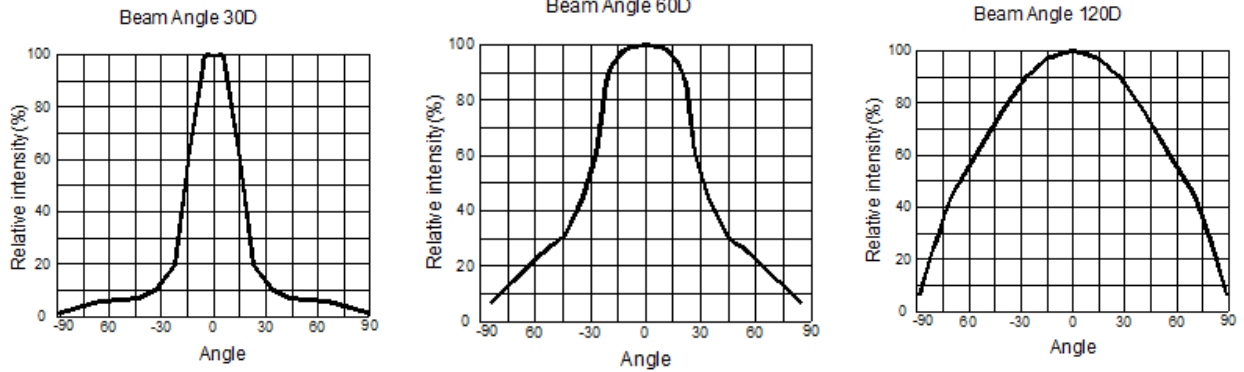
**Wp Shift VS. Tj**



**Relative Spectral Power Distribution**



**Beam Angle (2 $\theta$ 1/2)**



**Ordering Information**

| Product       | Emission Color | Viewing Angle | Orderable Part Number |
|---------------|----------------|---------------|-----------------------|
| PLH39Cx-WCU01 | U1:270~285nm   | 30°           | PLH39CAWCU01          |
|               |                | 60°           | PLH39CB-WCU01         |
|               |                | 120°          | PLH39CC-WCU01         |

### ***Peak Wavelength Binning***

| Peak Wavelength      unit: nm@150mA |            |            |
|-------------------------------------|------------|------------|
| <b>Bin Code</b>                     | <b>Min</b> | <b>Max</b> |
| <b>U1</b>                           | 270        | 285        |

**Notes:**

1. Binning current is 150mA
2. Wavelength tolerance  $\pm 2$ nm

### ***Voltage Binning***

| Voltage                      unit: V@150mA |                 |            |            |
|--|-----------------|------------|------------|
| <b>Peak Wavelength</b>                     | <b>Bin Code</b> | <b>Min</b> | <b>Max</b> |
| <b>U1: 270~285nm</b>                       | V1              | 5.0        | 7.0        |
|  | V2              | 7.0        | 9.0        |

**Notes:**

1. Binning current is 150mA

### ***Radiant Flux (Power) Binning***

| Radiant flux (Power)<br>unit: mw@150mA |                 |            |            |
|--|-----------------|------------|------------|
| <b>Peak Wavelength</b>                 | <b>Bin Code</b> | <b>Min</b> | <b>Max</b> |
| <b>U1: 270~285nm</b>                   | H1              | 8          | 16         |

**Notes:**

1. Binning current is 150mA
2. Power tolerance  $\pm 10\%$

### ***Thermal Design***

Thermal design of the end product is important. The thermal resistance between the junction and the solder point (R<sub>ΘJ-S</sub>) and the end product should be designed to minimize the thermal resistance from the solder point to ambient in order to optimize the emitter life and optical characteristics. The maximum operation current is determined by the plot of Allowable Forward Current vs. Ambient Temperature.

The junction temperature can be correlated to the thermal resistance between the junction and ambient (R<sub>ja</sub>) by the following equation.

$$T_j = T_a + R_{ja} * W$$

T<sub>j</sub> = LED junction temperature

T<sub>a</sub> = Ambient temperature

R<sub>ja</sub> = Thermal resistance between the junction and ambient

W = Input power (I<sub>F</sub>\*V<sub>F</sub>)



### ***Reflow Soldering***

The LEDs can be soldered using the parameter listed below. As a general guideline, the users are suggested to follow the recommended soldering profile provided by the manufacturer of the solder paste. Although the recommended soldering conditions are specified in the list, reflow soldering at the lowest possible temperature is preferred for the LEDs.

Suggested lead-free soldering profile:

#### Notes:

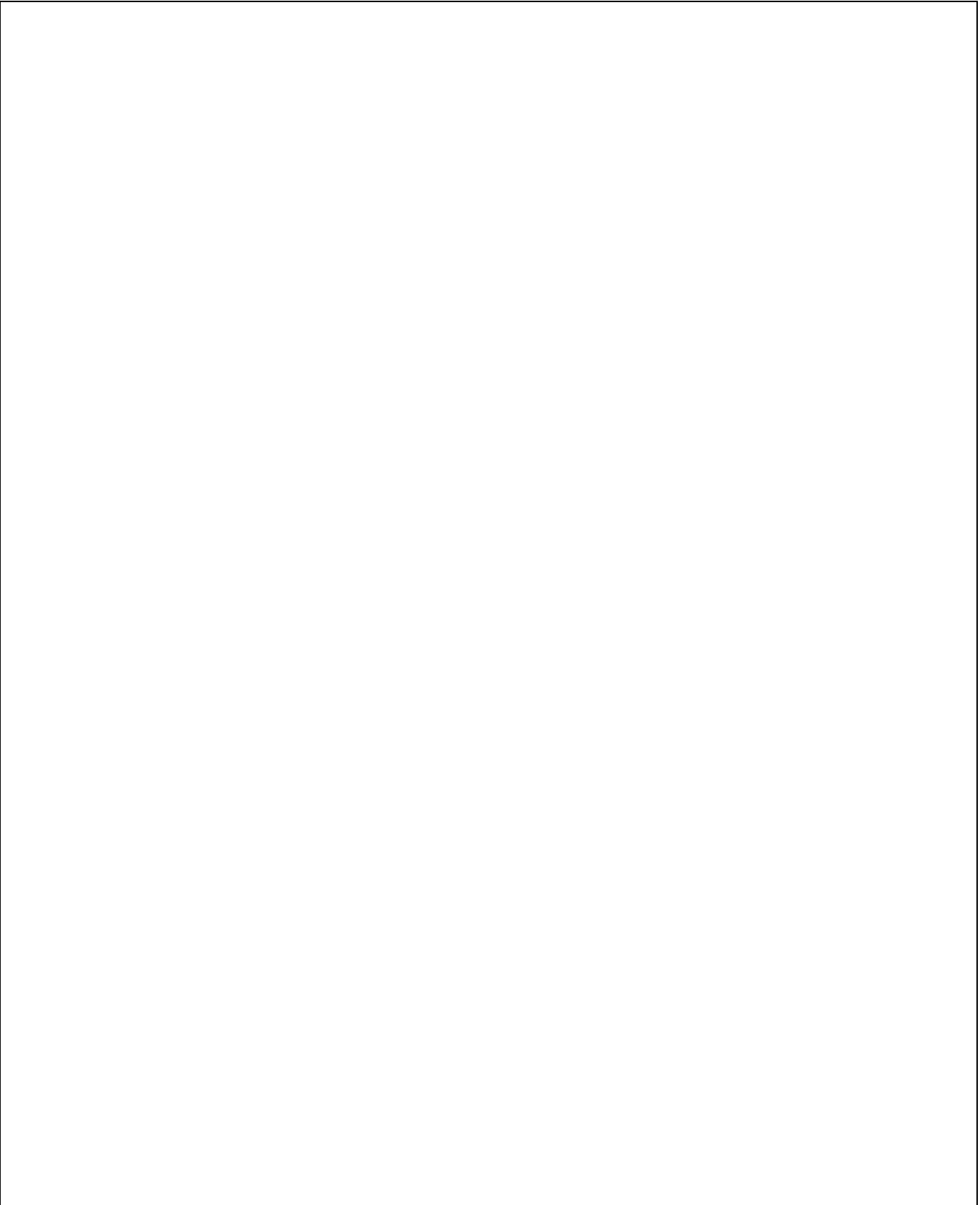
1. The recommended reflow temperature is 240°C ( $\pm 5^\circ\text{C}$ ). The maximum soldering temperature should be limited to 260°C.
2. Do not stress the silicone resin while it is exposed to high temperature.
3. The number of reflow process should not exceed 3 times.





***Packing***

Carrier tape conforms to EIA-481D.



*Precautions*

