

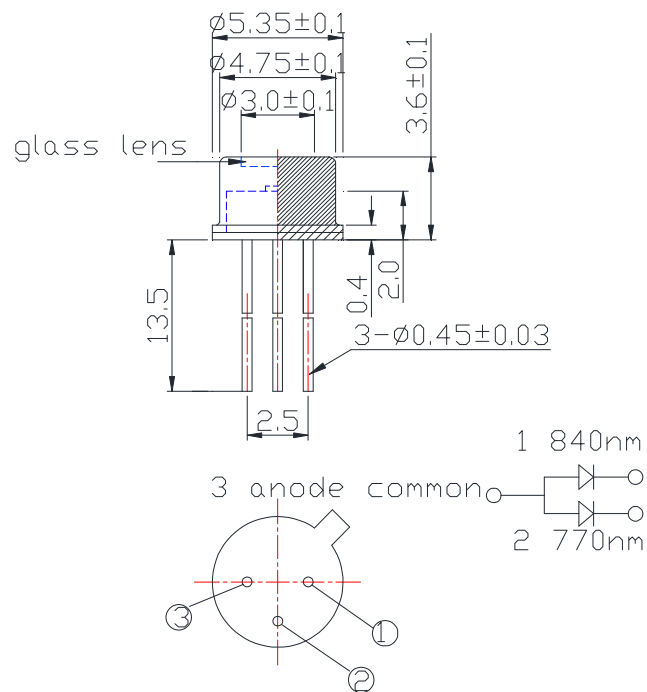
# Data Sheet

## L770/840-40D54

Multi Wavelength LED Lamp

USHIO

### Outline and Internal Circuit



(Unit : mm)

### Features

- Non-hermetic package
- Chip Material : AlGaAs
- Chip Dimension : 400um \* 400um
- Number of Chips : 2pcs
- Peak Wavelength: 770nm / 840nm typ.
- Stem: TO-18 3pin type
- Lens : Flat Glass
- CAP : Gold plated

### Application

## 770nm

### Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	200	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	280	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

‡Pulse Forward Current condition: Duty 1% and Pulse Width=10us.

‡Soldering condition: Soldering condition must be completed within 5 seconds at 250°C and is allowed in the area apart 3mm from the bottom of the lamp.

### Optical and Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.8	2.0	V	IF=50mA
	VFP		3.8			IFP=500mA
Total Radiated Power	PO		10		mW	IF=50mA
			100			IFP=500mA
Peak Wavelength	$\lambda_p$	760		780	nm	IF=50mA
Half Width	$\Delta\lambda$		26		nm	IF=50mA
Rise Time	tr		10		ns	IF=50mA
Fall Time	tf		15		ns	IF=50mA

‡ Radiated Power is measured by S3584-08.

## 840nm

### Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	PD	180	mW
Forward Current	IF	100	mA
Pulse Forward Current	IFP	500	mA
Reverse Voltage	VR	5	V
Thermal Resistance	Rthja	280	K/W
Junction Temperature	Tj	120	°C
Operating Temperature	Topr	-40 ~ +100	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	TSOL	250	°C

‡Pulse Forward Current condition: Duty 1% and Pulse Width=10us.

‡Soldering condition: Soldering condition must be completed within 5 seconds at 250°C and is allowed in the area apart 3mm from the bottom of the lamp.

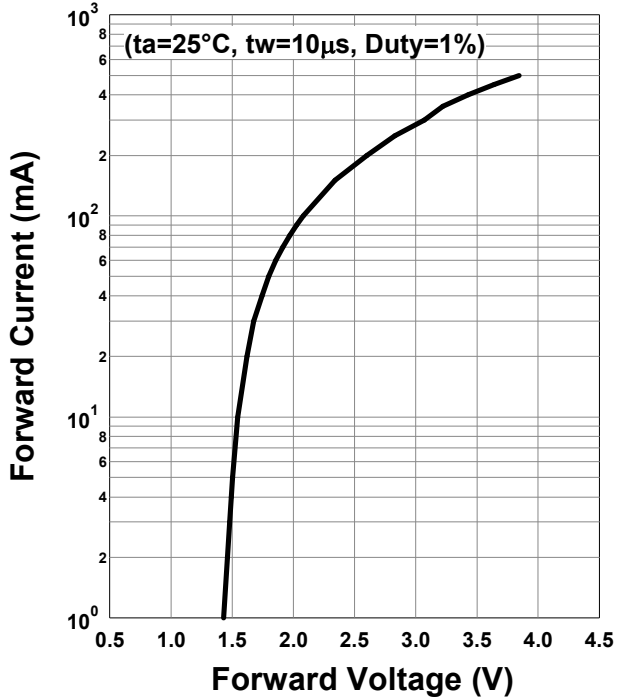
### Optical and Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.7	1.8	V	IF=50mA
	VFP		2.6			IFP=500mA
Total Radiated Power	PO		9		mW	IF=50mA
			89			IFP=500mA
Peak Wavelength	$\lambda_p$	830		850	nm	IF=50mA
Half Width	$\Delta\lambda$		33		nm	IF=50mA
Rise Time	tr		10		ns	IF=50mA
Fall Time	tf		15		ns	IF=50mA

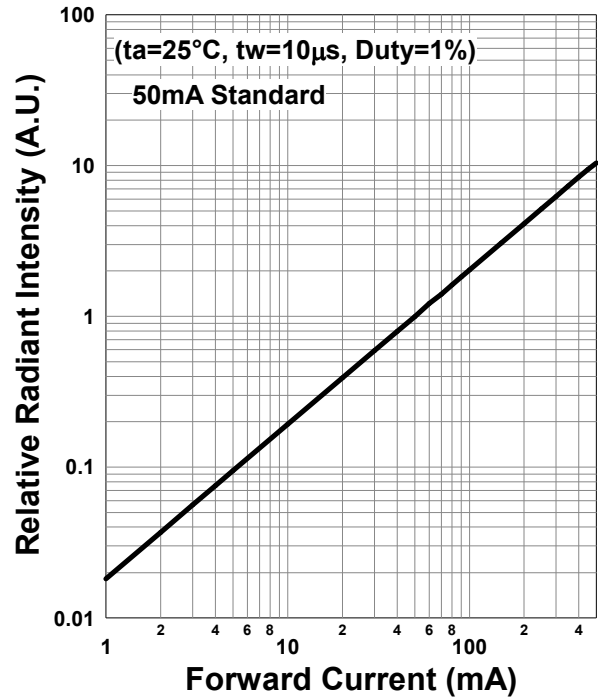
‡ Radiated Power is measured by S3584-08.

Typical Characteristic Curves  
770nm

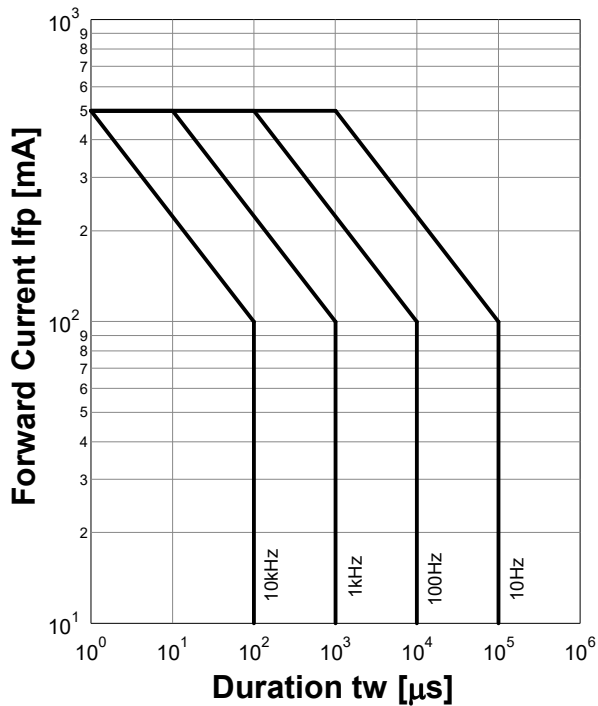
Forward Current - Forward Voltage



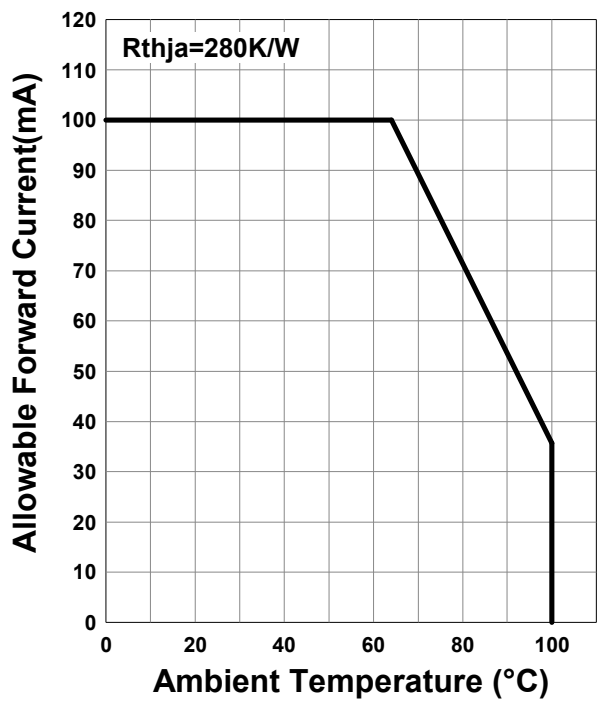
Relative Radiant Intensity - Forward Current



Forward Current - Pulse Duration



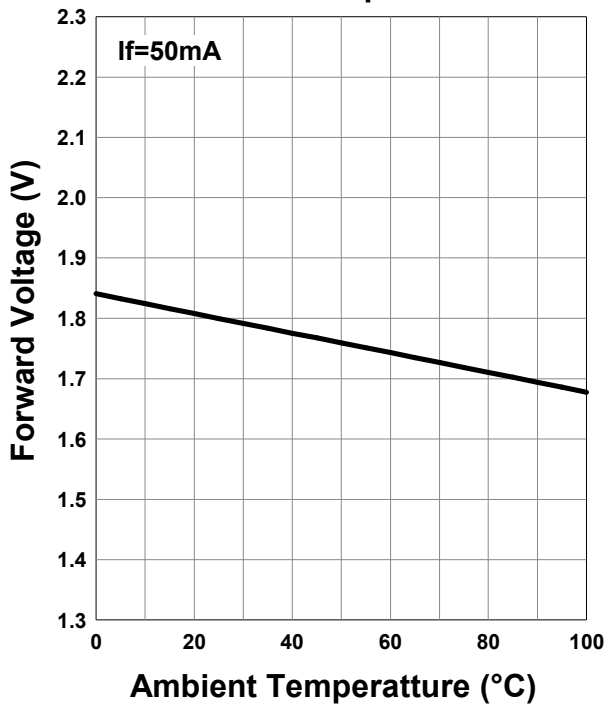
Allowable Forward Current - Ambient Temperature



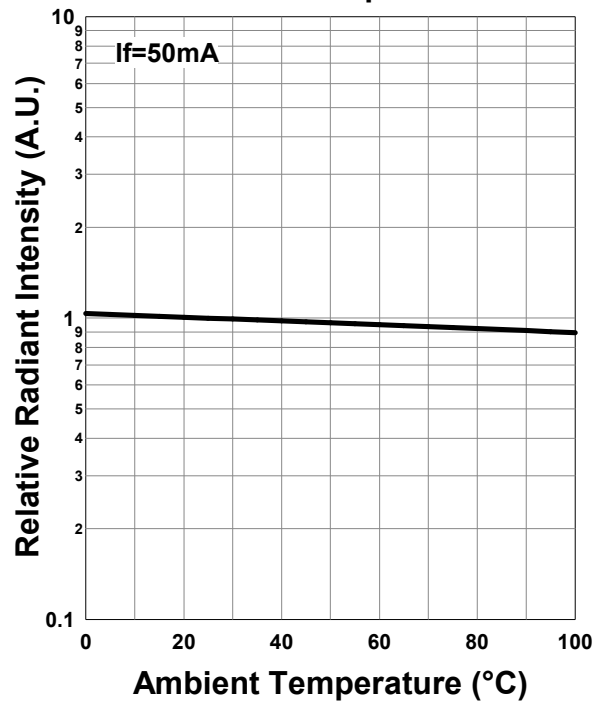
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770nm

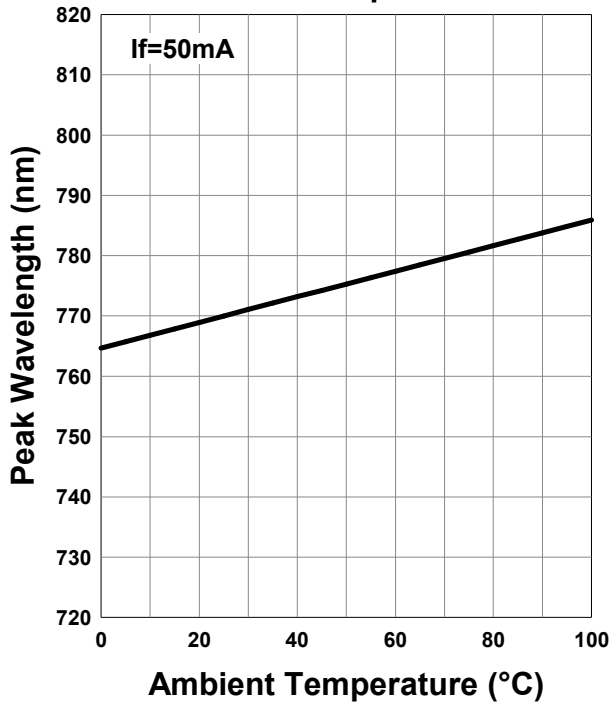
**Forward Voltage - Ambient Temperature**



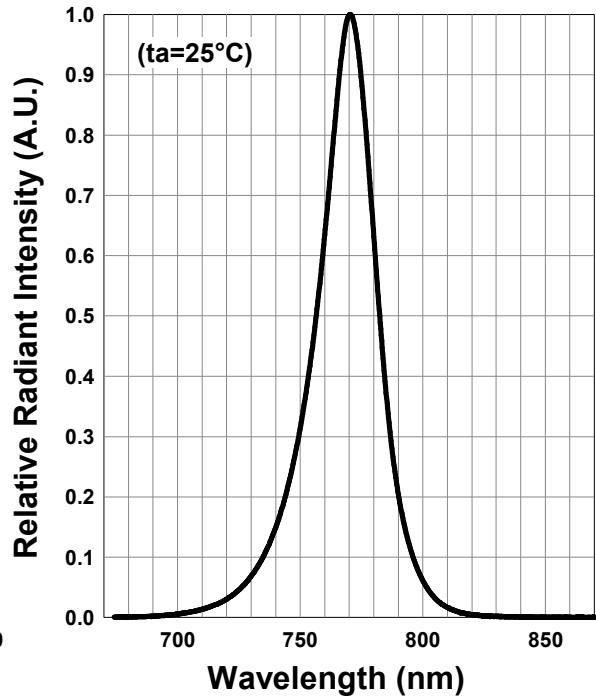
**Relative Radiant Intensity - Ambient Temperature**



**Peak Wavelength - Ambient Temperature**



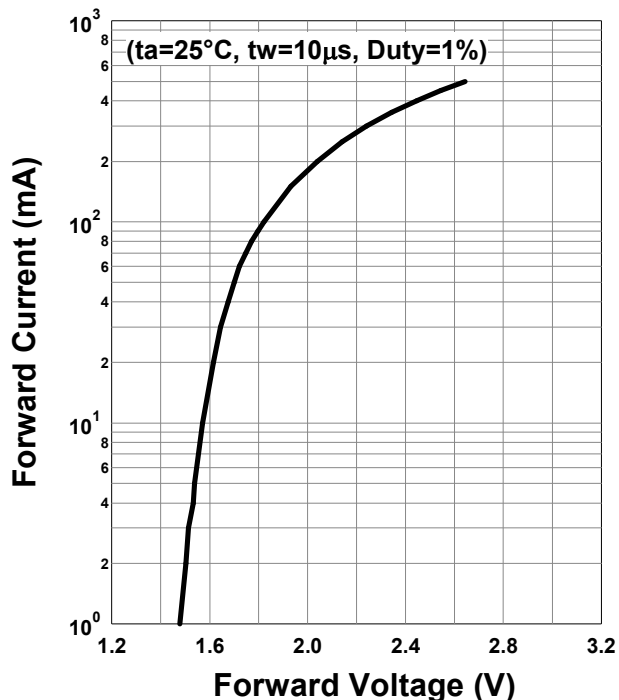
**Relative Spectral Emission**



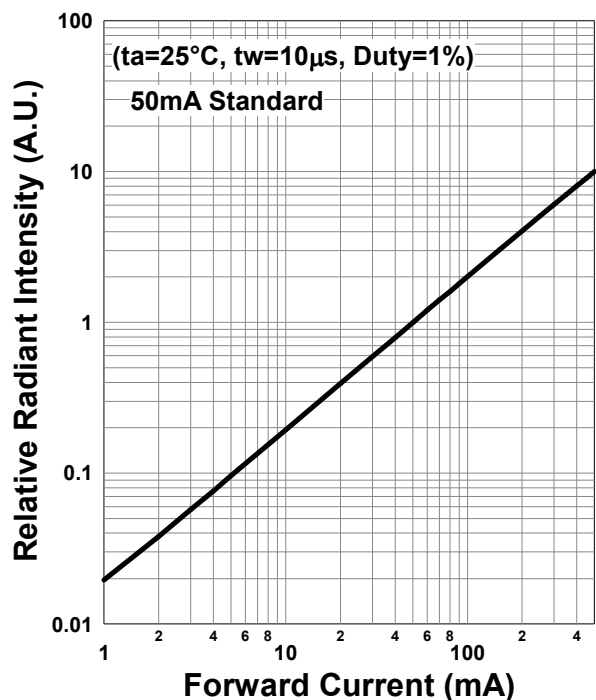
## Typical Characteristic Curves

### 840nm

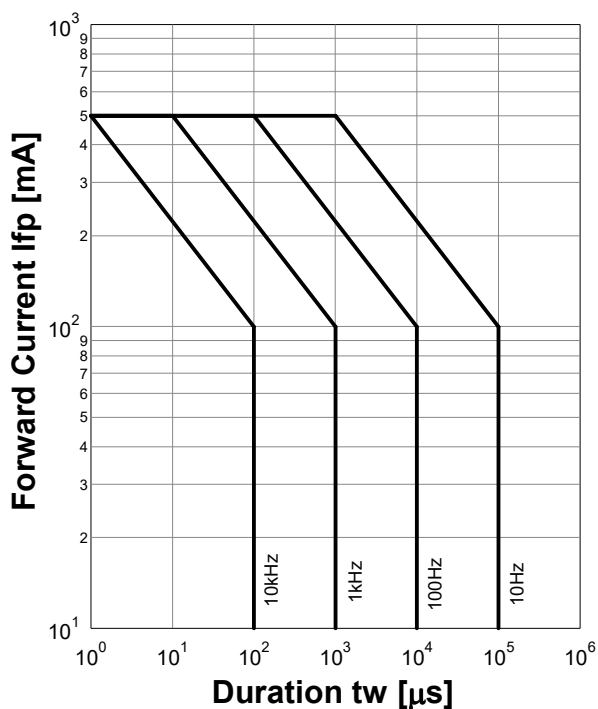
#### Forward Current - Forward Voltage



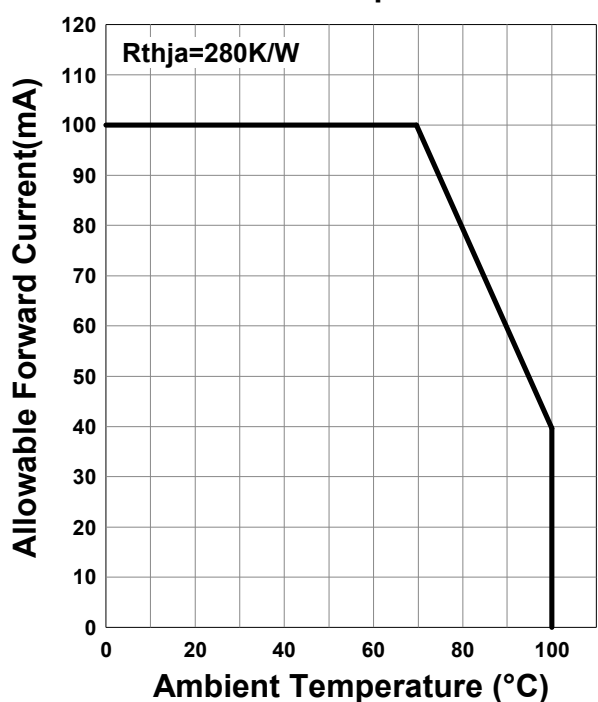
#### Relative Radiant Intensity - Forward Current



#### Forward Current - Pulse Duration



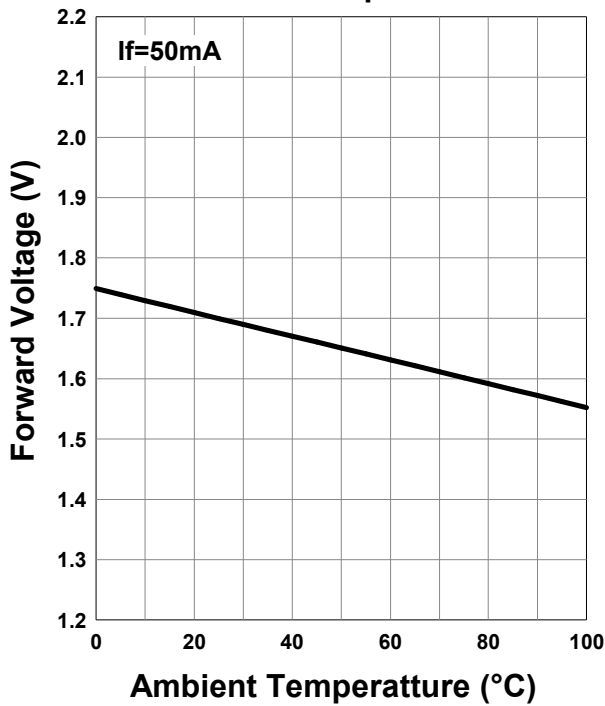
#### Allowable Forward Current - Ambient Temperature



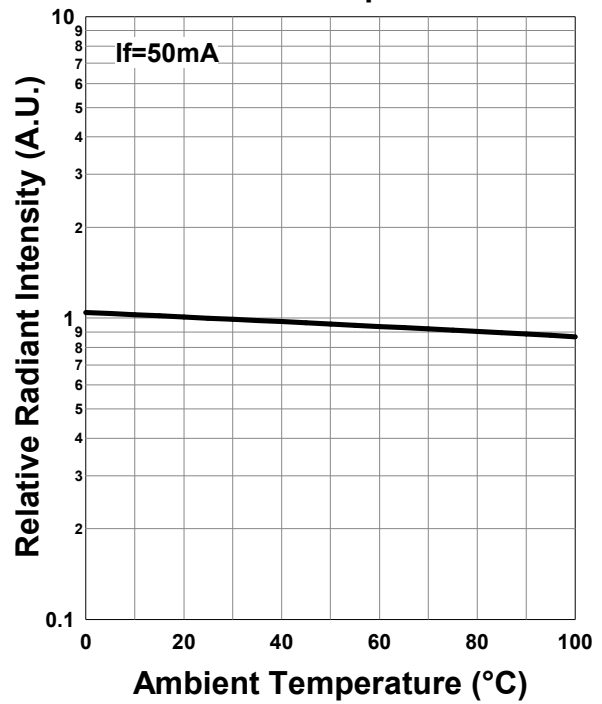
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840nm

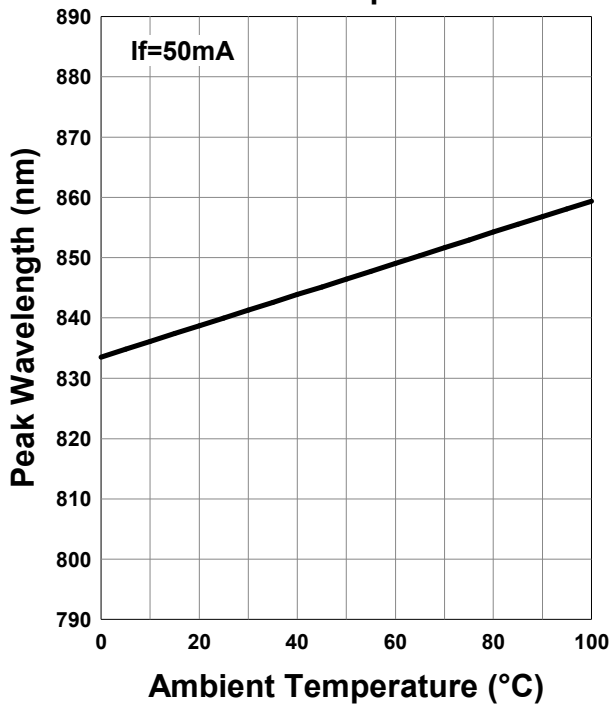
**Forward Voltage - Ambient Temperature**



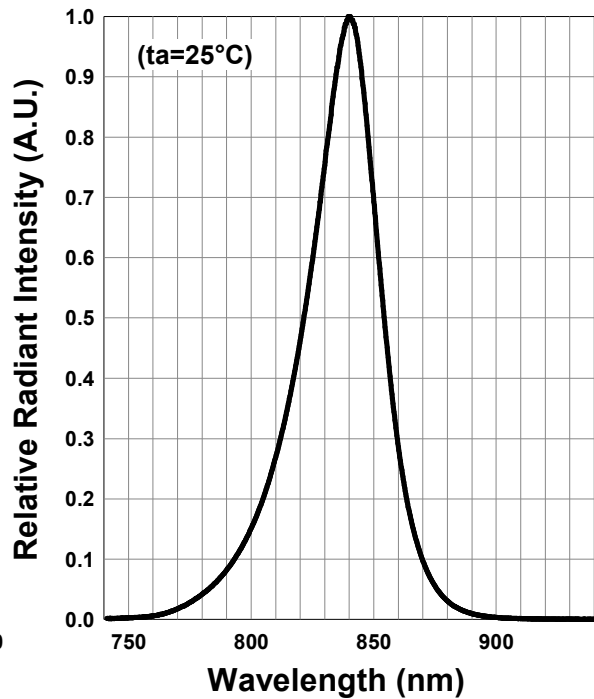
**Relative Radiant Intensity - Ambient Temperature**



**Peak Wavelength - Ambient Temperature**



**Relative Spectral Emission**



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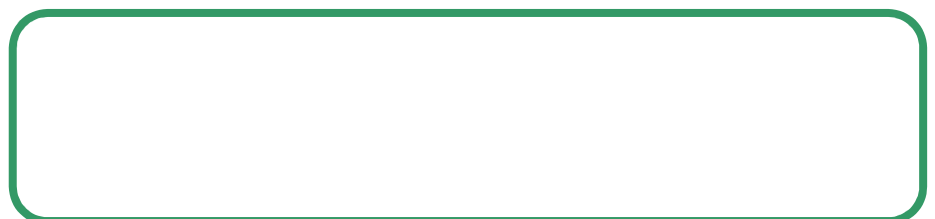
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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements.

Product data and parameters may vary by user application and over time.

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