



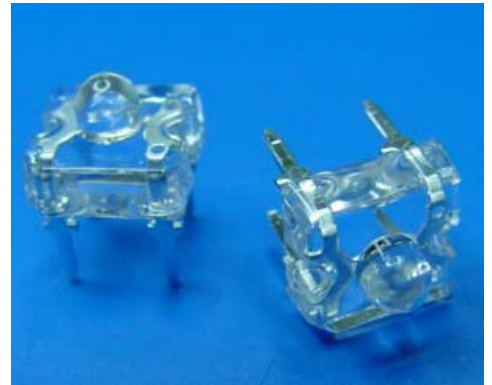
Technical Data Sheet

POWER LED

31-01UTC/S463

Features

- . High Flux Output.
- . Low Profile.
- . Low Thermal Resistance.
- . Low Power Consumption
- . Wide viewing angle 50°
- . The phosphor filled in the reflector converts the blue emission of InGaN chip to ideal white.
- . Typical chromaticity coordinates $x=0.29$, $y=0.30$ according to CIE1931.
- . ESD-withstand voltage: up to 4KV
- . Pb free.
- . The product itself will remain within RoHS compliant version.



Descriptions

This revolutionary package design allows the light designer to reduce the number of LEDs required and provide a more uniform and unique illuminated appearance than with other LED solutions. This is possible through the efficient optical package design and high-current capabilities.

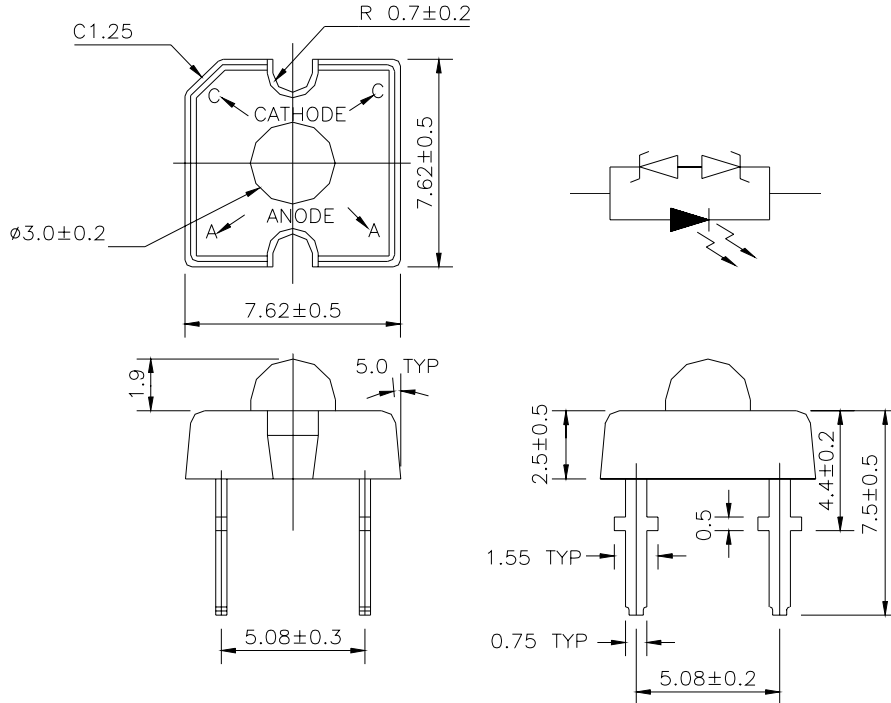
The low profile package can be easily coupled with reflectors or lenses to efficiently distribute light and provide the desired light appearance.

Applications

- . Automotive Exterior Lighting
- . Electronic Signs and Signals
- . Special Lighting application

Device Selection Guide

| PART NO. | Chip | | Lens Color |
|---------------|----------------|---------------|-------------|
| | Material | Emitted Color | |
| 31-01UTC/S463 | InGaN/Sapphire | White | Water Clear |

Package Dimensions


Notes: 1.All dimensions are in millimeters

2.An epoxy meniscus may extend about 1.5mm(0.059") down the leads

3.Tolerances unless dimensions ±0.25mm

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Units |
|--|------------------|------------|-------|
| Continuous Forward Current | I _F | 30 | mA |
| Peak Forward Current(Duty 1/10 @ 1KHZ) | I _{FP} | 100 | mA |
| Reverse Voltage | V _R | 5 | V |
| Operating Temperature | T _{opr} | -40 ~ +85 | °C |
| Storage Temperature | T _{stg} | -40 ~ +100 | °C |
| Soldering Temperature(T=5 sec) | T _{sol} | 260 ± 5 | °C |
| LED Junction Temperature | T _j | 115 | °C |
| Power Dissipation | P _d | 120 | mW |
| Zener Reverse Current | I _z | 100 | mA |
| Electrostatic Discharge | ESD | 4000 | V |

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Condition | Unit |
|--------------------------|----------------|------|------|------|----------------------|------|
| Forward Voltage | V _F | ---- | 3.5 | 4.0 | I _F =20mA | V |
| Reverse Current | I _R | ---- | ---- | 50 | V _R =5V | mA |
| Total Flux | Φ _v | 630 | 1000 | ---- | I _F =20mA | mlm |
| Viewing Angle | 2θ 1/2 | ---- | 50 | ---- | I _F =20mA | deg |
| Chromaticity Coordinates | x | ---- | 0.29 | ---- | I _F =20mA | ---- |
| | y | ---- | 0.30 | ---- | | ---- |
| Zener Reverse Voltage | V _Z | 5.8 | ---- | ---- | I _Z =5mA | V |

Rank

31-01UTC/S463



(1)



(2)



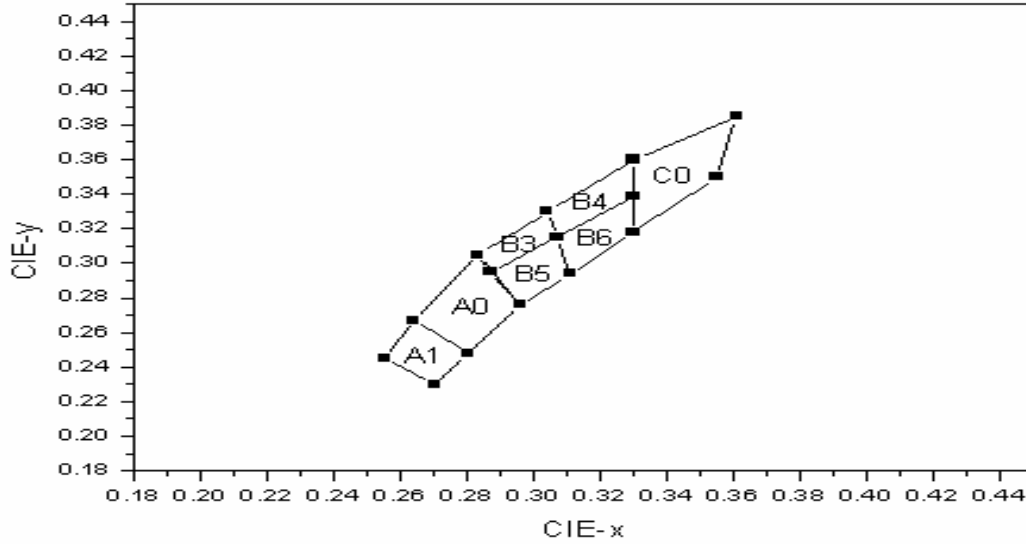
(3)

| (1) V _F (V) | | | (2) Color | | | (3) Φ _v (mlm) | | |
|------------------------|------|------|-----------|------|------|--------------------------|------|------|
| Bin. | Min. | Max. | Bin. | Min. | Max. | Bin. | Min. | Max. |
| 0 | 2.80 | 3.00 | A1 | ---- | ---- | V | 630 | 1250 |
| 1 | 3.00 | 3.20 | A0 | ---- | ---- | W | 1000 | 2000 |
| 2 | 3.20 | 3.40 | B3 | ---- | ---- | X | 1600 | 3200 |
| 3 | 3.40 | 3.60 | B4 | ---- | ---- | | | |
| 4 | 3.60 | 3.80 | B5 | ---- | ---- | | | |
| 5 | 3.80 | 4.00 | B6 | ---- | ---- | | | |
| | | | C0 | ---- | ---- | | | |

*Measurement Uncertainty of Forward Voltage : ±0.1V

*Measurement Uncertainty of Luminous Intensity: ±15%

CIE Chromaticity Diagram



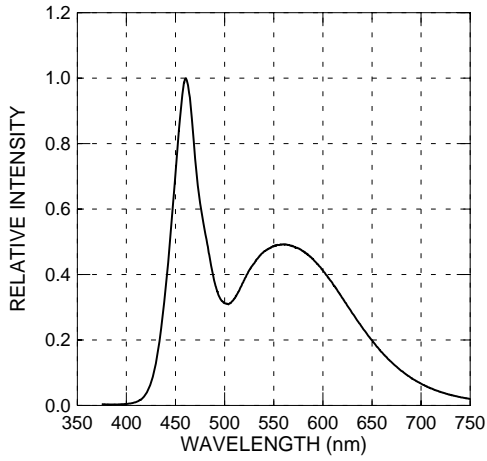
Color Ranks (IF=20mA , Ta=25°C)

| 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 | 0.267 | 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 |

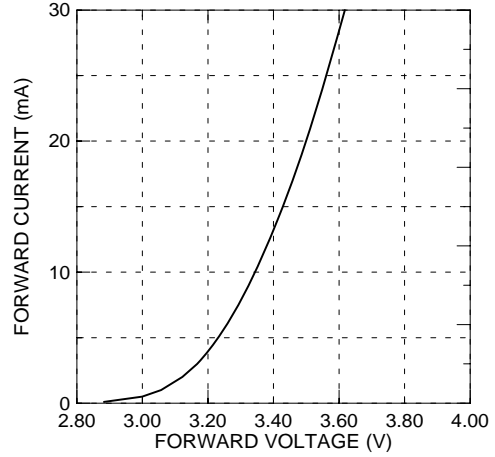
Measurement uncertainty of the color coordinates : ±0.01

Typical Electro-Optical Characteristics Curves

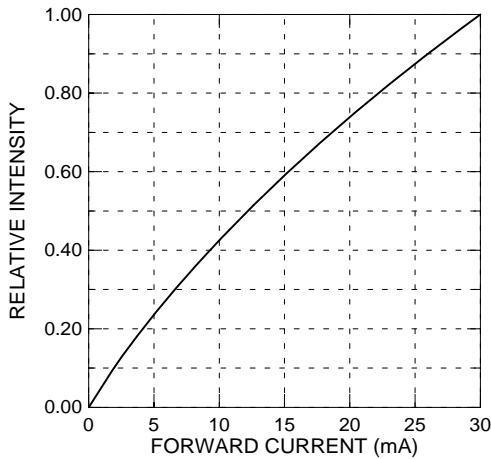
Relative Intensity vs. Wavelength



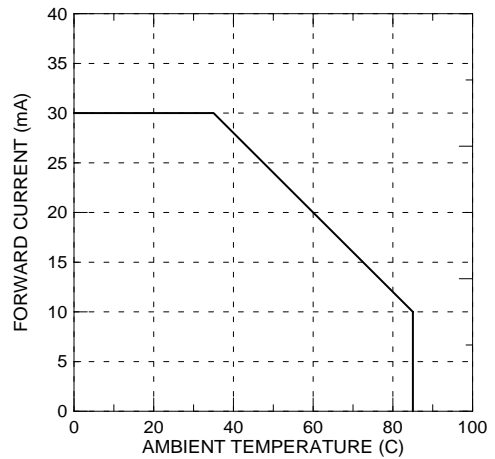
Forward Current vs. Forward Voltage



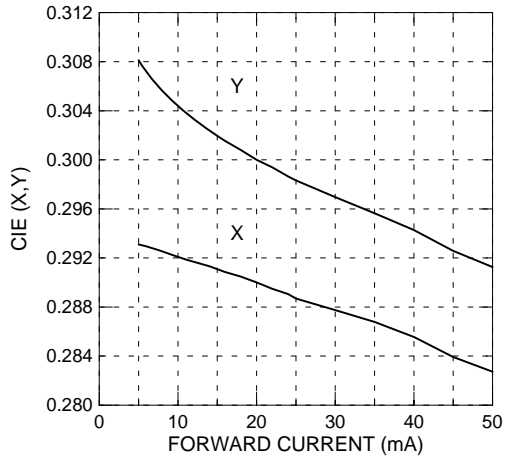
Relative Intensity vs. Forward Current



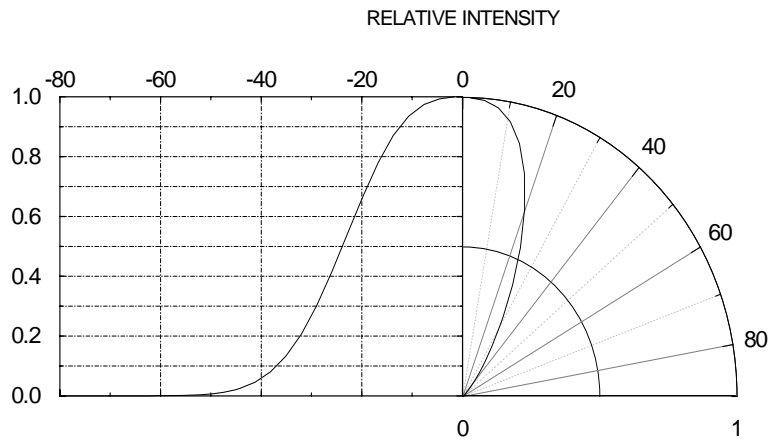
Forward Current vs. Ambient Temp.



Chromaticity Coordinate vs. Forward Current



Radiation Characteristics



Label Form Specification



CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Iv & VF

HUE: Color Bin Grade

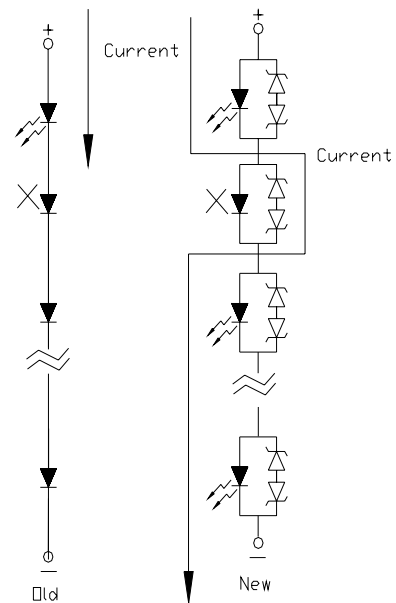
REF: Reference

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.
3. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.
4. Below the zener reference voltage V_z , all the current flows through LED and as the voltage rises to V_z , the zener diode "breakdown." If the voltage tries to rise above V_z current flows through the zener branch to keep the voltage at exactly V_z .
5. When the LED is connected using serial circuit, if either piece of LED is no light up but current can't flow through causing others to light down. In new design, the LED is parallel with zener diode. if either piece of LED is no light up but current can flow through causing others to light.





6. Soldering Condition

Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to case, and soldering beyond the base of the tie bar is recommended.

Avoiding applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.

Recommended soldering conditions:

| Hand Soldering | | DIP Soldering | |
|----------------------|-------------------------------------|---------------|--------------------------|
| Temp. at tip of iron | 400°C Max. (30W Max.) | Preheat temp. | 100°C Max. (60 sec Max.) |
| Soldering time | 3 sec Max. | Bath temp. | 265 Max. |
| Distance | 3mm Min.(From solder joint to case) | Bath time. | 5 sec Max. |
| | | Distance | 3mm Min. |

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