

# Edixeon S1 Single Color L Series Datasheet



## Features :

- Various colors
- More energy efficient than incandescent and most halogen lamps
- Low voltage operation
- Instant light
- Long operating life

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## General Information

### Introduction

Edixeon S1 series emitters are one of the highest flux LEDs in the world by Edison Opto. Edixeon S1 series emitters are designed to satisfy more and more Solid-State lighting High Power LED applications for brilliant world such as flash light, indoor and outdoor decoration light. Unlike most fluorescent sources, Edixeon Opto contains no mercury and has more energy efficient than other incandescent light source.

### Ordering Code Format

2  
X1
E  
X2
S 1  
X3
0 1  
X4
x X  
X5
x x  
X6
0 0 0  
X7
x x x  
X8

X1		X2		X3		X4		X5	
Type		Component		Series		Wattage		Color	
2	Emitter	E	Edixeon	S1	S1 Series	01	1W	RX	Red
								TX	True Green
								AX	Amber

X6		X7		X8	
Internal code		PCB Board		Serial Number	
-	-	000	-	-	-

## Absolute Maximum Ratings

Parameter	Symbol	Value	Units
DC Forward Current <sup>[1]</sup>	$I_F$	350	mA
Peak Pulsed Current; ( $t_p \leq 100\mu s$ , Duty cycle=0.25) <sup>[2]</sup>	$I_{pulse}$	500	mA
Reverse Voltage	$V_R$	5	V
Drive Voltage	$V_D$	5	V
LED Junction Temperature <sup>[3]</sup>	$T_J$	125	°C
Operating Temperature	-	-30 ~ +110	°C
Storage Temperature	-	-40 ~ +120	°C
ESD Sensitivity (HBM)	-	2,000	V
Manual Soldering Time at 260°C(Max.)	-	5	Sec.

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
2. LEDs are not designed to be driven in reverse bias.
3.  $t_p$ : Pulse width time

## Characteristics

Parameter	Symbol	Value	Units
Viewing Angle	(R/A) (B) $2\Theta_{1/2}$	135 150	Degree
Thermal resistance	-	11	°C/W
$\Delta V_f / \Delta T$	$\Delta V_f / \Delta T$	-2	mV/°C
Wavelength	$\lambda_d$	R: 620-630 A: 585-595 B: 455-475	nm
JEDEC Moisture Sensitivity	-	Level 2a <b>Floor Life</b> Conditions: $\leq 30^\circ\text{C} / 60\% \text{RH}$ <b>Soak Requirements(Standard)</b> Time (hours): 120+1/-0 Conditions: $60^\circ\text{C} / 60\% \text{RH}$	-

Notes:

1. Wavelength is measured with an accuracy of  $\pm 1\text{nm}$ .
2. Viewing angle is measured with an accuracy of  $\pm 5\%$ .

## Luminous Flux Characteristic

Luminous Flux Characteristics at  $I_f=350\text{mA}$ ,  $T_j=25^\circ\text{C}$ .

Color	Wattage (W)	Group	Min. Luminous Flux(lm)	Max. Luminous Flux(lm)	Forward Current (mA)	Order Code
Red	1	R0	39.4	51.2	350	2ES101RX00000002
		S0	51.2	66.5		
Blue	1	L0	10.6	13.8	350	2ES101BX00000002
		M0	13.8	17.9		
		N0	17.9	23.3		
		P0	23.3	30.3		
Amber	1	Q0	30.3	39.4	350	2ES101AX00000002
		S0	51.2	66.5		
		T0	66.5	86.5		

Notes:

1. Flux is measured with an accuracy of  $\pm 10\%$ .
2. Blue emitters are built with InGaN.
3. All Red emitters are built with AlGaInP.

## Voltage Bin Structure (Blue)

Goup	Min. Voltage (V)	Max. Voltage (V)
V01	2.8	3.1
V02	3.1	3.4
V03	3.4	3.7

Note:

Forward voltage measurement allowance is  $\pm 0.06\text{V}$ .

## Voltage Bin Structure (Red, Amber)

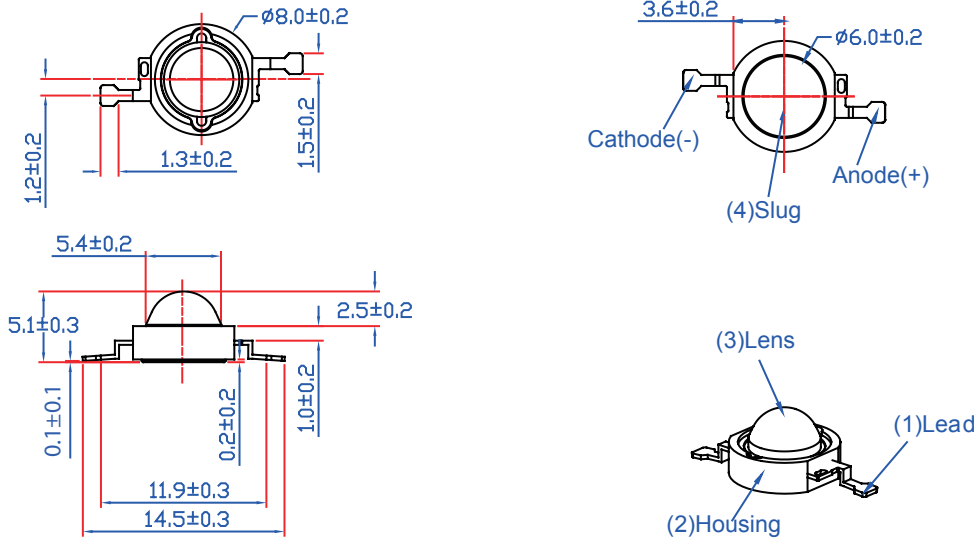
Goup	Min. Voltage (V)	Max. Voltage (V)
U03	1.6	1.9
U04	1.9	2.2
U05	2.2	2.5
V00	2.5	2.8
V01	2.8	3.1


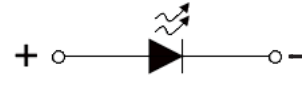
Note:

Forward voltage measurement allowance is  $\pm 0.06\text{V}$ .

## Mechanical Dimensions

### Emitter Type Dimension



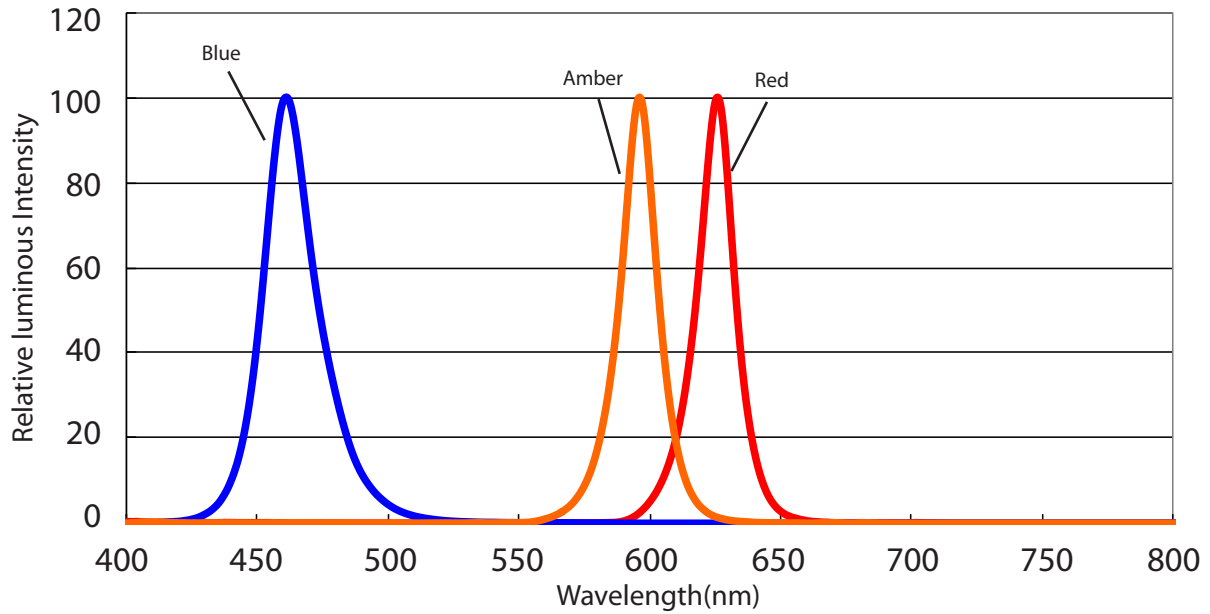
Emitter color	Slug at the bottom of the electrode	Circuit
R/A	Anode	
B	No electrode	

#### Notes:

1. All dimensions are in mm.
2. It is strongly recommended that the temperature of lead doesn't exceed 55°C.
3. Lambertian and side emitting series slug has polarity as anode.
4. It is important that the slug can't contact aluminum surface, It is strongly recommended that there should coat a uniform electrically isolated heat dissipation film on the aluminum surface.

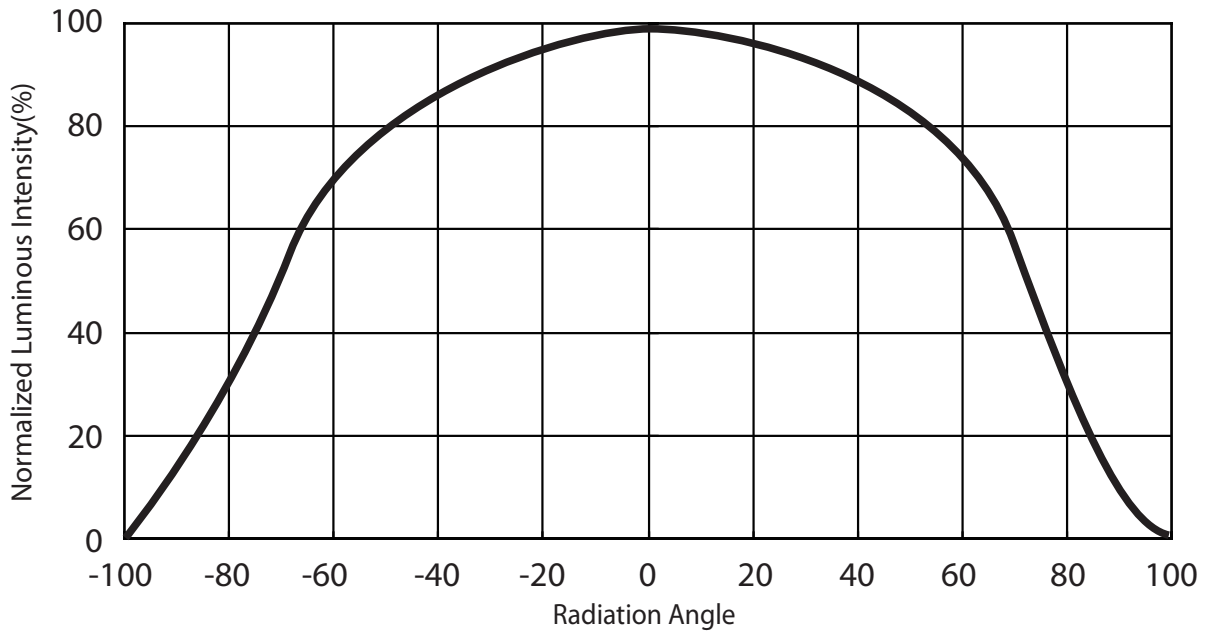
## Characteristic curve

### Color Spectrum

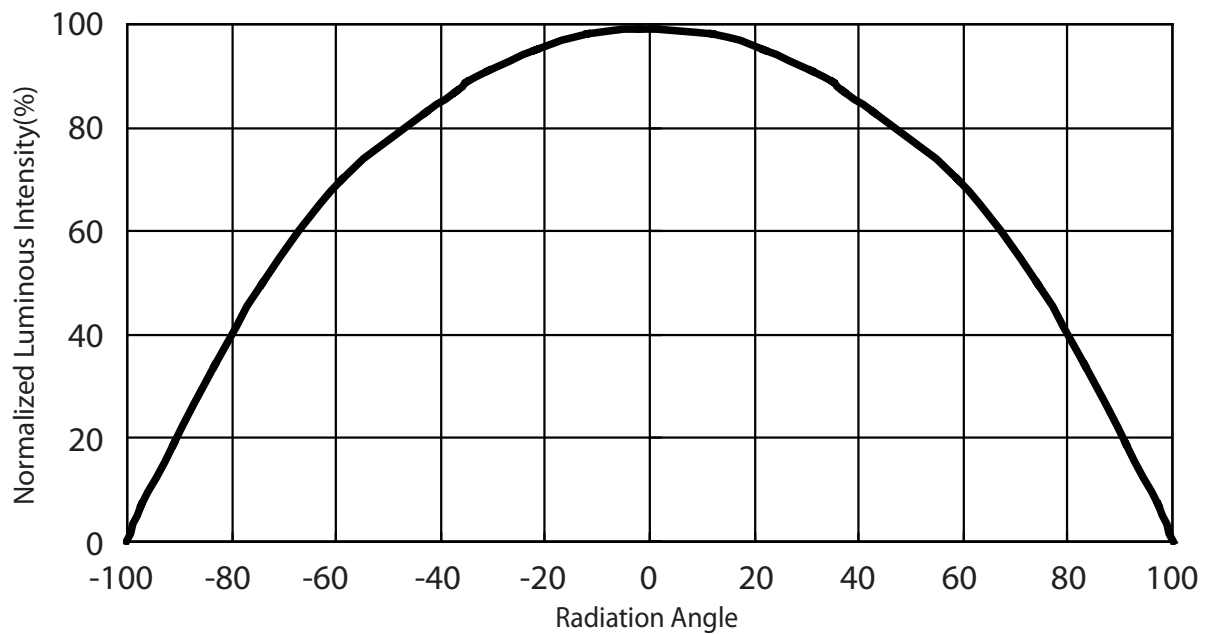


Color Spectrum at a typical CCT for Edixeon S1 Single color Series

**Beam Pattern**



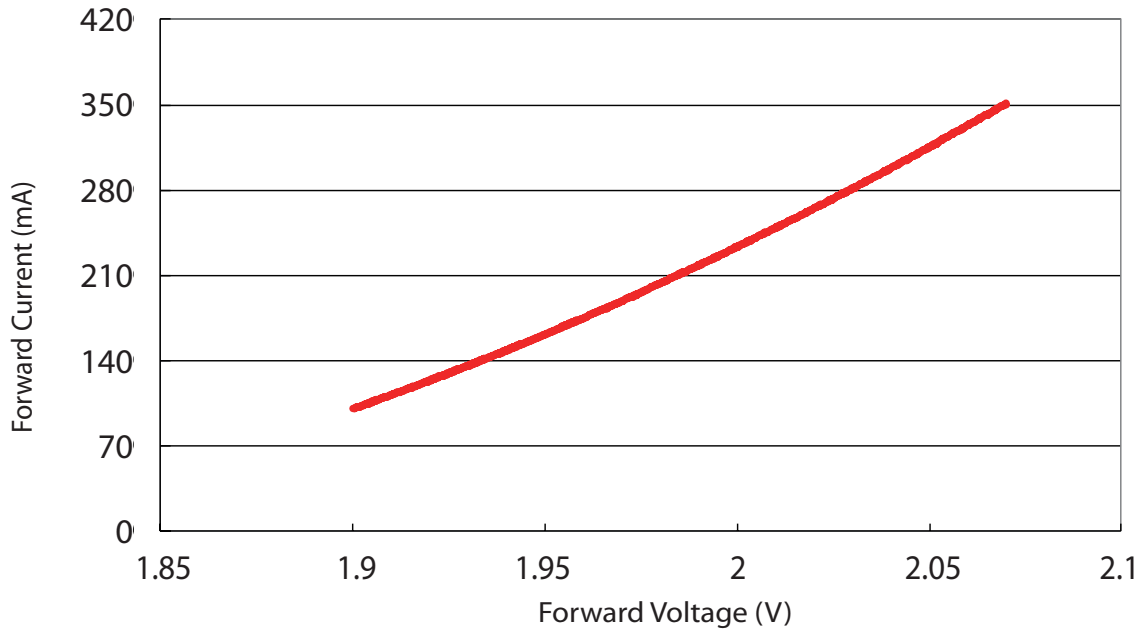
Beam pattern diagram for Red and Amber



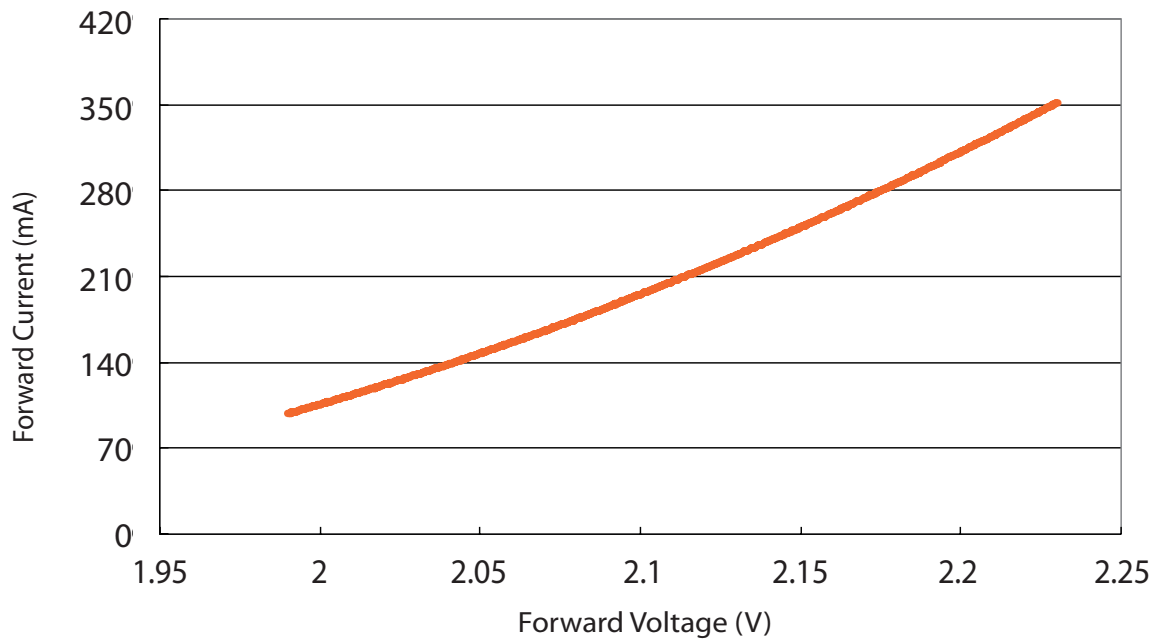
Beam pattern diagram for Blue



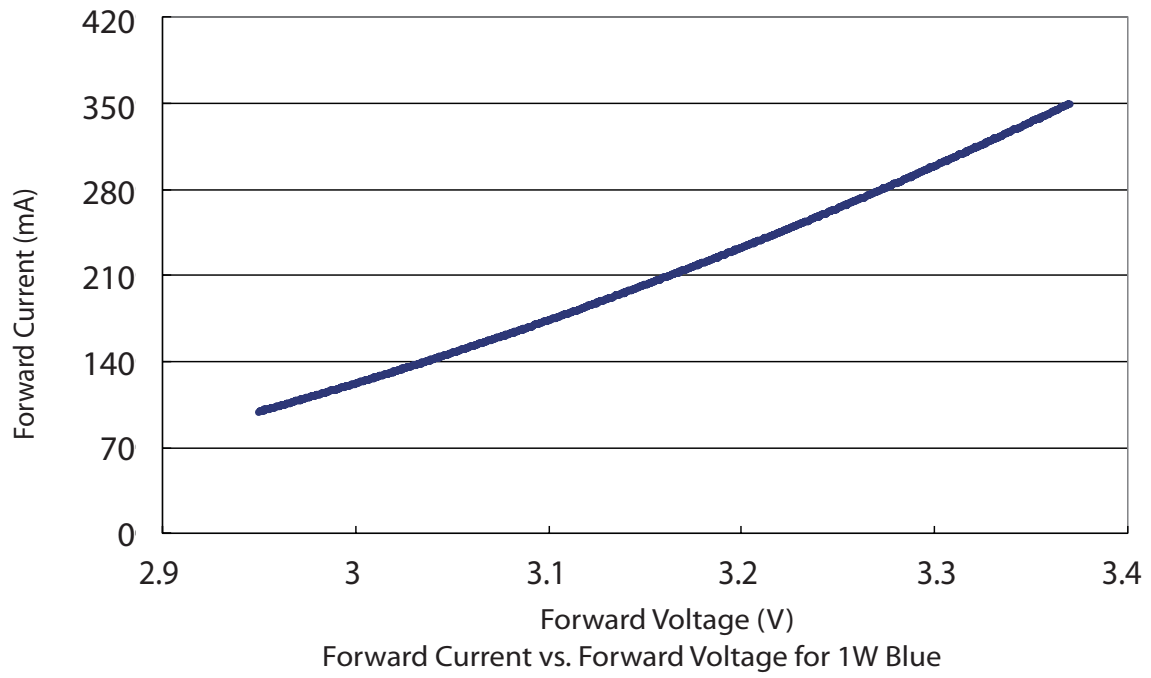
### Forward Current vs. Forward Voltage



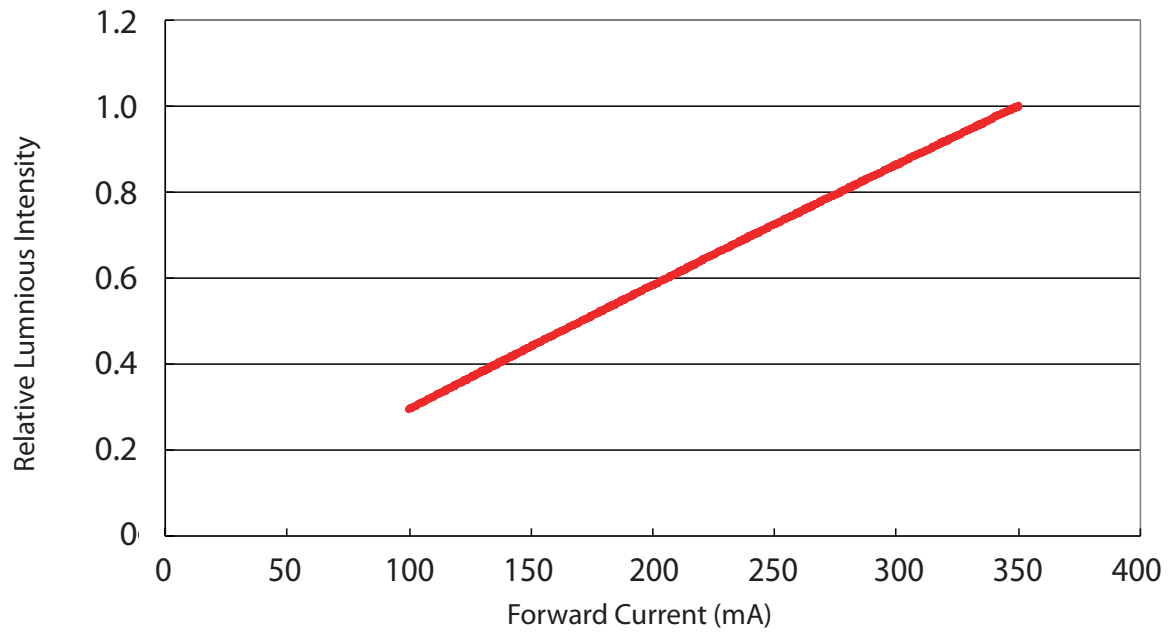
Forward Current vs. Forward Voltage for 1W Red



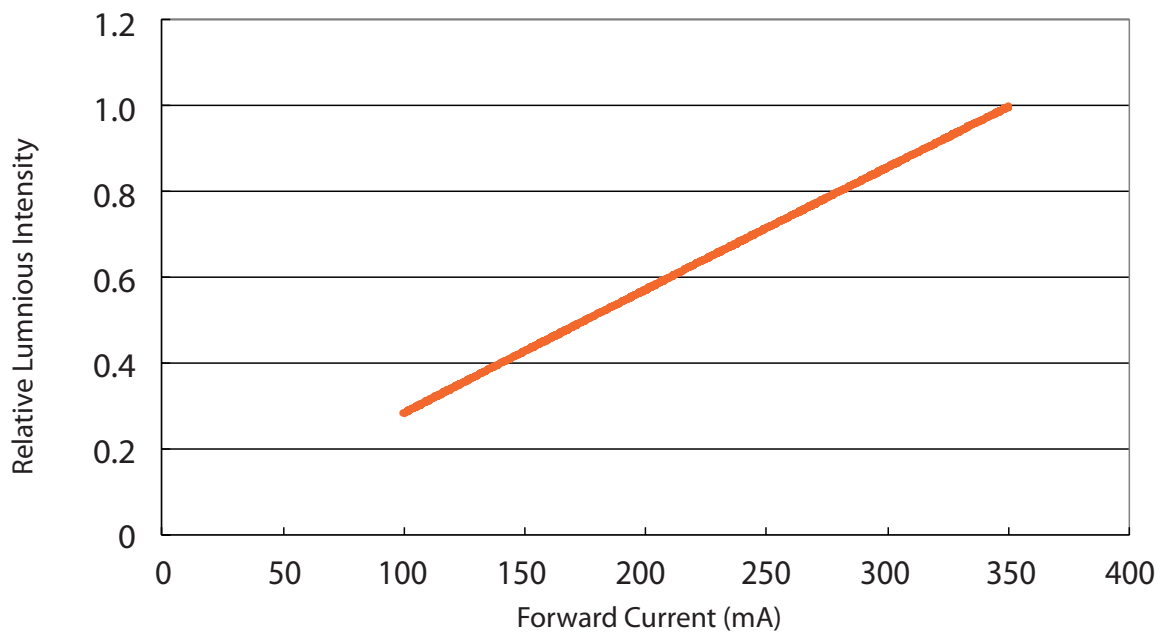
Forward Current vs. Forward Voltage for 1W Amber



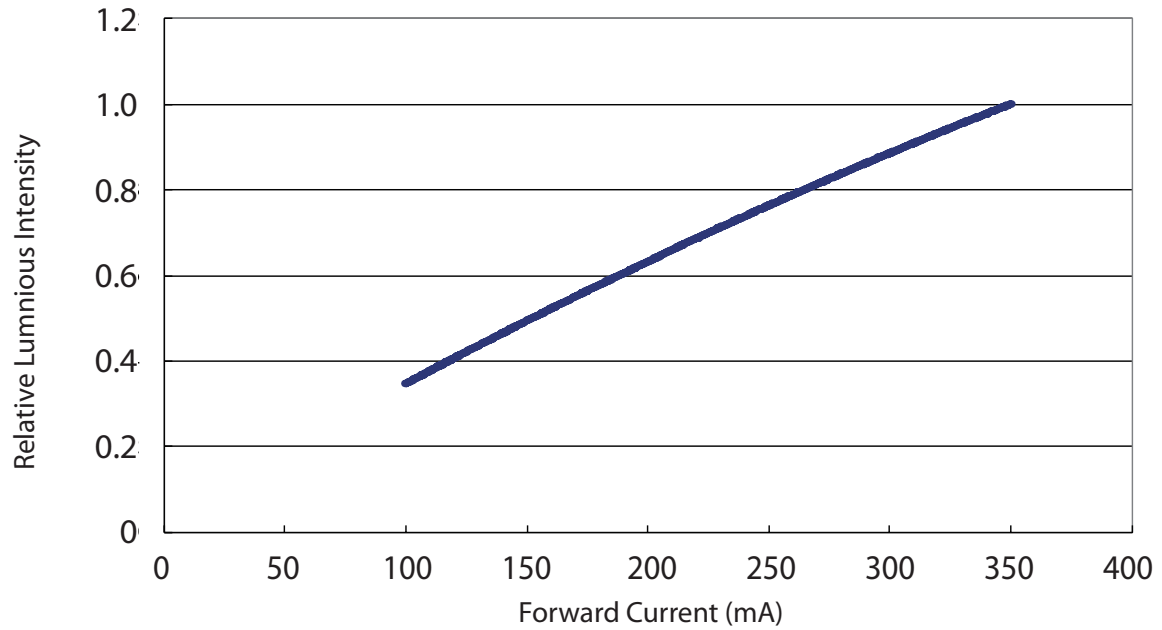
### Relative Intensity vs. Forward Current



Relative Luminous Intensity vs. Forward Current for 1W Red

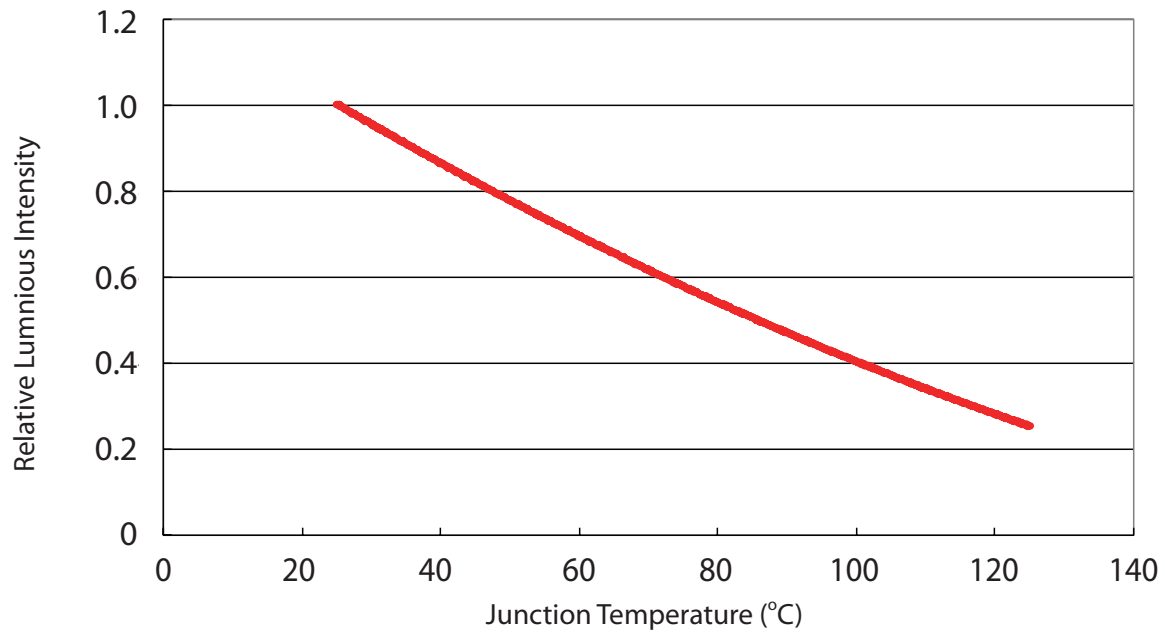


Relative Luminous Intensity vs. Forward Current for 1W Amber

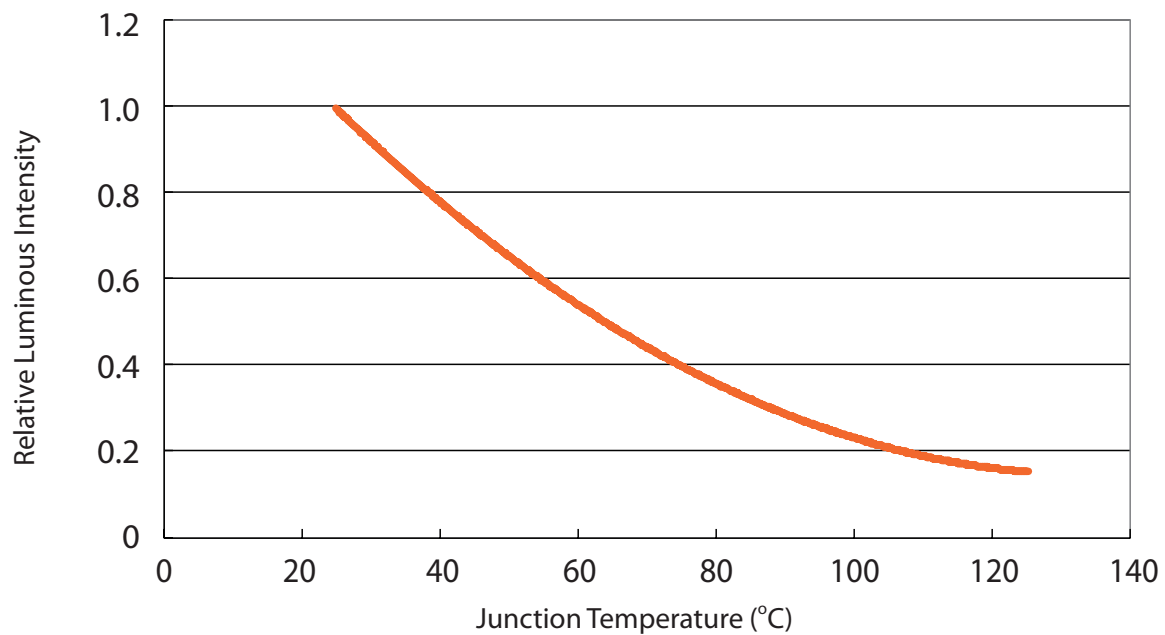


Relative Luminous Intensity vs. Forward Current for 1W Blue

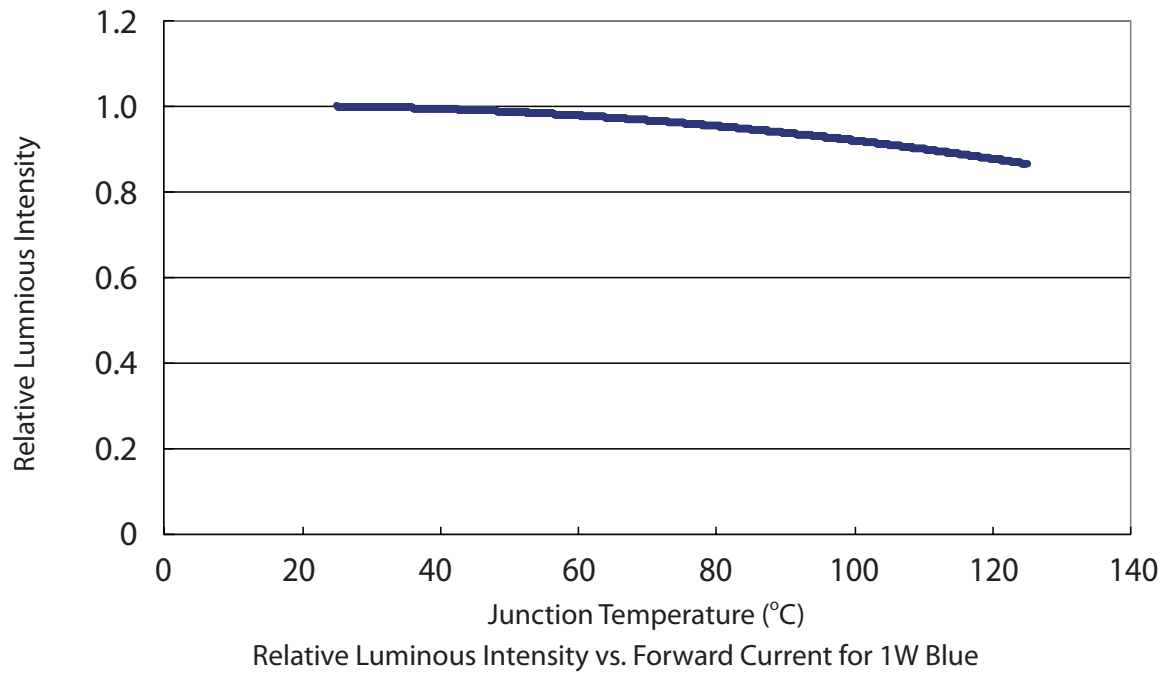
### Relative Luminous Intensity vs. Junction Temperature (1W)



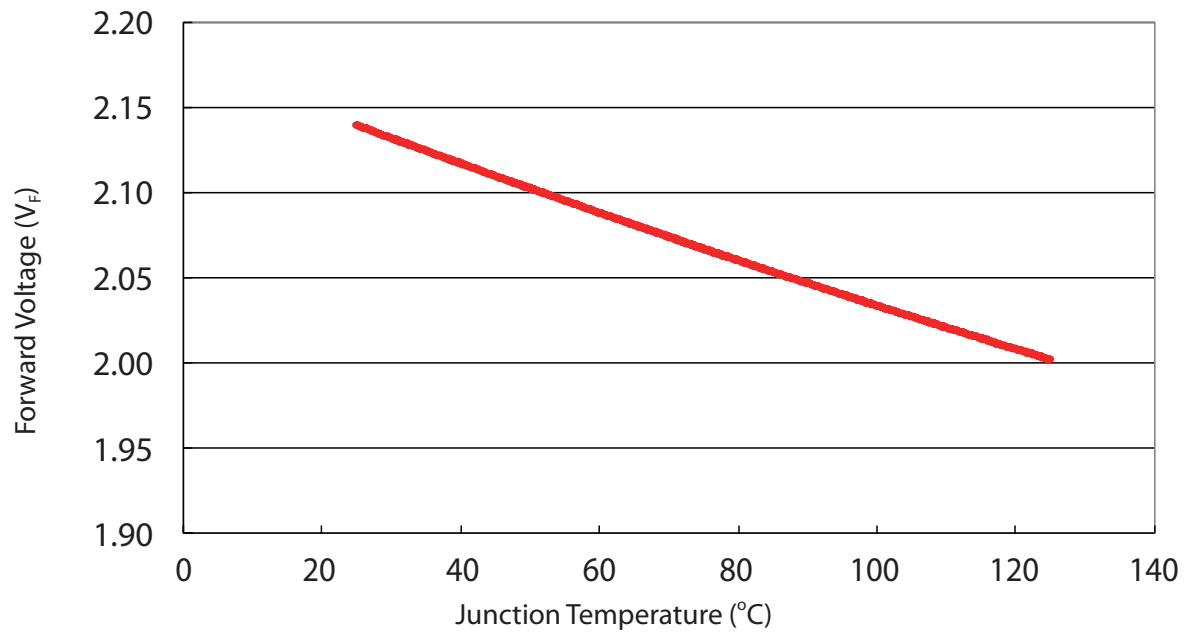
Relative Luminous Intensity vs. Forward Current for 1W Red



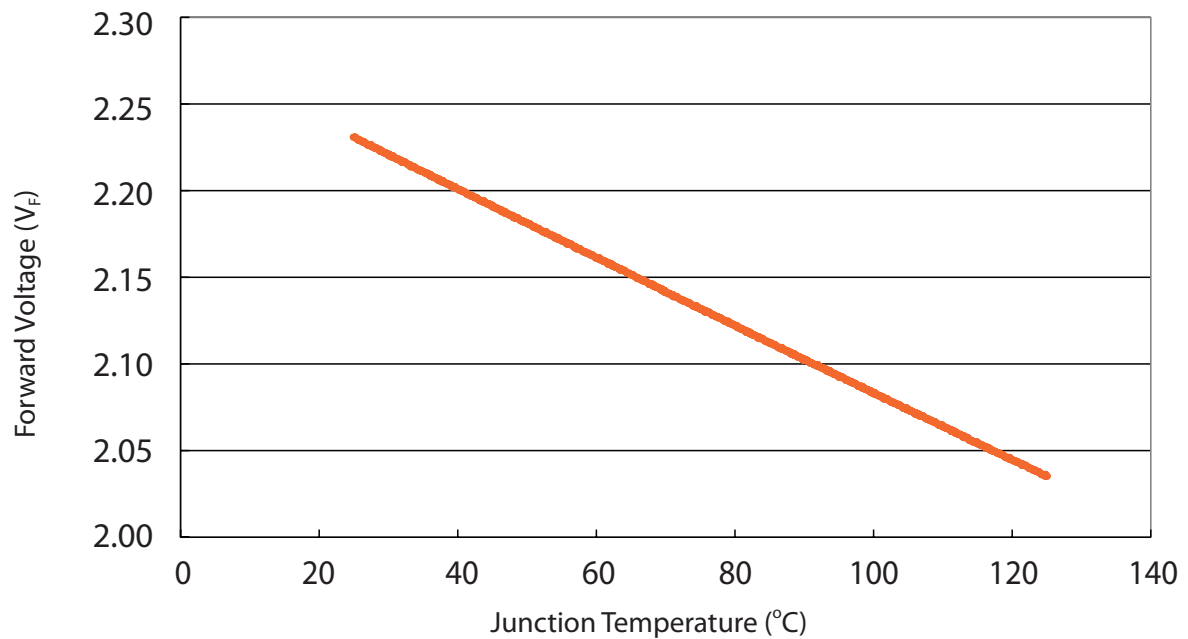
Relative Luminous intensity vs. junction temperature for 1W Amber



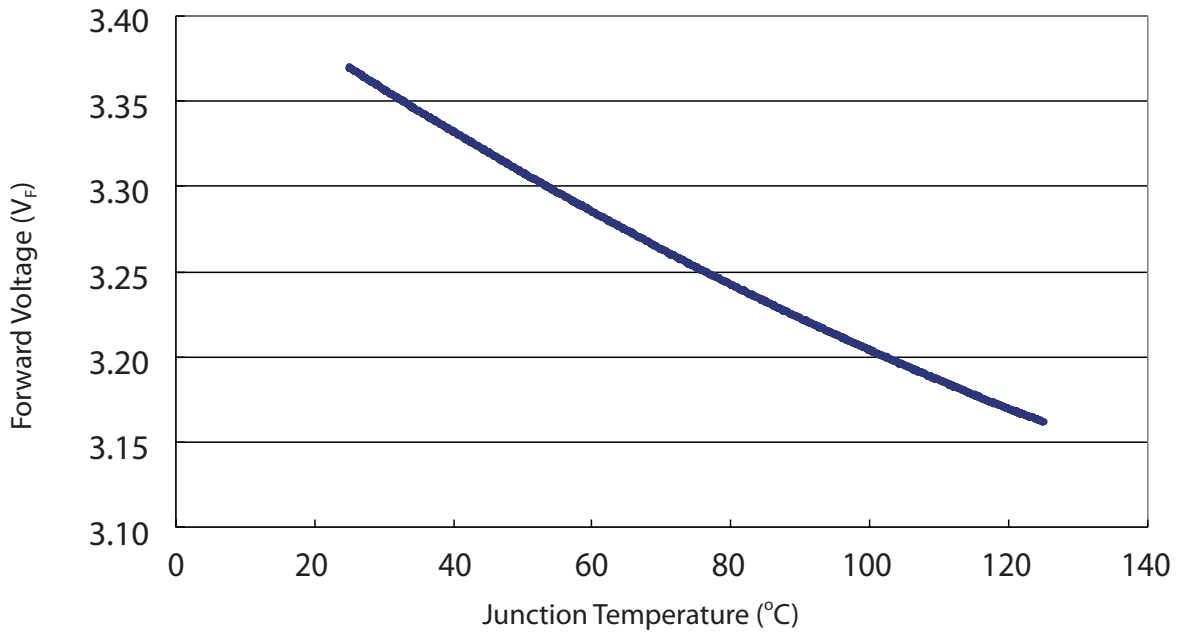
### Forward Voltage vs. Junction Temperature (1W)



Forward voltage vs. junction temperature for 1W Red



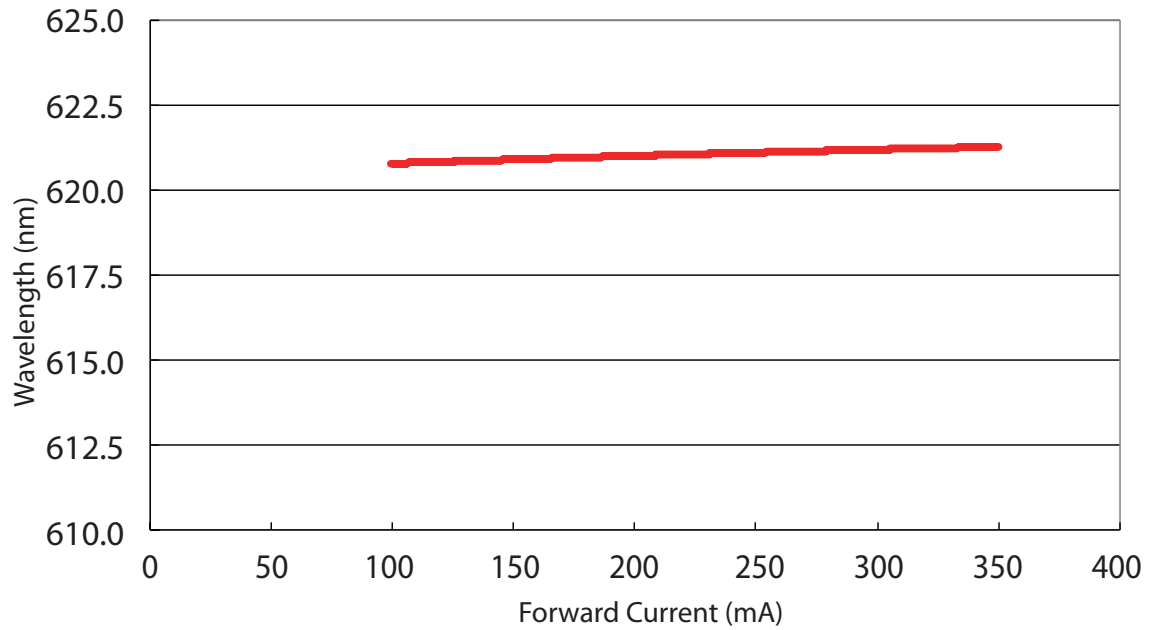
Forward voltage vs. junction temperature for 1W Amber



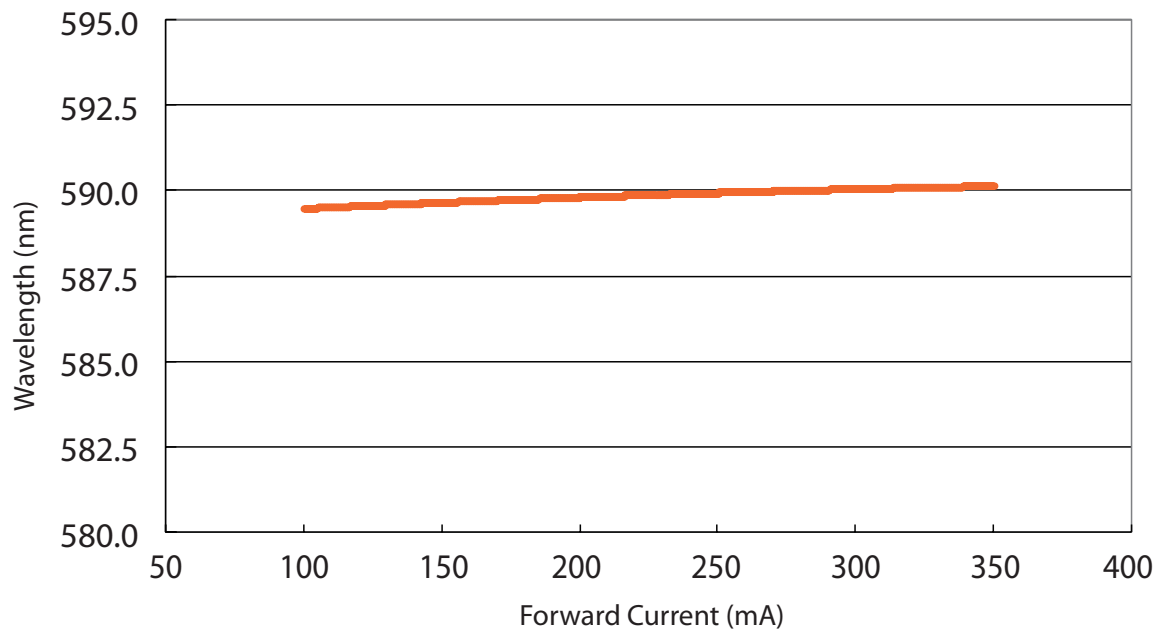
Forward voltage vs. junction temperature for 1W Blue



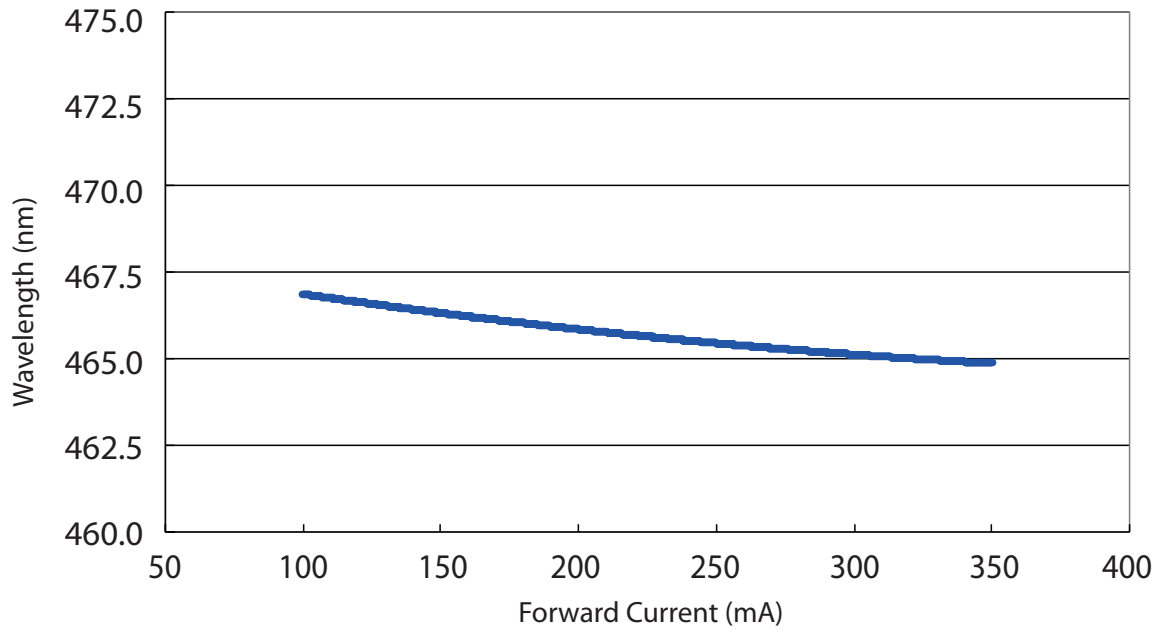
### Wavelength vs. Forward Current (1W)



Wavelength vs. Forward Current for 1W Red

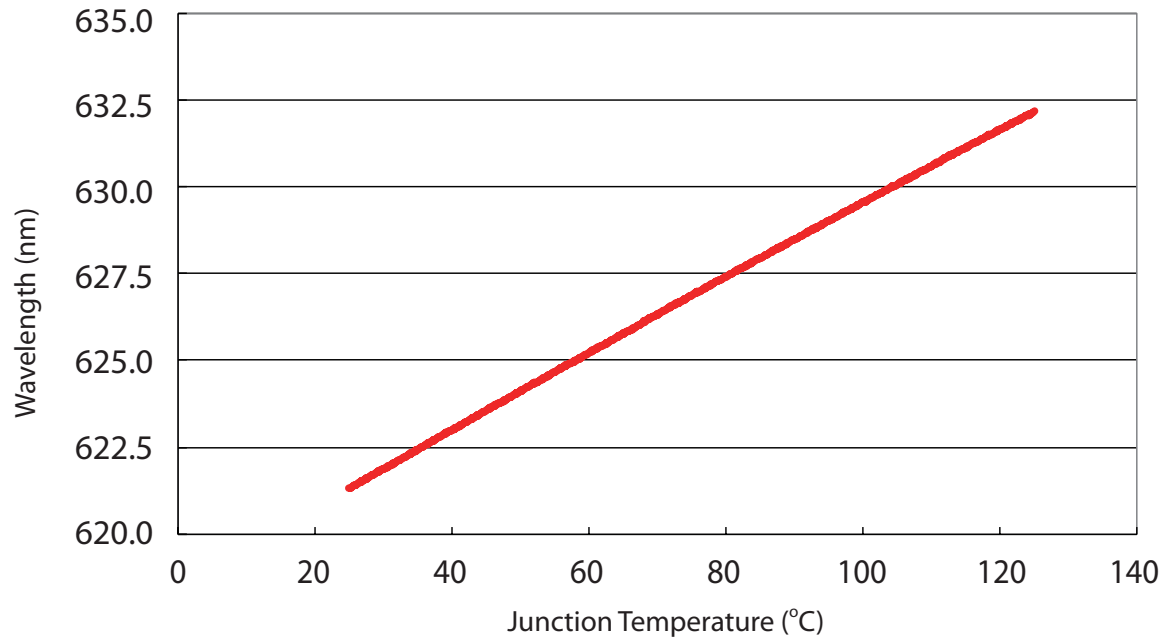


Wavelength vs. Forward Current for 1W Amber

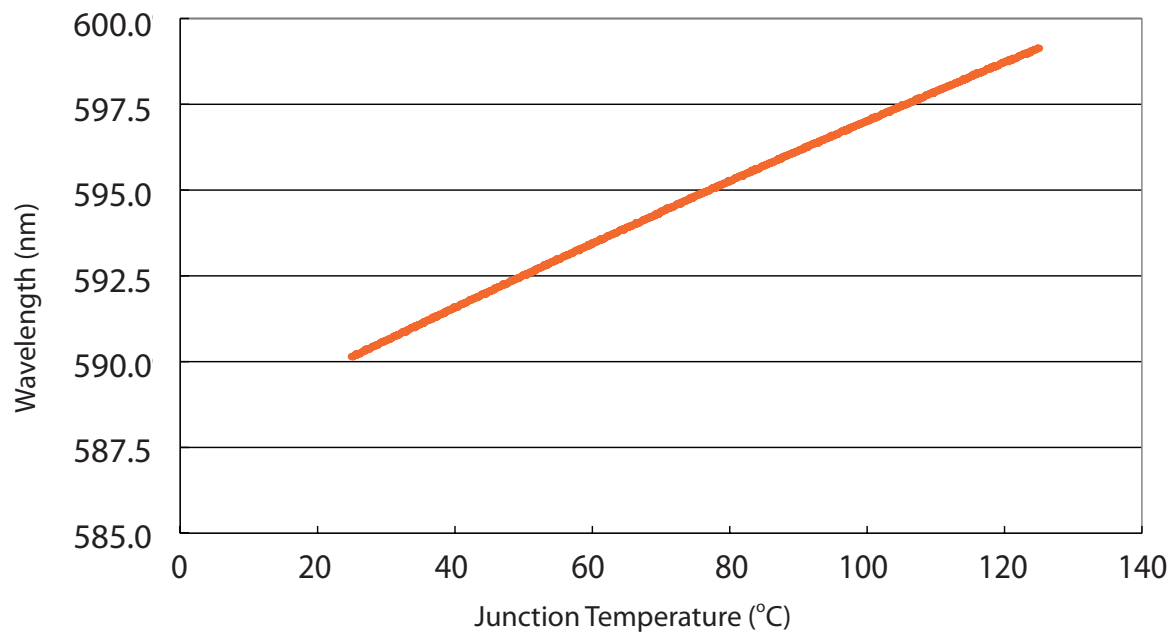


Wavelength vs. Forward Current for 1W Blue

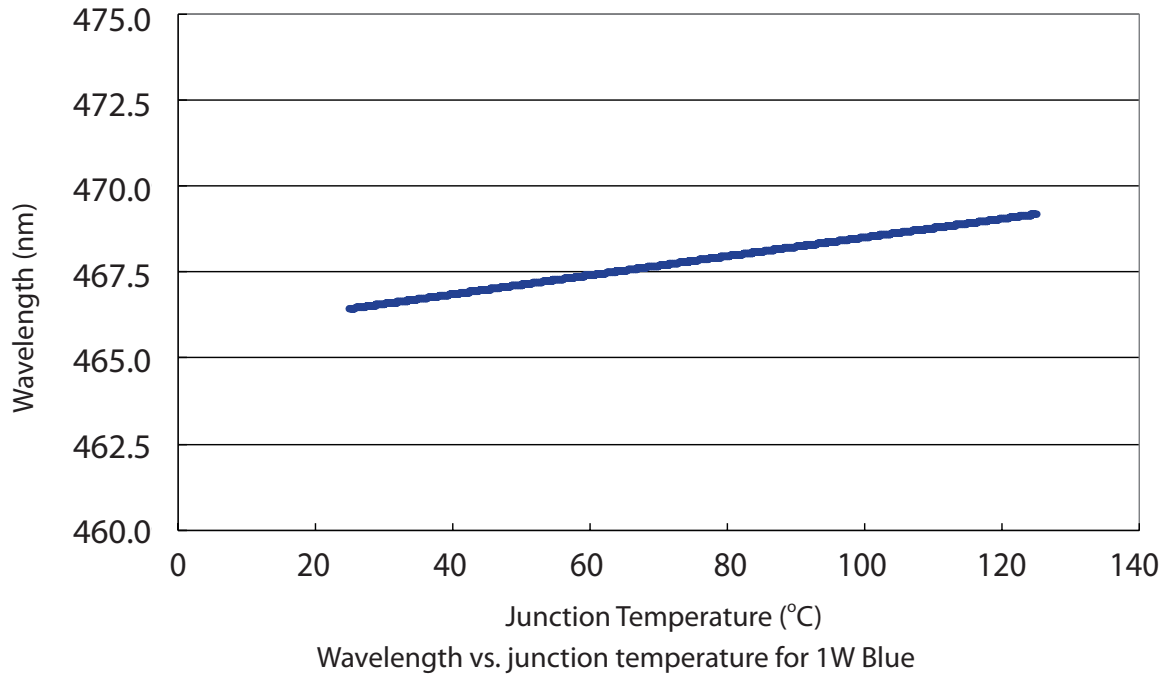
### Wavelength vs. Junction Temperature (1W)



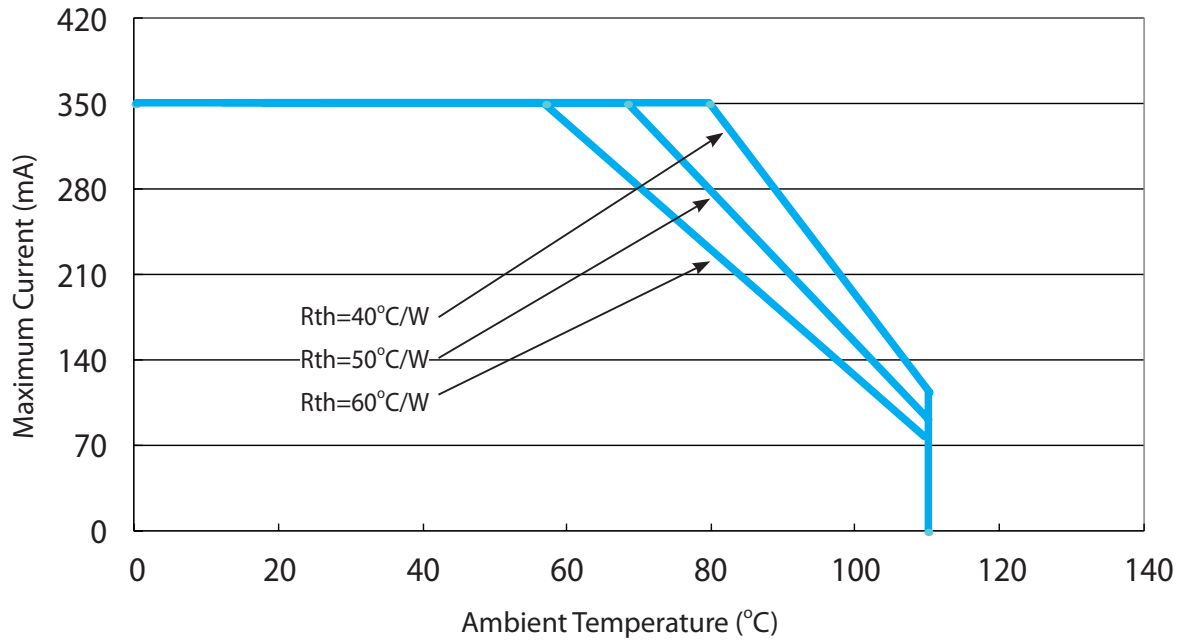
Wavelength vs. junction temperature for 1W Red



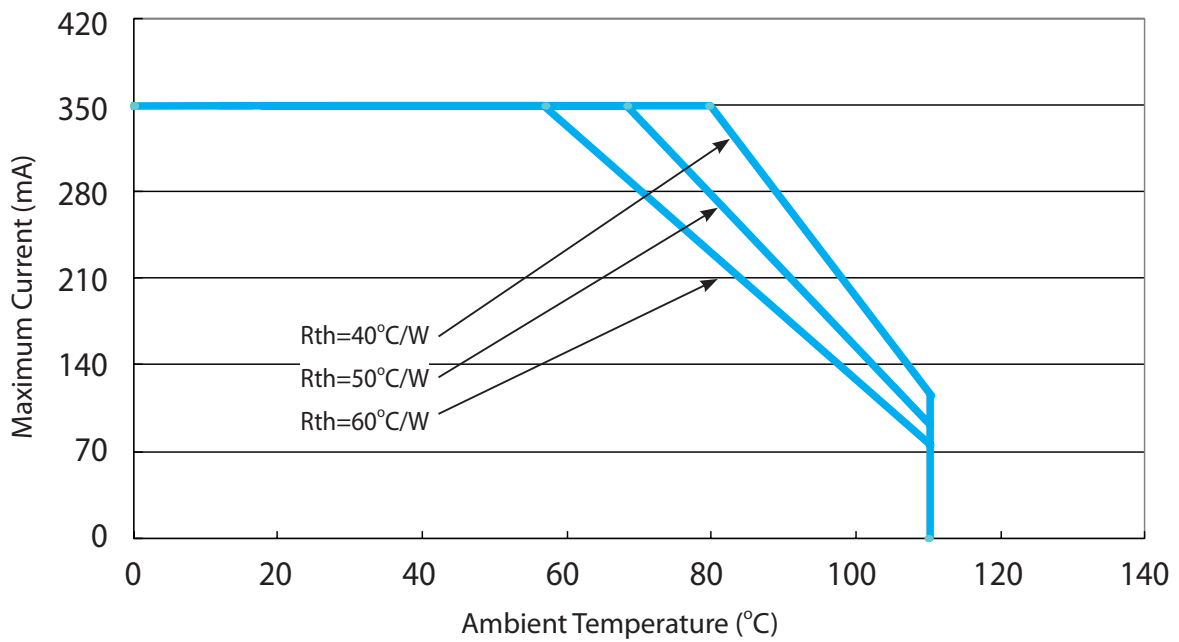
Wavelength vs. junction temperature for 1W Amber



### Maximum Current vs. Ambient Temperature (1W)



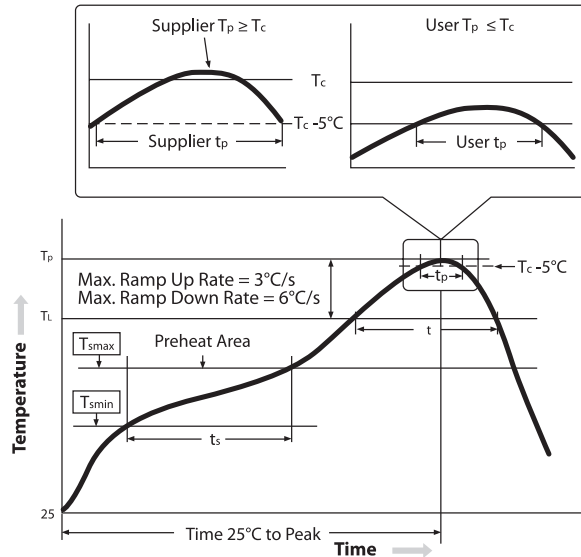
Maximum Current vs. Ambient Temperature for 1W Red and Amber



Maximum Current vs. Ambient Temperature for 1W Blue

## Reflow Profile

The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.



## Classification Reflow Profiles

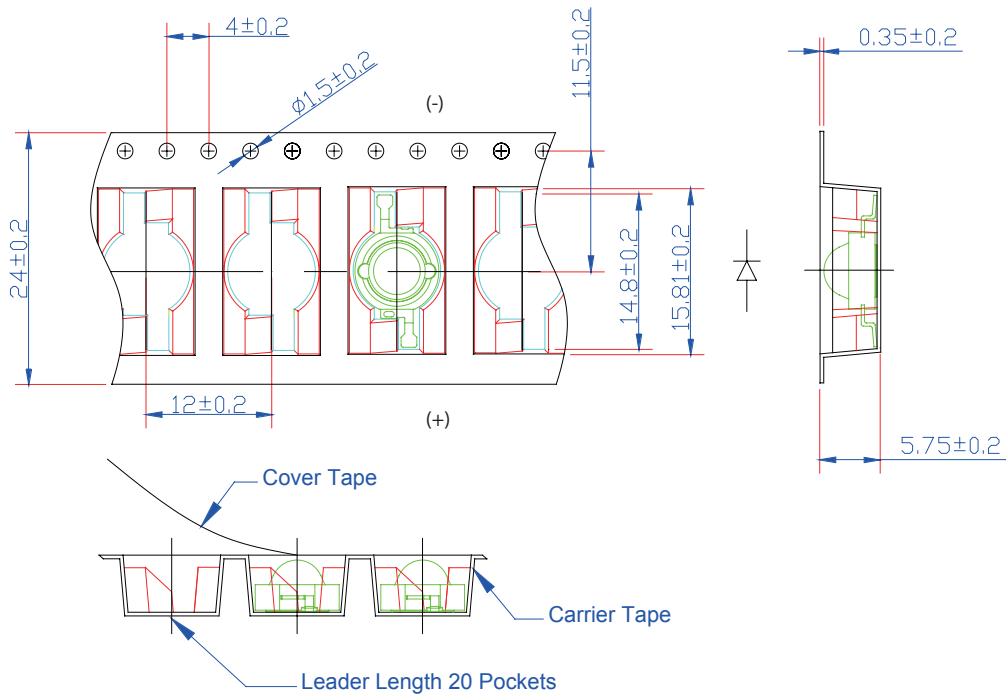
Profile Feature	Low-Temp,Pb-Free Assembl
Preheat/Soak	
Temperature Min ( $T_{smin}$ )	80°C
Temperature Max ( $T_{smax}$ )	110°C
Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120 seconds
Ramp-up rate ( $T_L$ to $T_p$ )	2°C/ seconds max.
Liquidous temperature ( $T_L$ )	138°C
Time ( $t_L$ ) maintained above $T_L$	20-50 seconds
Peak package body temperature ( $T_p$ ) <sup>(1)</sup>	155°C~160°C
Classification temperature ( $T_c$ )	160°C
Time ( $t_p$ ) within 5°C of the specified classification temperature ( $T_c$ ) <sup>(2)</sup>	30 seconds
Average ramp-down rate ( $T_p$ to $T_{smax}$ )	3°C/second max.
Time 25°C to peak temperature	6minutes max.

### Notes:

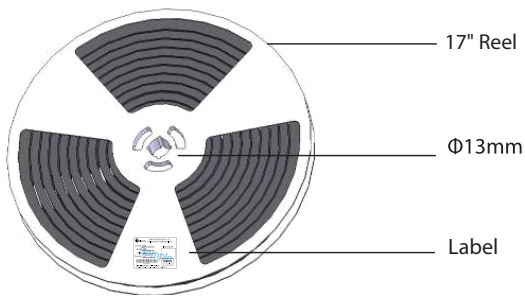
1. Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.
2. Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

## Product Packaging Information

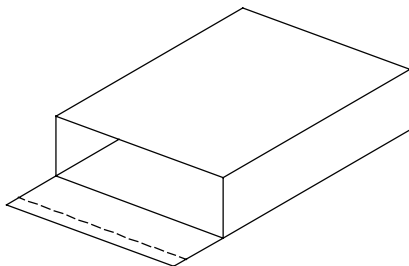
### Tape and Reel Dimension



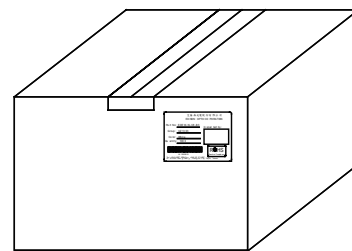
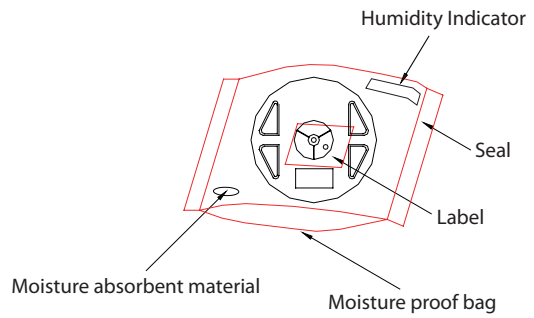
### Edixeon Emitter



1000pcs LEDs inside



2 bags in 1 box



5 boxes in 1 carton

Note : 445\*410\*415 (Tolerance :  $\pm 5\text{mm}$ )

## Revision History

Versions	Description	Release Date
1	Establish order code information	2015/04/10

## About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at [www.edison-opto.com](http://www.edison-opto.com)

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