

# Data Sheet

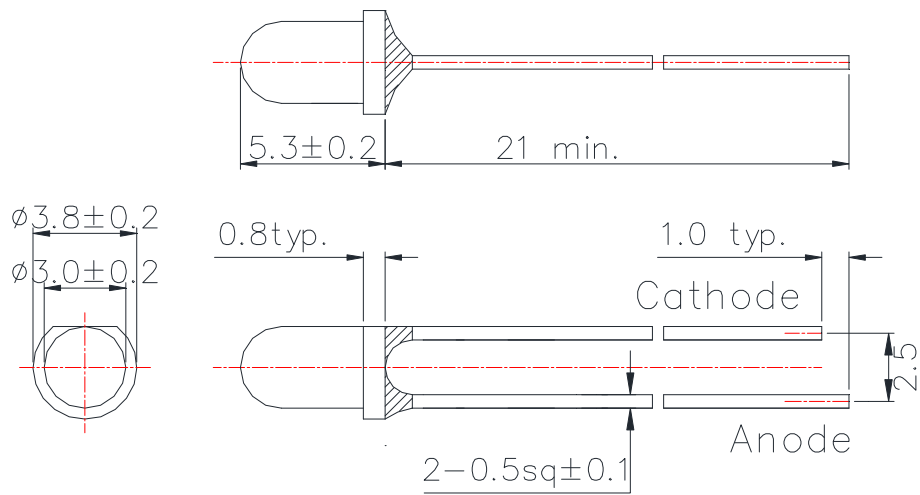
PRELIMINARY

## L450R-33

Blue LED Lamp

USHIO

### Outline and Internal Circuit



(Unit : mm)

### Features

- Chip Material : InGaN
- Chip Dimension :  $350 \mu\text{m} * 350 \mu\text{m}$
- Number of Chips : 1pc
- Peak Wavelength :  $450 \text{ nm typ.}$
- Package Type :  $\phi 3 \text{ mm}$  clear molding
- Lead Frame : Soldered (Lead Free)
- Lens : UV Resin

### Application

## Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	200	mW
Forward Current	IF	50	mA
Pulse Forward Current	IFP	100	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	220	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-20 ~ +100	°C
Storage Temperature	Tstg	-20 ~ +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)

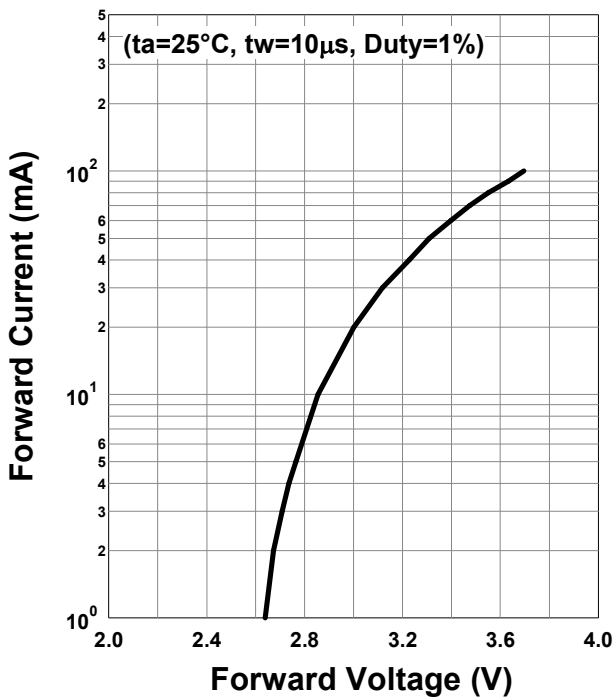
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		3.0	4.0	V	IF=20mA
	VFP		3.7			IFP=100mA
Total Radiated Power	PO		24		mW	IF=20mA
			92			IFP=100mA
Radiant Intensity	IE		200		mW/sr	IF=20mA
			770			IFP=100mA
Luminous Flux	ΦV		850		mlm	IF=20mA
Peak Wavelength	λp	440		460	nm	IF=20mA
Dominant Wavelength	λD		455		nm	IF=20mA
Half Width	Δλ		19		nm	IF=20mA
Viewing Half Angle	θ1/2		±11		deg.	IF=20mA
Rise Time	tr		30		ns	IF=20mA
Fall Time	tf		30		ns	IF=20mA

‡ Radiated Power is measured by S3584-08.

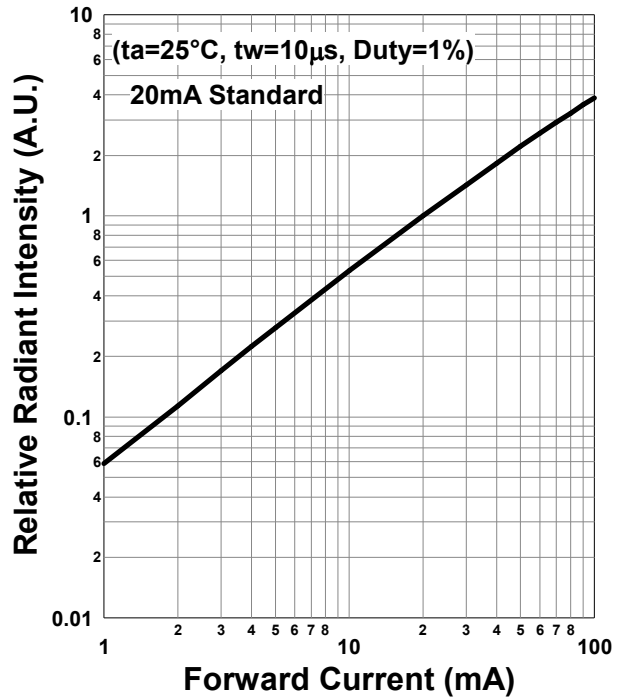
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

## Typical Characteristic Curves

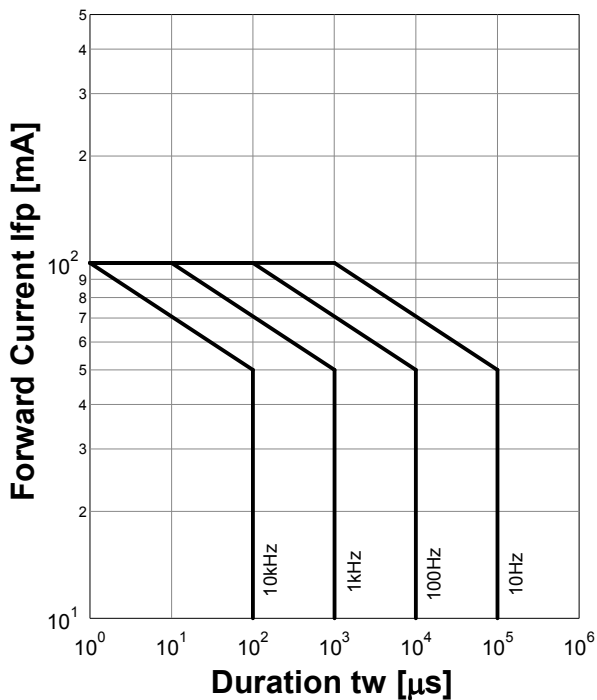
### Forward Current - Forward Voltage



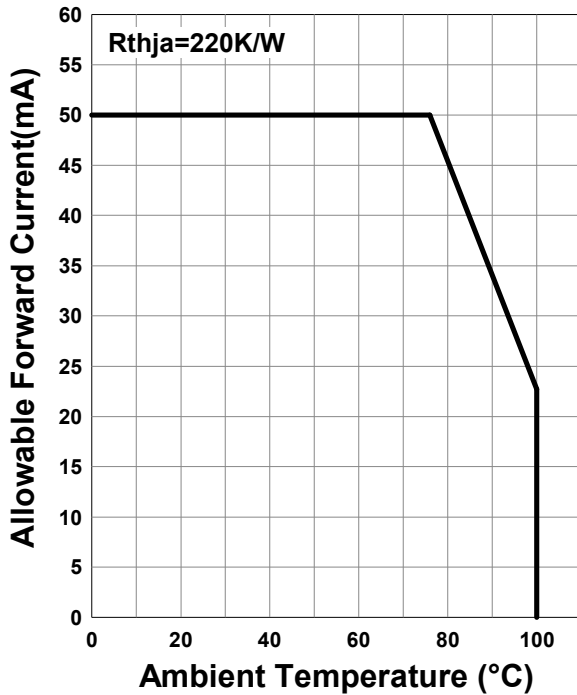
### Relative Radiant Intensity - Forward Current



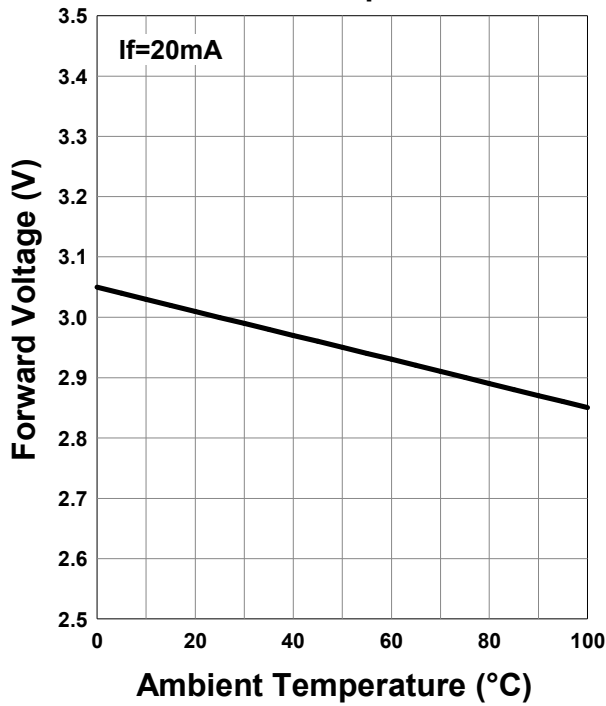
### Forward Current - Pulse Duration



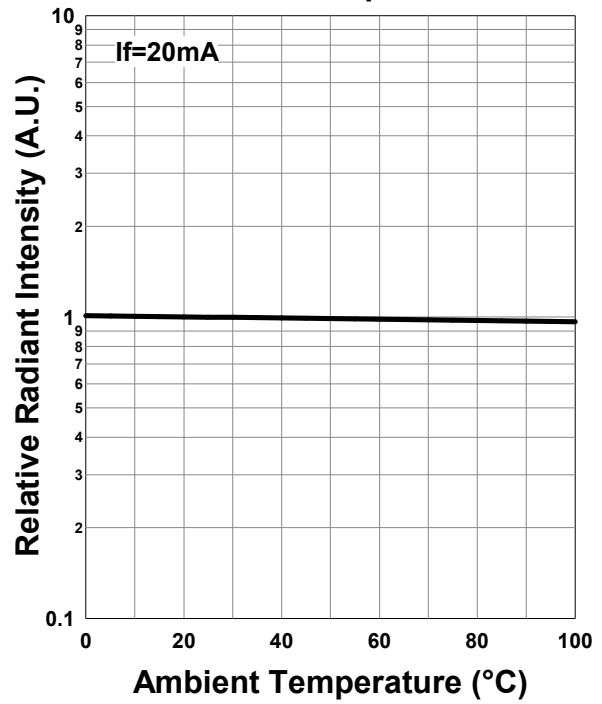
### Allowable Forward Current - Ambient Temperature



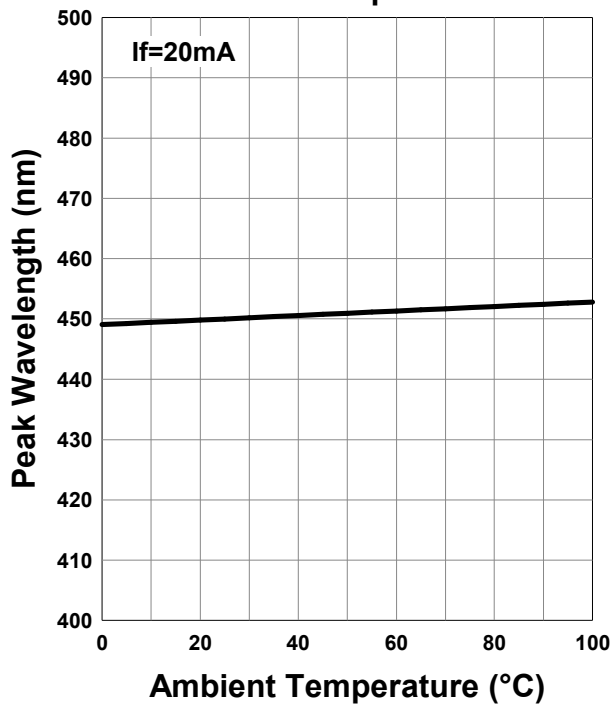
**Forward Voltage - Ambient Temperature**



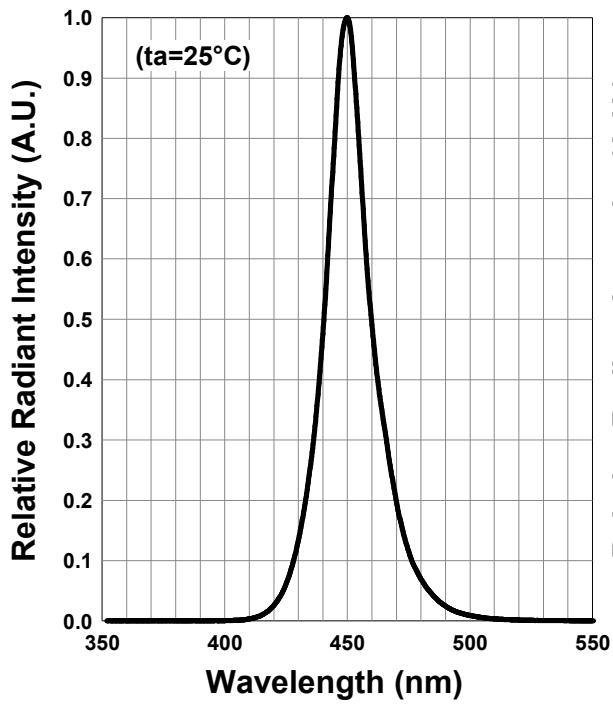
**Relative Radiant Intensity - Ambient Temperature**



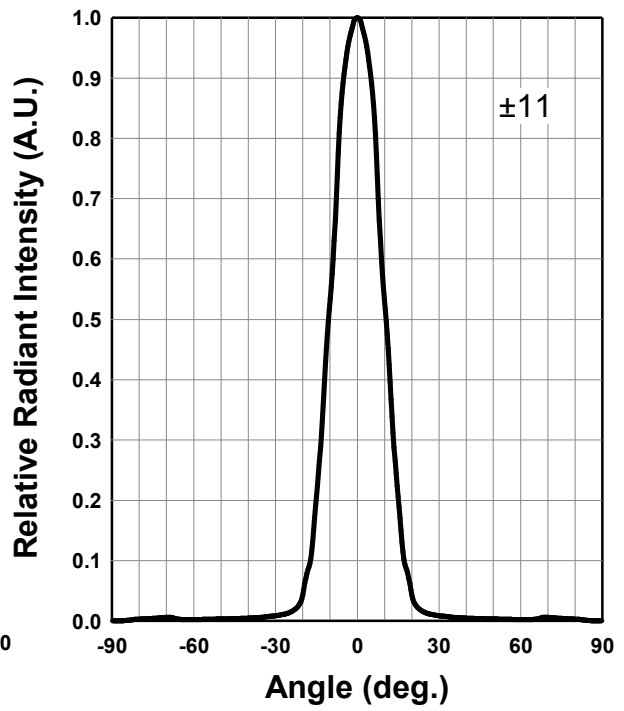
**Peak Wavelength - Ambient Temperature**



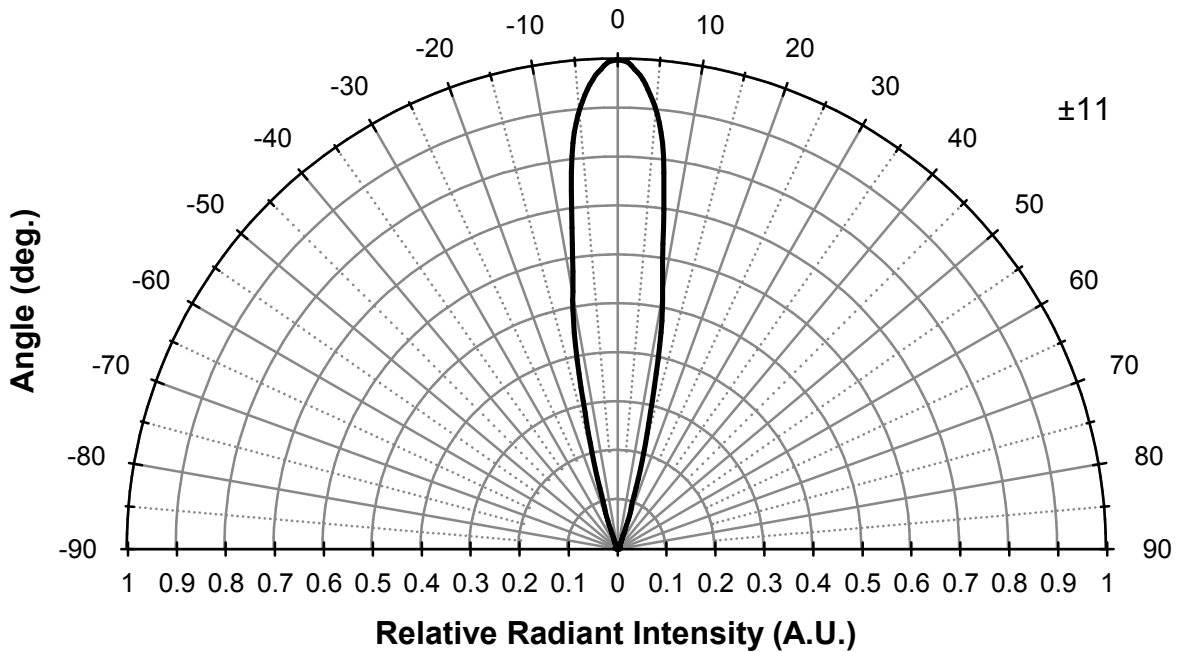
### Relative Spectral Emission



### 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.