

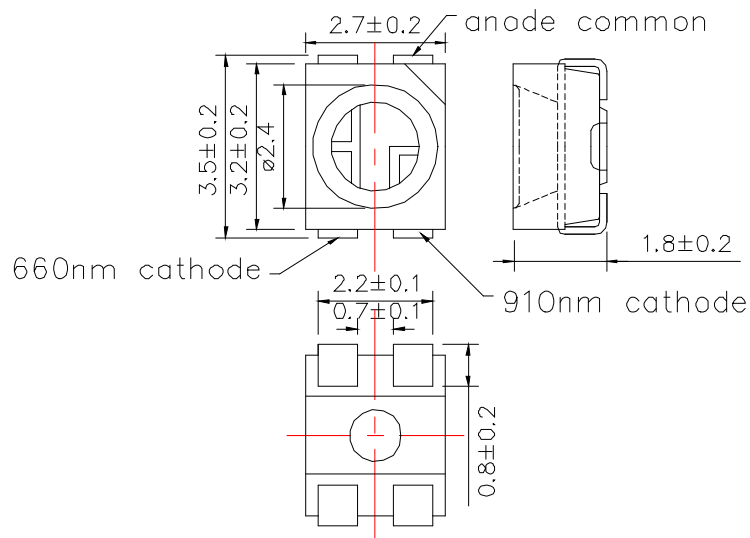
# Data Sheet

## SMT660N/910

High Performance TOP LED

USHIO

### Outline and Internal Circuit



(Unit : mm)

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### Features

- Chip Material : AlGaInP / AlGaAs
- Number of Chips : 2pcs
- Peak Wavelength : 660nm / 905nm
- Lead Frame Die : Silver Plated
- Package Resin : PA6T
- Lens : Silicone or Epoxy Resin

### Application

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

Item	Symbol	Ratings		Unit
		660nm	910nm	
Power Dissipation	PD	120	140	mW
Forward Current	IF	50	100	mA
Pulse Forward Current	IFP	300	500	mA
Reverse Voltage	VR	5		V
Thermal Resistance	Rthja	80		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 with 5 seconds at 250°C

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

### ◆660nm

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		2.0	2.4	V	IF=20mA
	VFP		3.4			IFP=300mA
Total Radiated Power	PO		9		mW	IF=20mA
			135			IFP=300mA
Radiant Intensity	IE		3.6		mW/sr	IF=20mA
			54			IFP=300mA
Luminous Flux	$\Phi_V$		1000		mlm	IF=20mA
Peak Wavelength	$\lambda_p$	650	660	670	nm	IF=20mA
Half Width	$\Delta\lambda$		16		nm	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.

### ◆910nm

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF		1.3	1.4	V	IF=20mA
	VFP		2.3			IFP=500mA
Total Radiated Power	PO		3.0		mW	IF=20mA
			100			IFP=500mA
Radiant Intensity	IE		2.8		mW/sr	IF=20mA
			94			IFP=500mA
Peak Wavelength	$\lambda_p$	895	905	915	nm	IF=20mA
Half Width	$\Delta\lambda$		48		nm	IF=20mA
Rise Time	tr		130		ns	IF=20mA
Fall Time	tf		130		ns	IF=20mA

‡ Radiated Power is measured by S3584-08.

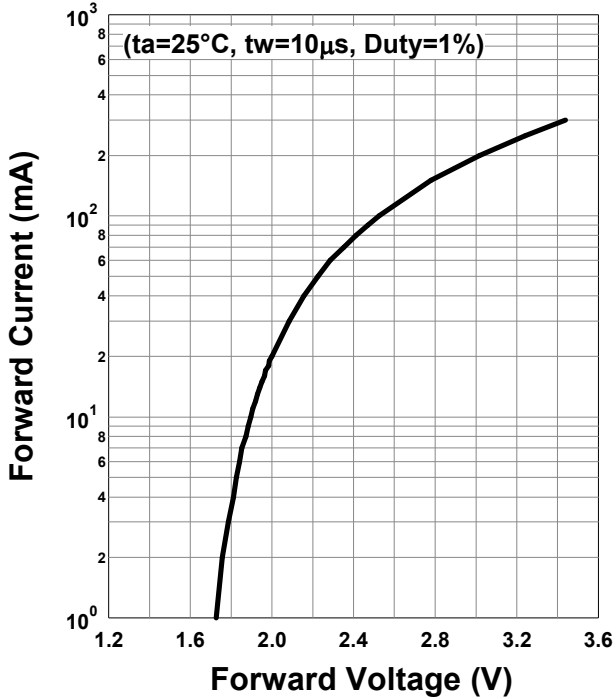
‡ Radiant Intensity is measured by CIE127-2007 Condition B.

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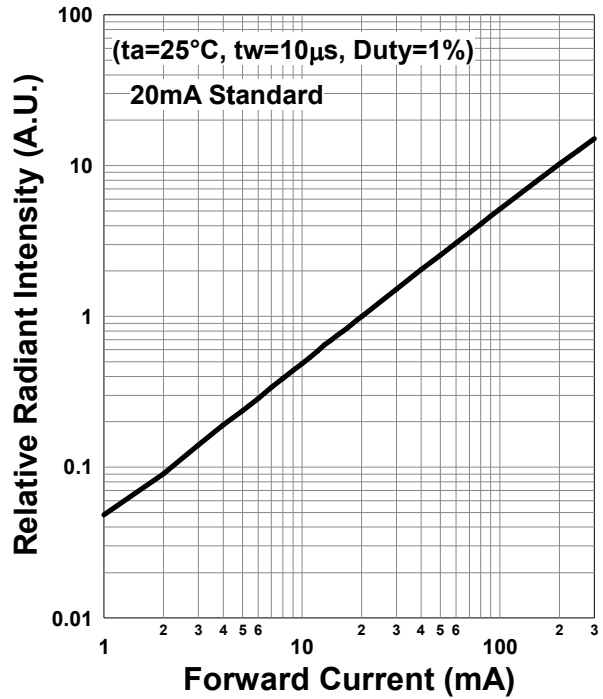
## Typical Characteristic Curves

◆660nm

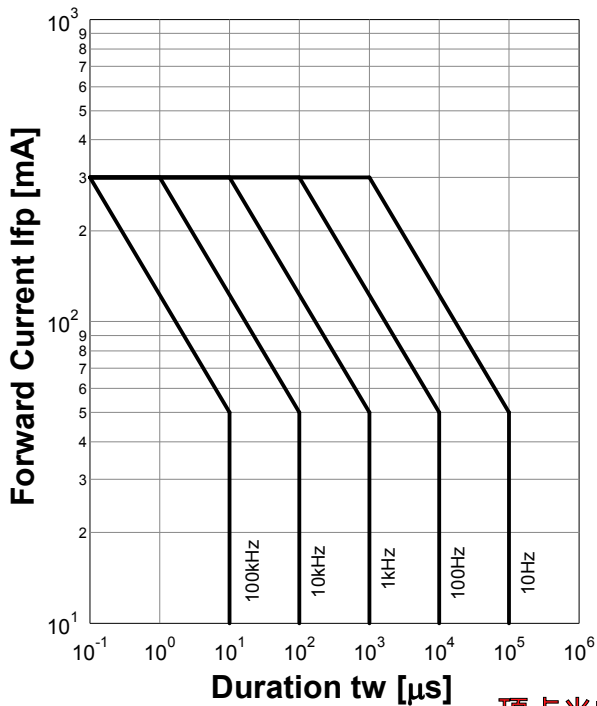
### Forward Current - Forward Voltage



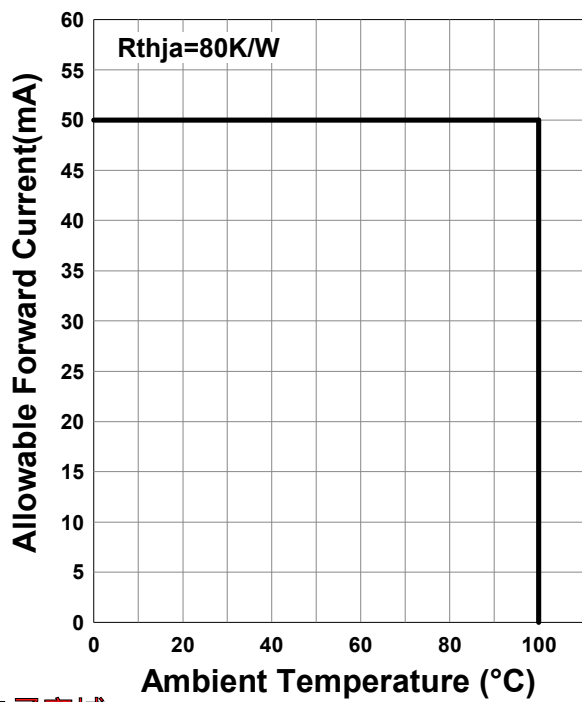
### Relative Radiant Intensity - Forward Current



### Forward Current - Pulse Duration



### Allowable Forward Current - Ambient Temperature

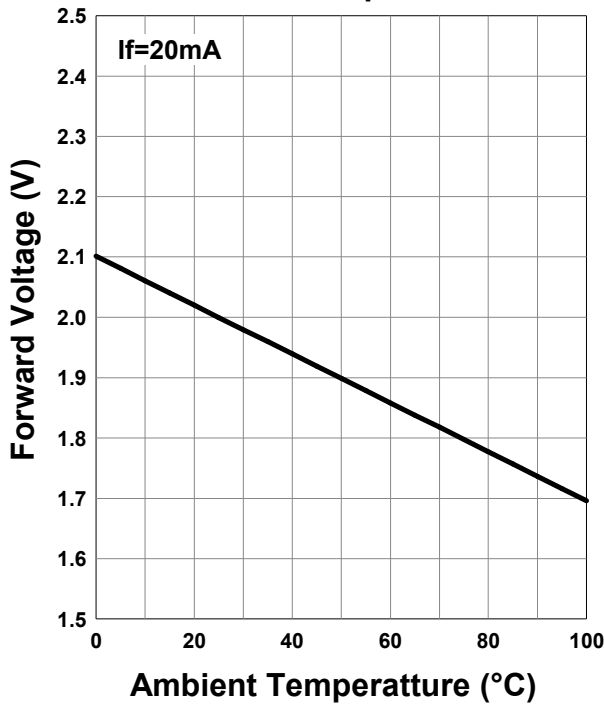


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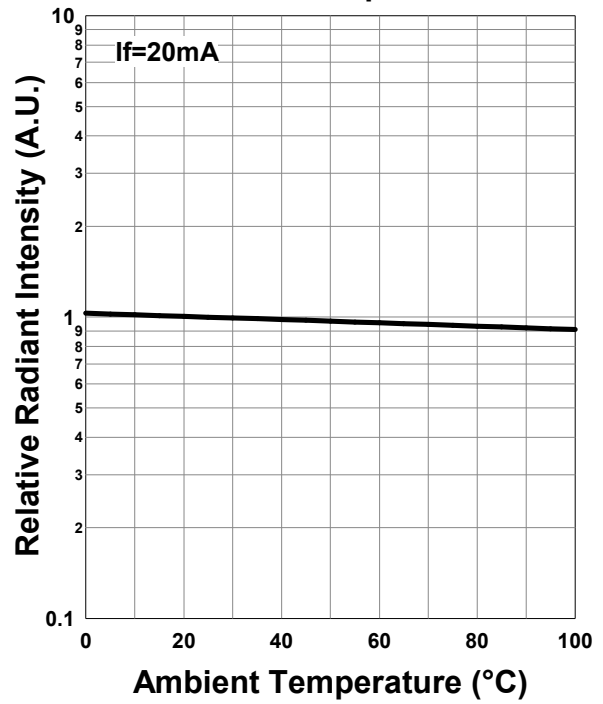
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◆660nm

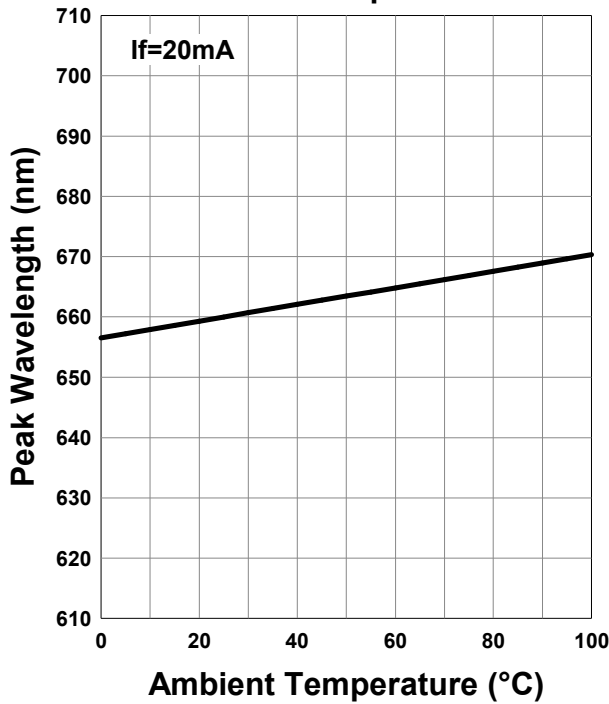
**Forward Voltage - Ambient Temperature**



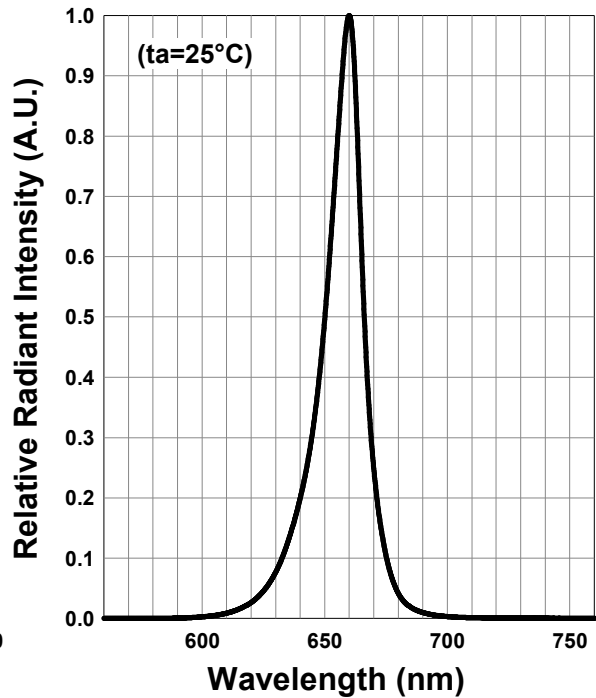
**Relative Radiant Intensity - Ambient Temperature**



**Peak Wavelength - Ambient Temperature**



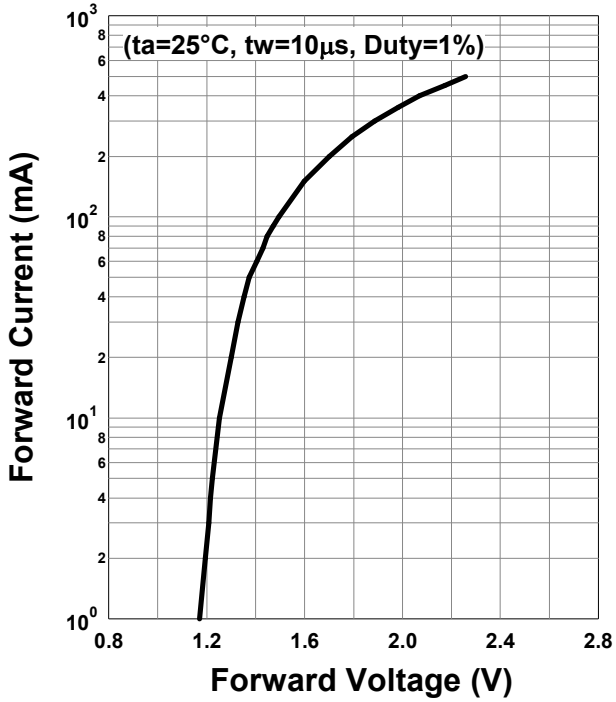
**Relative Spectral Emission**



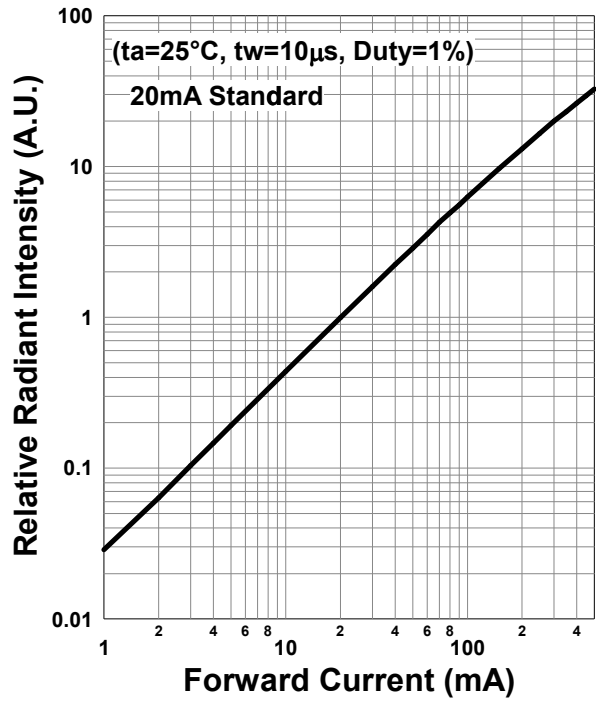
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◆910nm

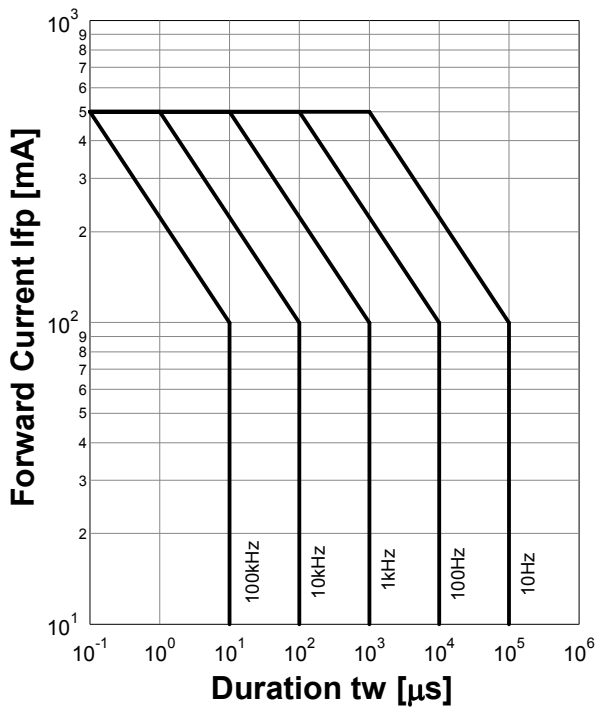
**Forward Current - Forward Voltage**



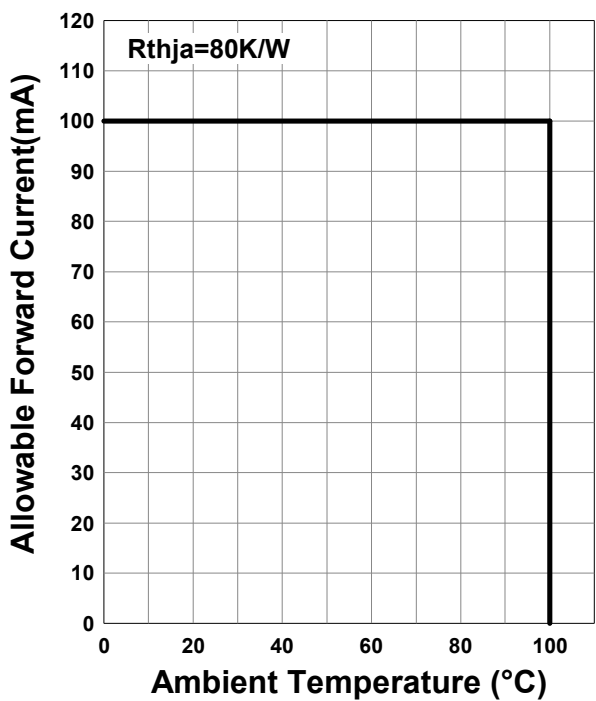
**Relative Radiant Intensity - Forward Current**



**Forward Current - Pulse Duration**



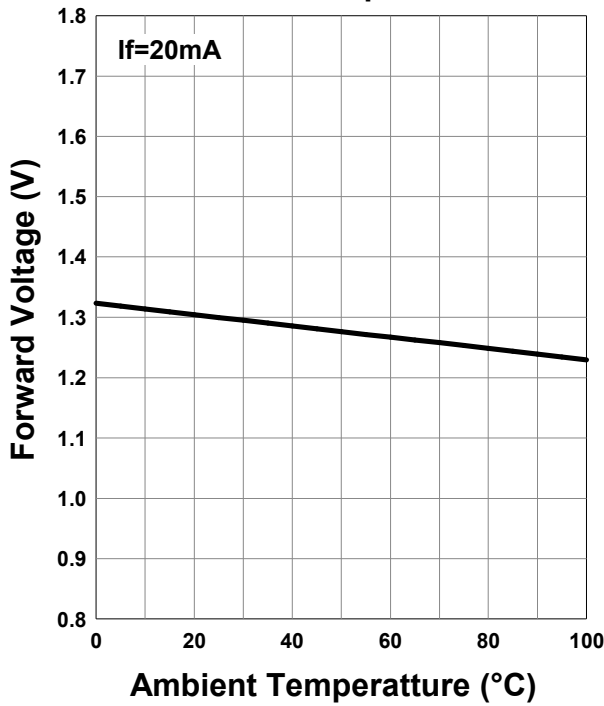
**Allowable Forward Current - Ambient Temperature**



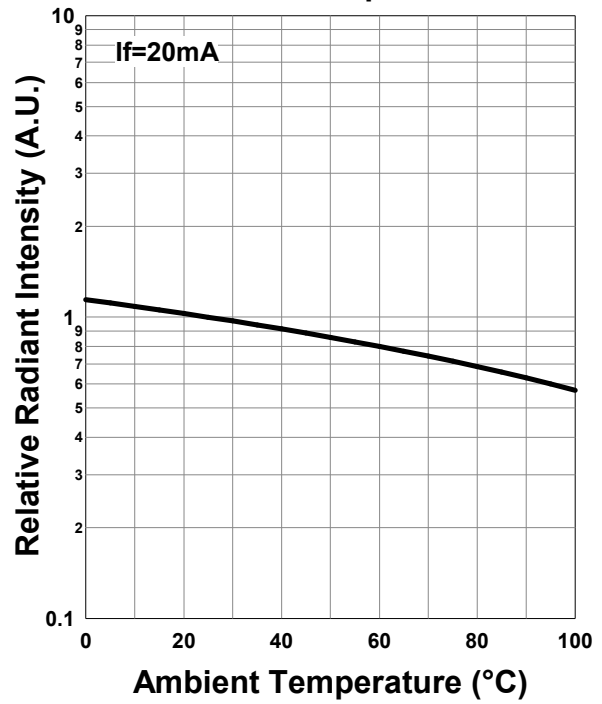
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◆910nm

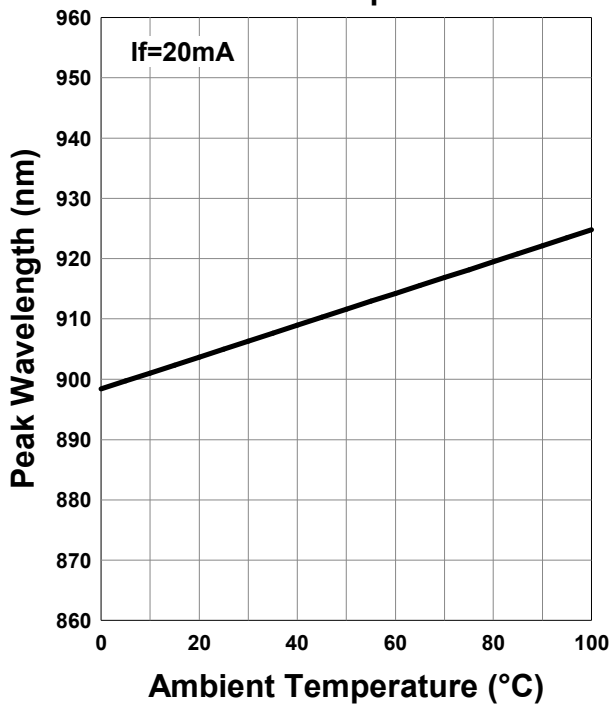
**Forward Voltage - Ambient Temperature**



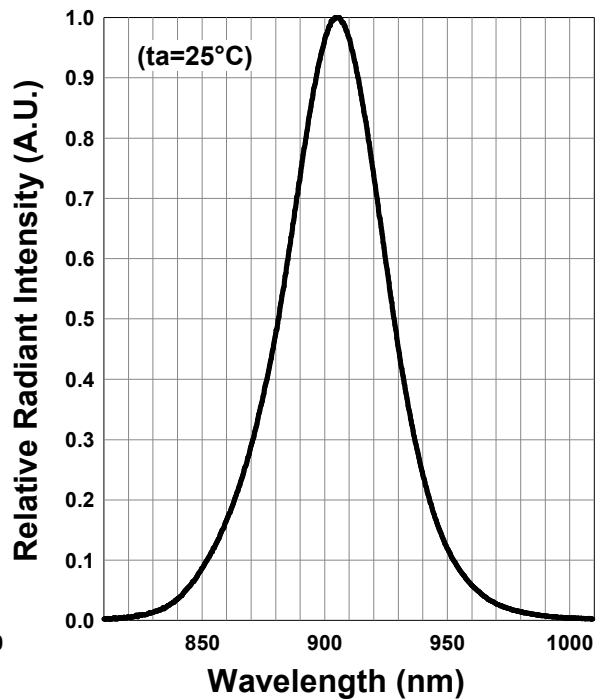
**Relative Radiant Intensity - Ambient Temperature**



**Peak Wavelength - Ambient Temperature**



**Relative Spectral Emission**



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## Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

## SMD LED storage and handling precautions

### Storage Conditions before Opening a Moisture-Barrier Aluminum Bag

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH.
- Please note that the maximum shelf life is 12 months under these conditions.

### Storage Conditions after Opening a Moisture-Barrier Aluminum Bag

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.
  
- The 72-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag. However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag

### Notes about Re-sealing a Moisture-Barrier Aluminum Bag

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

### Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

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\*Effective June 2015, Epitex Inc. is now Ushio Epitex Inc.