

# Data Sheet

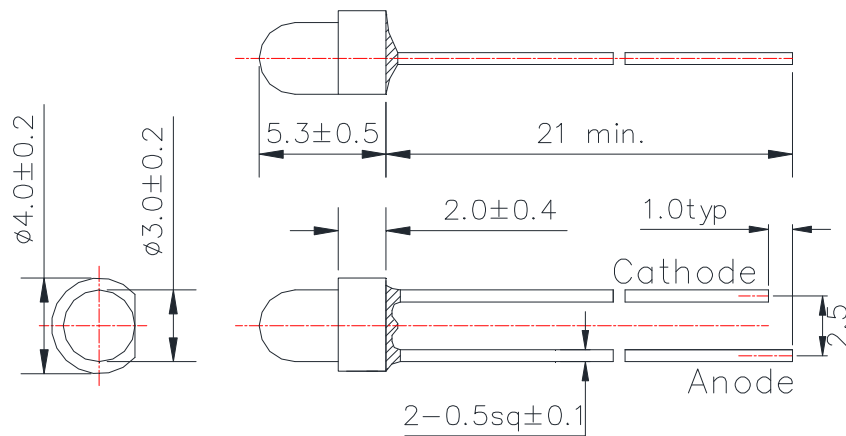
PRELIMINARY

## L1450S-36

Infrared LED Lamp

USHIO

### Outline and Internal Circuit



(Unit : mm)

### Features

- Chip Material : InGaAsP
- Chip Dimension : 300um \*300um
- Number of Chips : 1pce
- Peak Wavelength : 1450nm typ.
- Package Type :  $\phi 3$ mm clear molding
- Lead Frame : Soldered (Lead Free)
- Lens : Epoxy Resin

### Application

## Absolute Maximum Ratings (Tc=25°C)

| Item                  | Symbol | Ratings    | Unit |
|-----------------------|--------|------------|------|
| Power Dissipation     | PD     | 130        | mW   |
| Forward Current       | IF     | 100        | mA   |
| Pulse Forward Current | IFP    | 1000       | mA   |
| Reverse Voltage       | VR     | 5          | V    |
| Thermal Resistance    | Rthja  | 250        | 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)

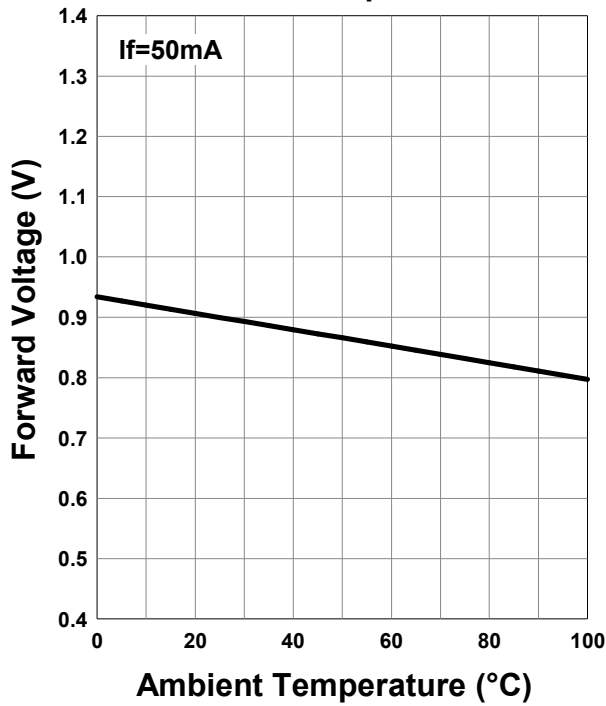
| Parameter            | Symbol          | Min  | Typ      | Max  | Unit  | Test Condition |
|----------------------|-----------------|------|----------|------|-------|----------------|
| Forward Voltage      | VF              |      | 0.9      | 1.3  | V     | IF=50mA        |
|                      | VFP             |      | 1.7      |      |       | IFP=1A         |
| Total Radiated Power | PO              |      | 4.8      |      | mW    | IF=50mA        |
|                      |                 |      | 30       |      |       | IFP=1A         |
| Radiant Intensity    | IE              |      | 10       |      | mW/sr | IF=50mA        |
|                      |                 |      | 62       |      |       | IFP=1A         |
| Peak Wavelength      | $\lambda_p$     | 1400 |          | 1500 | nm    | IF=50mA        |
| Half Width           | $\Delta\lambda$ |      | 110      |      | nm    | IF=50mA        |
| Viewing Half Angle   | $\theta_{1/2}$  |      | $\pm 35$ |      | deg.  | IF=50mA        |
| Rise Time            | tr              |      | 30       |      | ns    | IF=50mA        |
| Fall Time            | tf              |      | 70       |      | ns    | IF=50mA        |

‡ Radiated Power is measured by G8370-85.

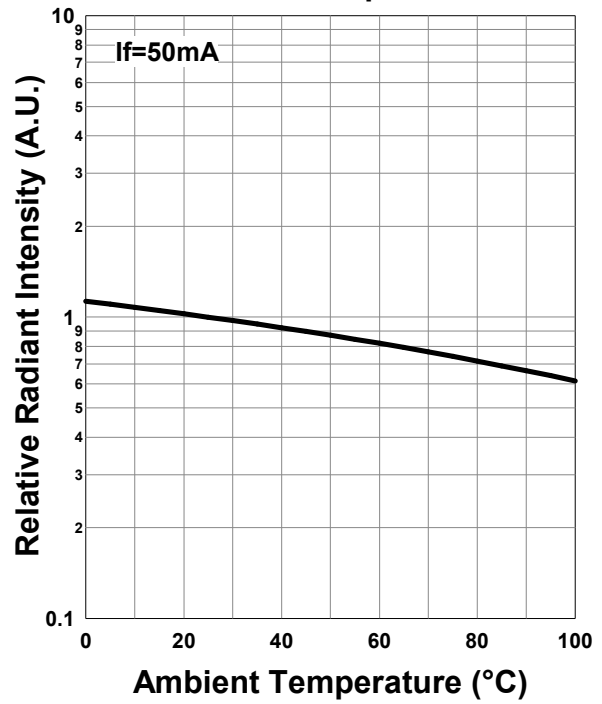
‡ Radiant Intensity is measured by Ando Optical Multi Meter AQ2140 & AQ2742.



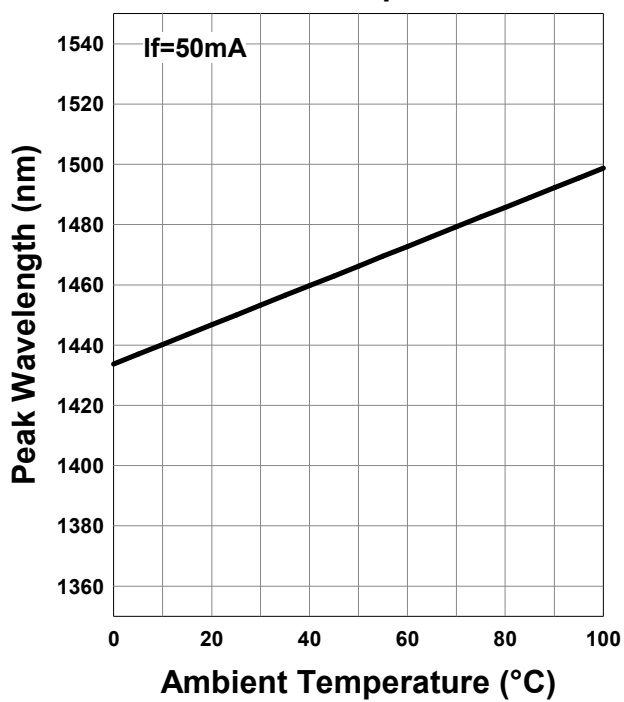
**Forward Voltage - Ambient Temperature**



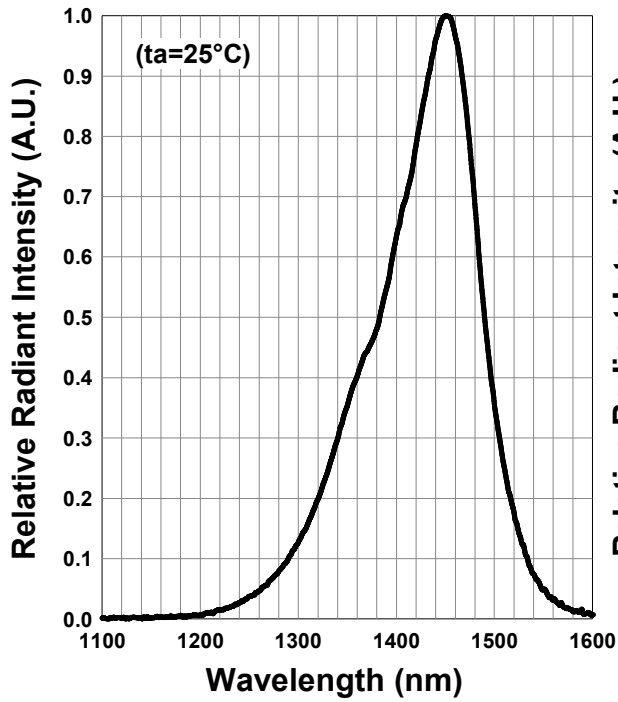
**Relative Radiant Intensity - Ambient Temperature**



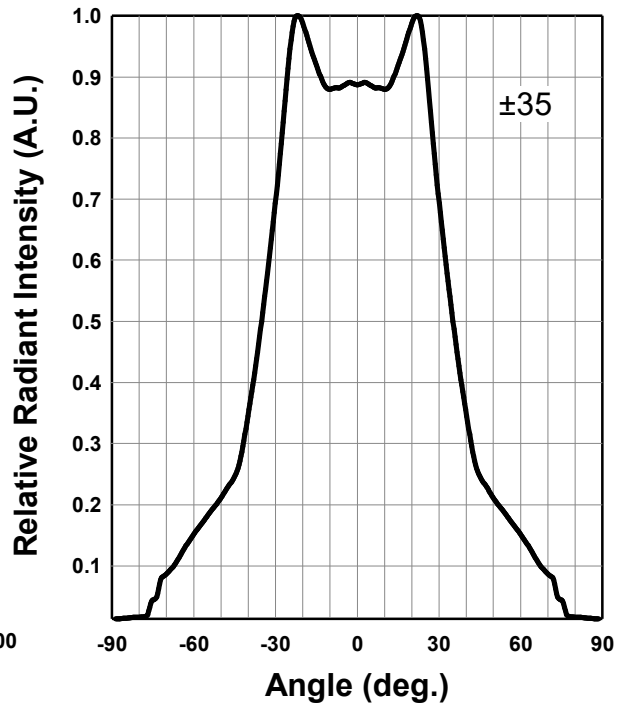
**Peak Wavelength - Ambient Temperature**



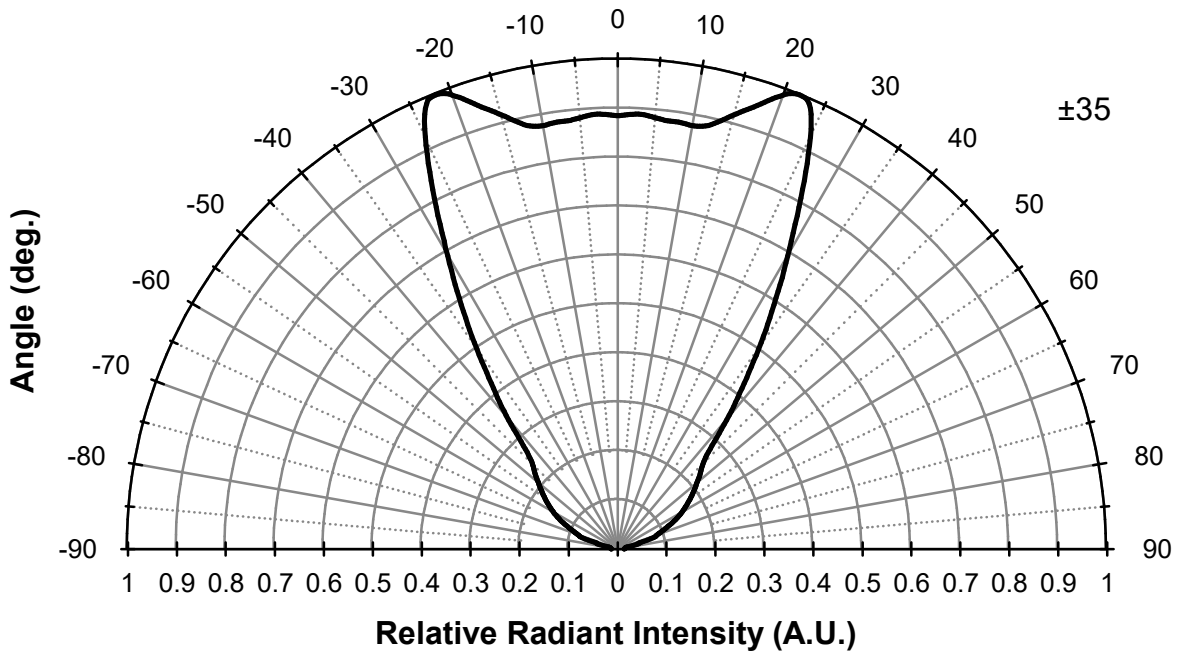
**Relative Spectral Emission**



**Radiation Characteristics**



**Radiation Characteristics**



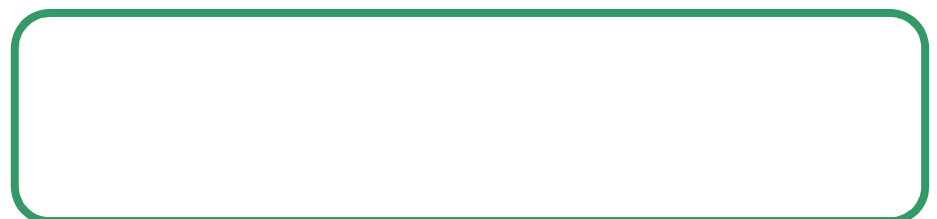
## Disclaimer

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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.

Products shown in this catalog are intended to be used for general electronic equipment. Products are not guaranteed for applications where product malfunction or failure may cause personal injury or death, including but not limited to life-supporting / saving devices, medical devices, safety devices, airplanes, aerospace equipment, automobiles, traffic control systems, and nuclear reactor control systems.



\*Effective July 2016, Ushio Epitex Inc. is now USHIO OPTO SEMICONDUCTORS, INC.