

Data Sheet

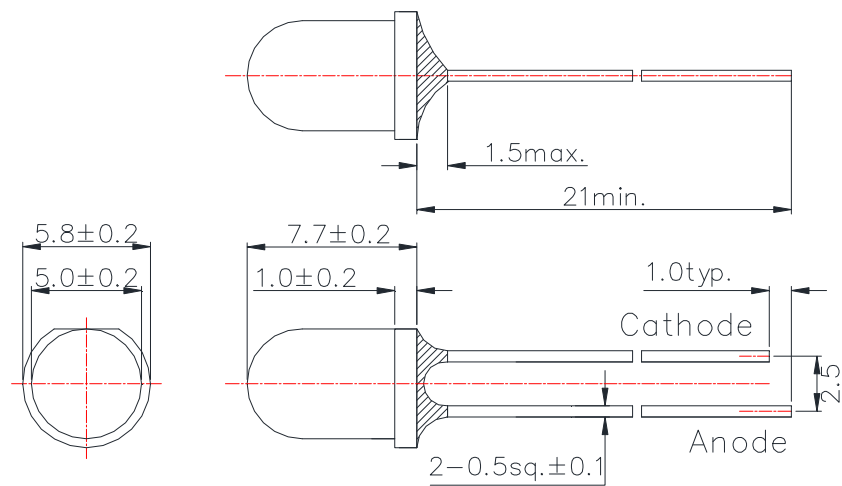
PRELIMINARY

L680-04AU

Infrared LED Lamp

USHIO

Outline and Internal Circuit



(Unit : mm)

Features

- Chip Material : AlGaAs
- Chip Dimension : $350 \mu\text{m} * 350 \mu\text{m}$
- Number of Chips : 1pce
- Peak Wavelength : 680 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 | Ratings | Unit |
|-----------------------|--------|------------|------|
| Power Dissipation | PD | 120 | mW |
| Forward Current | IF | 50 | mA |
| Pulse Forward Current | IFP | 200 | mA |
| Reverse Voltage | VR | 5 | V |
| Thermal Resistance | Rthja | 220 | 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)

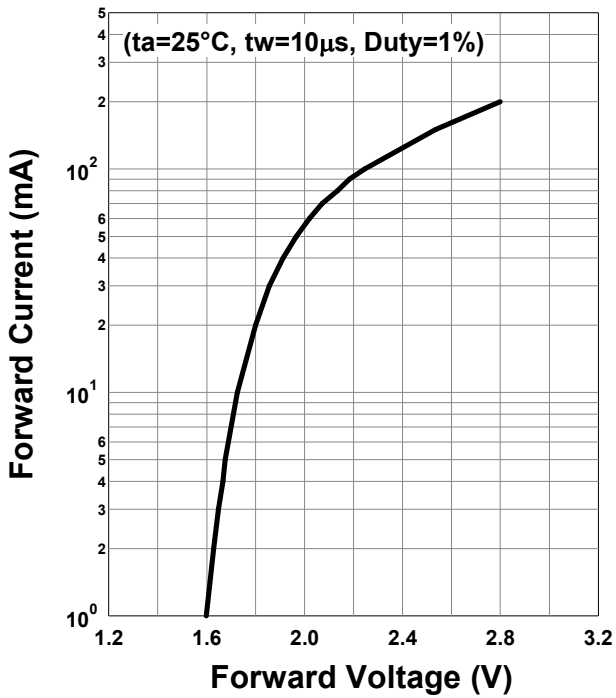
| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|----------------------|-----------------|-----|----------|-----|-------|-------------------|
| Forward Voltage | VF | | 1.8 | 2.3 | V | IF=20mA |
| | | | 2.0 | | | IF=50mA T=20ms |
| | VFP | | 2.8 | | | IFP=200mA |
| Total Radiated Power | PO | | 5.8 | | mW | IF=20mA |
| | | | 16 | | | IF=50mA T=20ms |
| | | | 67 | | | IFP=200mA |
| Radiant Intensity | IE | | 22 | | mW/sr | IF=20mA |
| | | | 61 | | | IF=50mA T=20ms |
| | | | 250 | | | IFP=200mA |
| Peak Wavelength | λ_p | 670 | | 690 | nm | IF=20mA |
| Half Width | $\Delta\lambda$ | | 24 | | nm | IF=20mA |
| Viewing Half Angle | $\theta_{1/2}$ | | ± 16 | | deg. | IF=20mA |
| Rise Time | tr | | 10 | | ns | IF=20mA |
| Fall Time | tf | | 10 | | ns | IF=20mA |

‡ Radiated Power is measured by S3584-08.

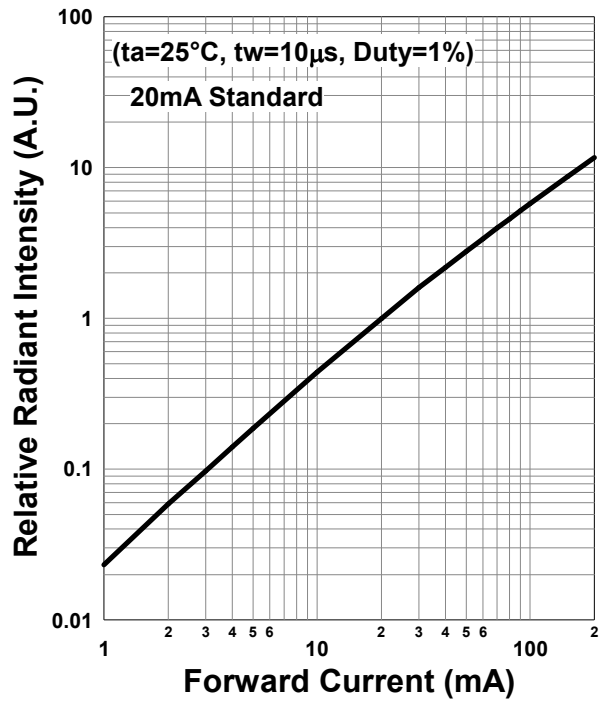
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

Typical Characteristic Curves

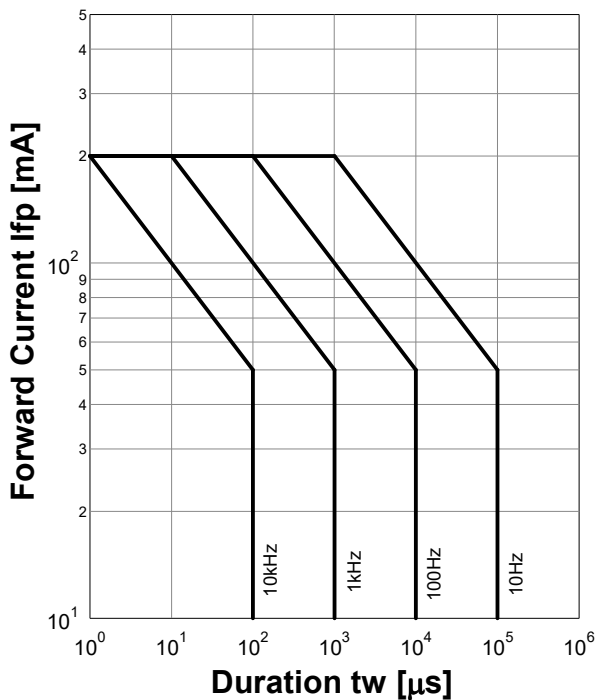
Forward Current - Forward Voltage



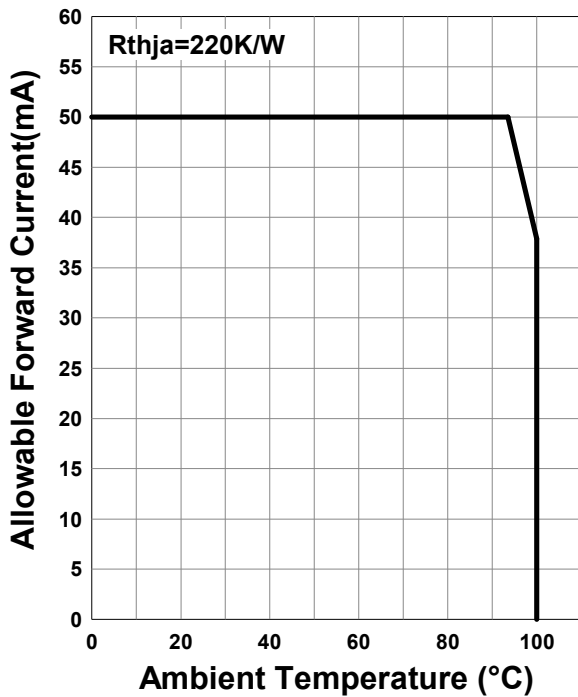
Relative Radiant Intensity - Forward Current



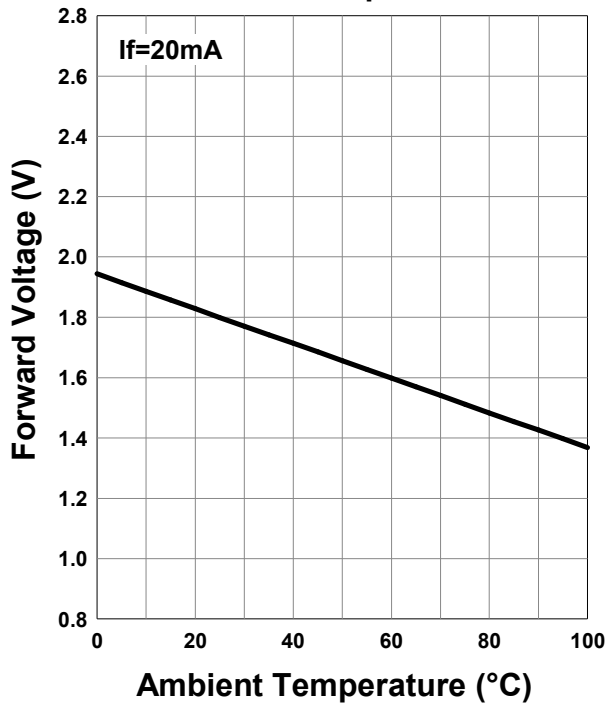
Forward Current - Pulse Duration



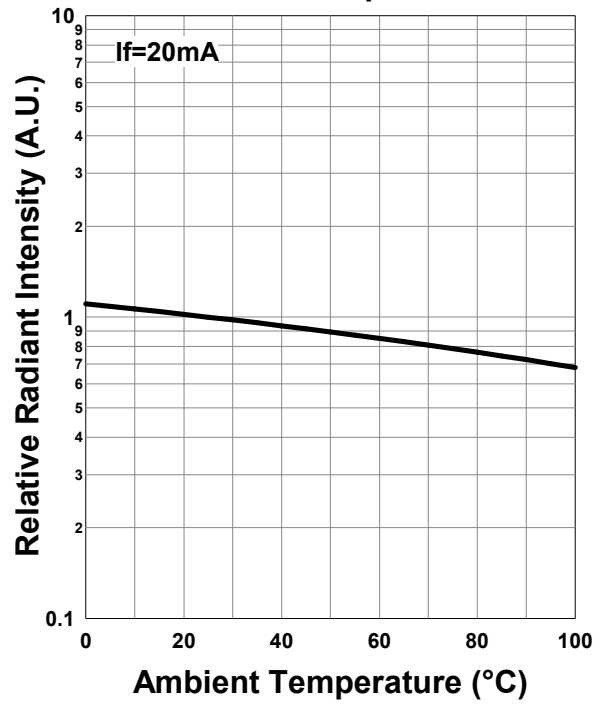
Allowable Forward Current - Ambient Temperature



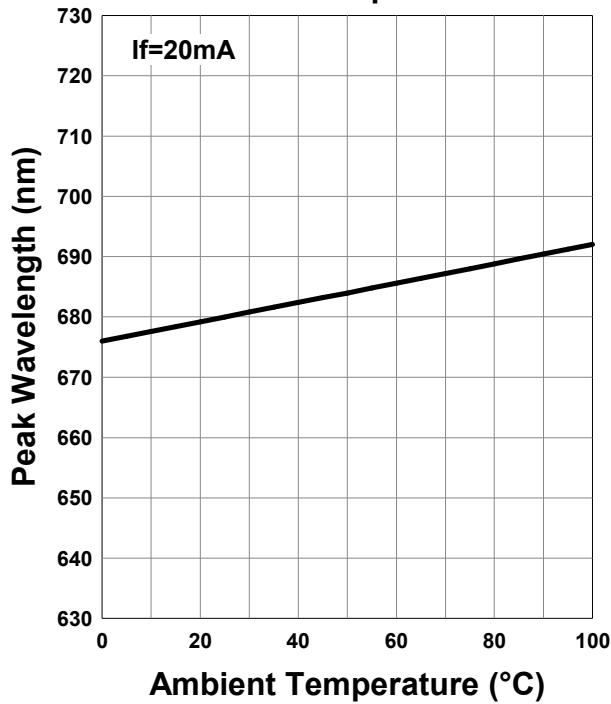
Forward Voltage - Ambient Temperature



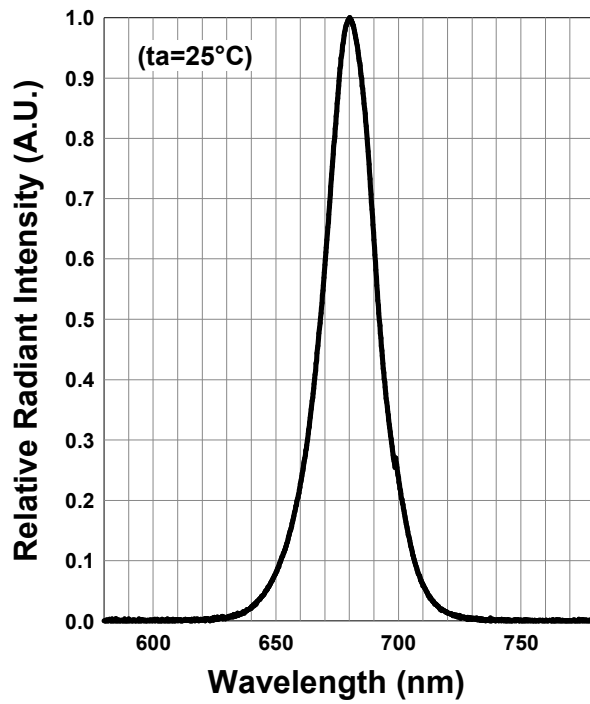
Relative Radiant Intensity - Ambient Temperature



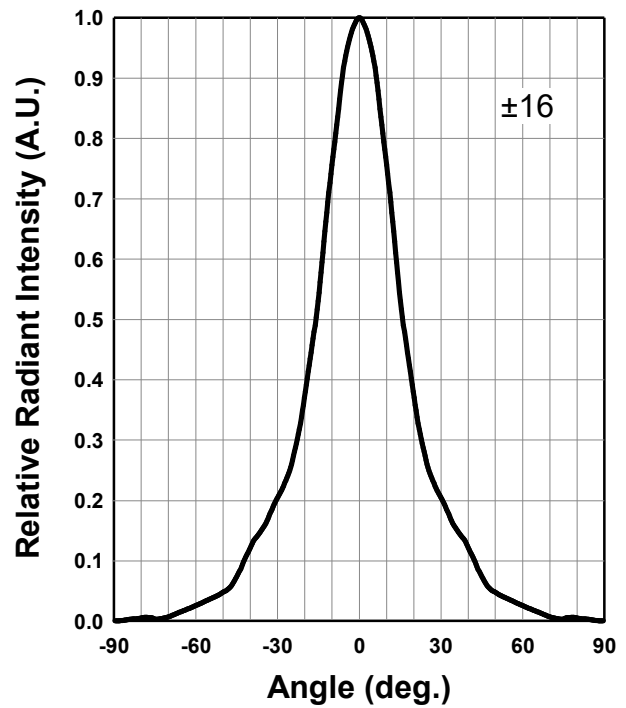
Peak Wavelength - Ambient Temperature



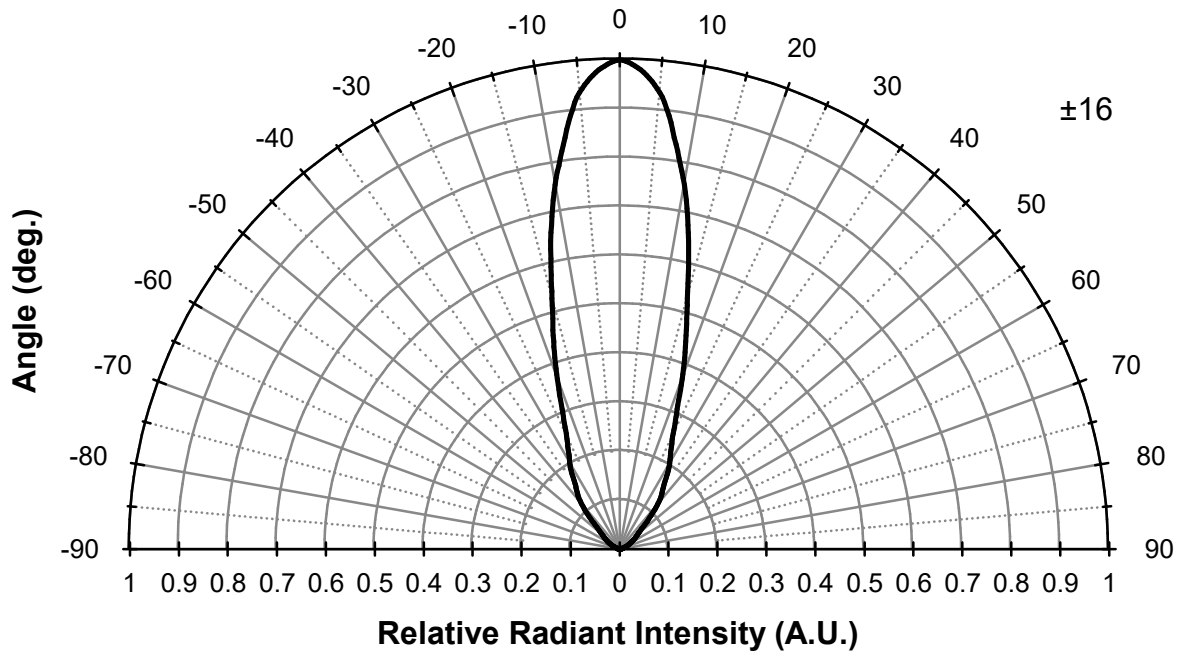
Relative Spectral Emission



Radiation Characteristics



Radiation Characteristics



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.

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