



# Technical Data Sheet

## 3.0 mm Round LED T-1

**204-15UTC/S400-X9**

### Features

- Popular T-1 colorless 3mm package.
- High luminous power.
- Typical chromaticity coordinates  $x=0.29$ ,  $y=0.28$  according to CIE1931.
- Bulk, available taped on reel.
- Pb free .

### Descriptions

- The series is designed for application required high luminous intensity.
- The phosphor filled in the reflector converts the blue emission of InGaN chip to ideal white.

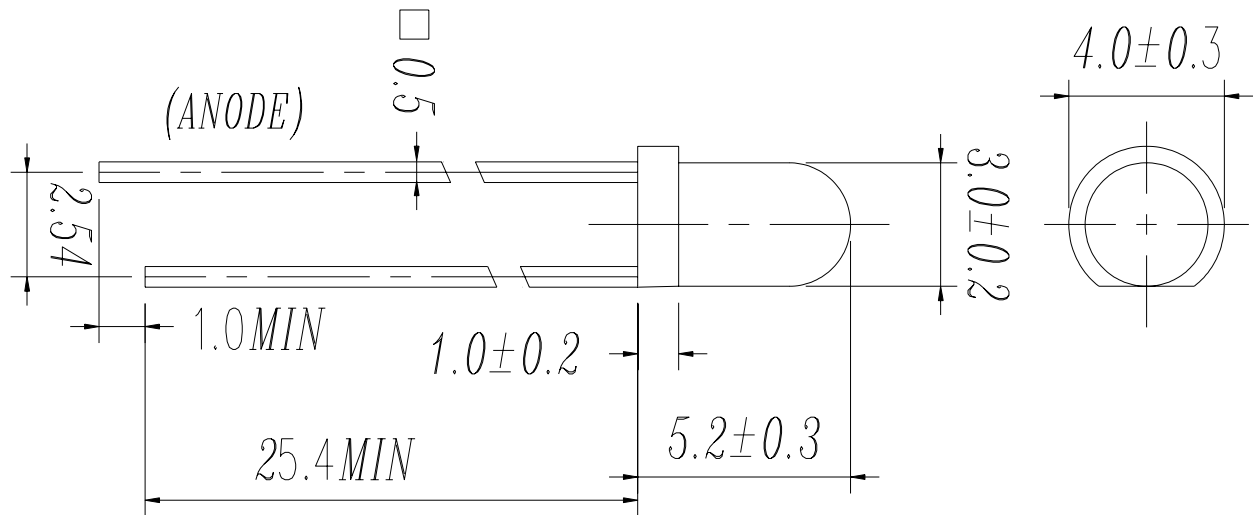
### Applications

- Outdoor Displays
- Optical Indicators
- Backlighting
- Marker Lights

### Device Selection Guide

PART NO.	Chip		Lens Color
	Material	Emitted Color	
204-15UTC/S400-X9	InGaN/Sapphire	White	Water Clear

**Package Dimensions**



**Notes:**

1. All dimensions are in millimeters, and tolerance is 0.25mm except being specified.
2. Lead spacing is measured where the lead emerges from the package.
3. Protruded resin under flange is 1.5mm Max. LED.

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I <sub>F</sub>	25	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-30 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Soldering Temperature (T=5 sec)	T <sub>sol</sub>	260 ± 5	°C
Power Dissipation	P <sub>d</sub>	120	mW
Electrostatic Discharge	ESD	150	V

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	--	3.5	4.0	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	50	uA
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =20mA	1000	2000	--	mcd
Viewing Angle	2 θ 1/2	I <sub>F</sub> =20mA	--	30	--	deg
Chromaticity Coordinates	x	I <sub>F</sub> =20mA	--	0.29	--	
	y	-----	--	0.28	--	

**Luminous Intensity Combination (mcd at 20mA)**

I <sub>V</sub> Ranks	W	X	Y
Min.	1000	1600	-----
Max.	2000	3200	-----

Measurement Uncertainty of Luminous Intensity: ±15%

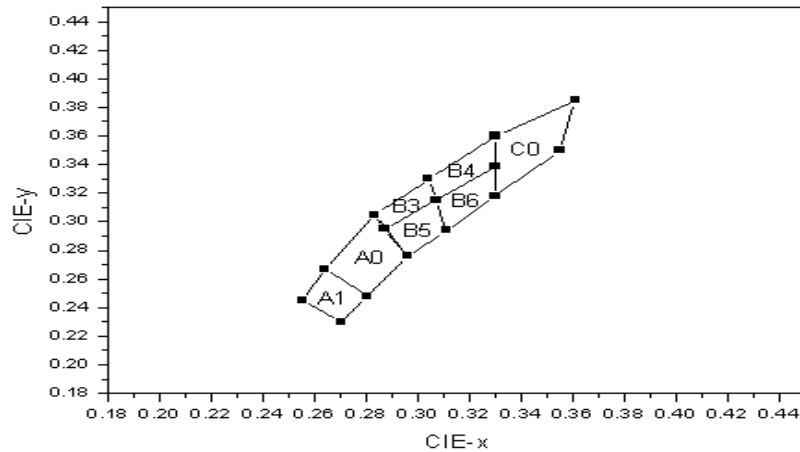
**Forward Voltage Combination (V at 20mA)**

V <sub>F</sub> Rank	1	2	3	4	5	6
Min.	2.8	3.0	3.2	3.4	3.6	3.8
Max.	3.0	3.2	3.4	3.6	3.8	4.0

\*Measurement Uncertainty of Forward Voltage : ±0.1V

## 204-15UTC/S400-X9

### CIE Chromaticity Diagram



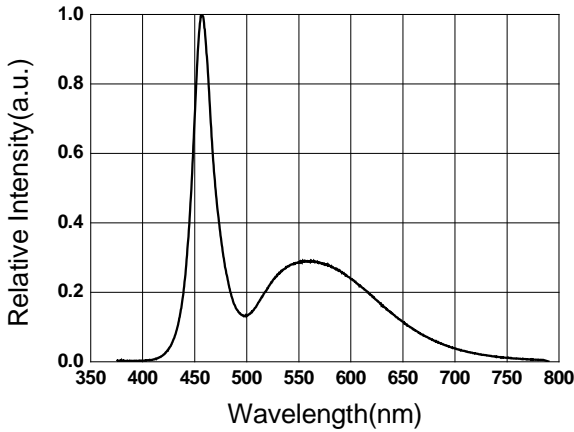
### Color Ranks (IF=20mA , Ta=25°C)

Color Ranks		CIE			
A1	X	0.255	0.264	0.28	0.27
	Y	0.245	0.267	0.248	0.23
A0	X	0.264	0.283	0.296	0.28
	Y	0.267	0.305	0.276	0.248
B3	X	0.283	0.304	0.307	0.287
	Y	0.305	0.33	0.315	0.295
B4	X	0.304	0.33	0.33	0.307
	Y	0.33	0.36	0.339	0.315
B5	X	0.287	0.307	0.311	0.296
	Y	0.295	0.315	0.294	0.276
B6	X	0.307	0.33	0.33	0.311
	Y	0.315	0.339	0.318	0.294
C0	X	0.33	0.361	0.355	0.33
	Y	0.36	0.385	0.35	0.318

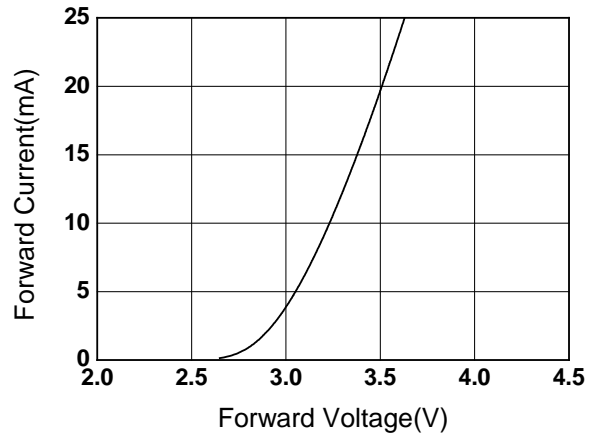
Measurement uncertainty of the color coordinates :  $\pm 0.01$

**Typical Electro-Optical Characteristics Curves**

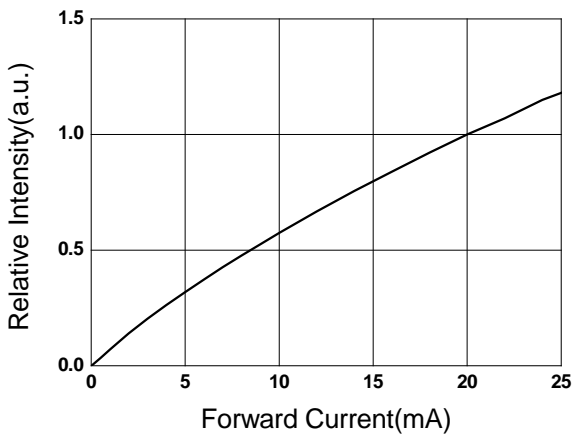
**Relative Intensity vs. Wavelength**



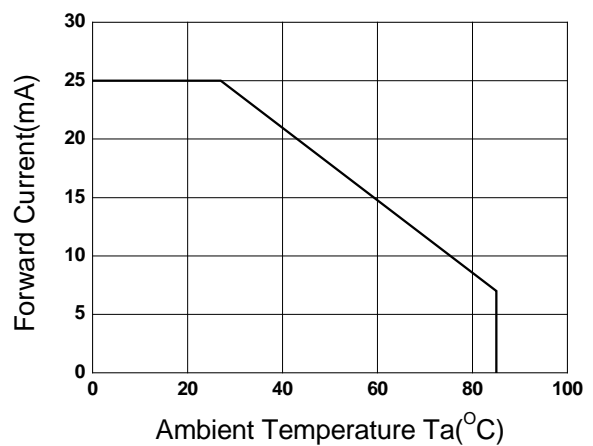
**Forward Current vs. Forward Voltage**



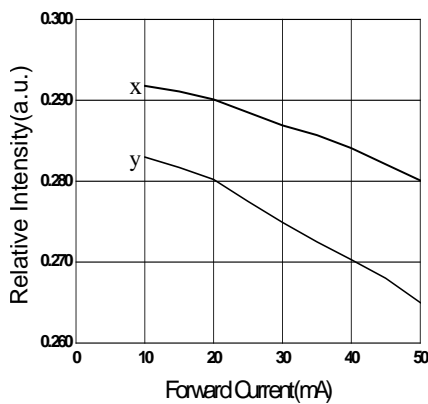
**Relative Intensity vs. Forward Current**



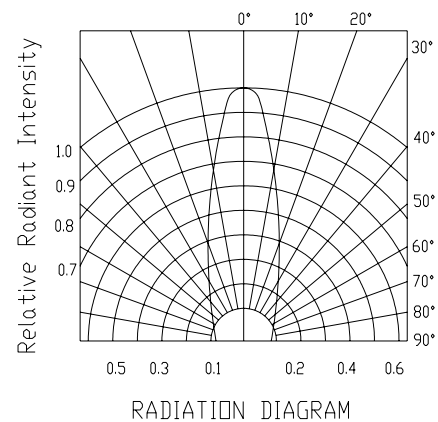
**Forward Current vs. Ambient Temp.**



**Chromaticity Coordinate vs. Forward Current**






**Relative Intensity vs. Angle Dispacemen**





**Label Form Specification**

<b>EVERLIGHT</b>	
CPN:	
P/N:	
	
204-15UTC/S400-X9	
QTY :	CAT:
	
LOT NO :	HUE:
	
MADE IN TAIWAN	

CPN: Customer's Production Number  
P/N : Production Number  
QTY: Packing Quantity  
CAT: IV&VF Rank  
HUE: Color Rank  
REF: Reference  
LOT No: Lot Number  
MADE IN TAIWAN: Production Place

**Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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