

**EVERLIGHT**

## Technical Data Sheet

### 3mm POWER LED

#### 31-01/R3C-ARTC/AM

#### Features

- . High Flux Output.
- . UV resistant epoxy
- . Low Thermal Resistance.
- . Low Profile.
- . Packaged in Tubes for Use with Automatic Insertion Equipment.
- . 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 Lighting
- . Electronic Signs and Signals
- . Message boards
- . Special Lighting application

#### Device Selection Guide

| PART NO.          | Chip     |               | Lens Color  |
|-------------------|----------|---------------|-------------|
|                   | Material | Emitted Color |             |
| 31-01/R3C-ARTC/AM | AlGaInP  | Brilliant Red | Water Clear |

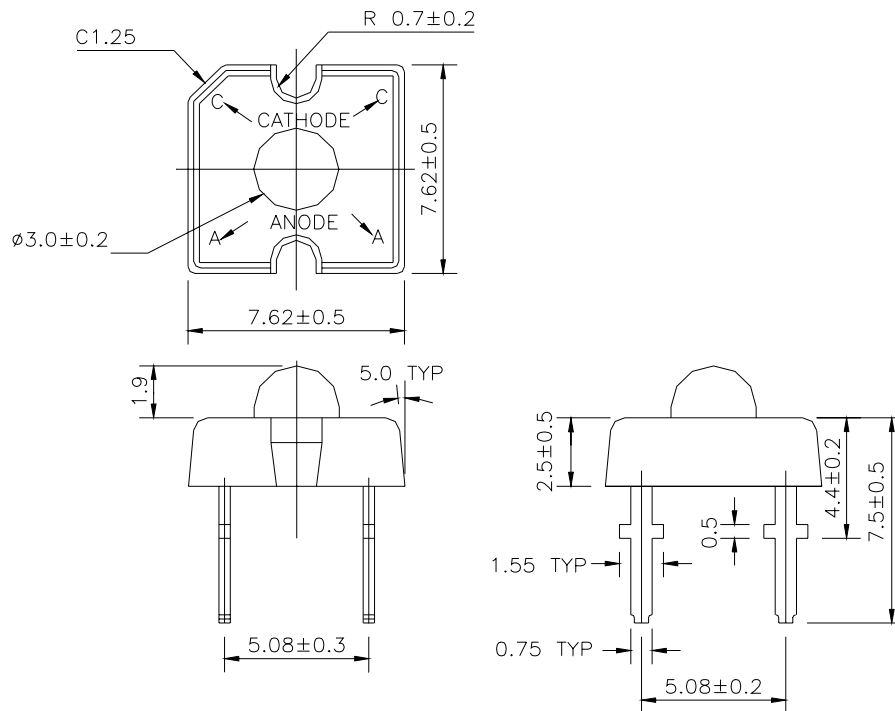


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### Package Dimensions



- 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  $\pm 0.25$ mm

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                              | Symbol    | Rating          | Units            |
|--|-----------|-----------------|------------------|
| Continuous Forward Current             | $I_F$     | 70              | mA               |
| Peak Forward Current(Duty 1/10 @ 1KHZ) | $I_{FP}$  | 200             | mA               |
| Operating Temperature                  | $T_{opr}$ | $-40 \sim +100$ | $^\circ\text{C}$ |
| Storage Temperature                    | $T_{stg}$ | $-40 \sim +100$ | $^\circ\text{C}$ |
| Soldering Temperature( $T=5$ sec)      | $T_{sol}$ | $260 \pm 5$     | $^\circ\text{C}$ |
| LED Junction Temperature               | $T_j$     | 125             | $^\circ\text{C}$ |
| Power Dissipation                      | $P_d$     | 220             | mW               |
| Electrostatic Discharge                | ESD       | 2000            | V                |
| Reverse Voltage                        | $V_R$     | 5               | V                |



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

| Parameter                    | Symbol          | Min. | Typ. | Max. | Condition            | Unit |
|------------------------------|-----------------|------|------|------|----------------------|------|
| Total Flux                   | $\Phi_v$        | 4500 | 6000 | 9000 | I <sub>F</sub> =70mA | mlm  |
| Viewing Angle                | 2 $\theta$ 1/2  | ---- | 50   | ---- | I <sub>F</sub> =70mA | deg  |
| Peak Wavelength              | $\lambda_p$     | ---- | 632  | ---- | I <sub>F</sub> =70mA | nm   |
| Dominant Wavelength          | $\lambda_d$     | 620  | 628  | 632  | I <sub>F</sub> =70mA | nm   |
| Spectrum Radiation Bandwidth | $\Delta\lambda$ | ---- | 20   | ---- | I <sub>F</sub> =70mA | nm   |
| Forward Voltage              | V <sub>F</sub>  | 2.5  | 2.9  | 3.3  | I <sub>F</sub> =70mA | V    |
| Reverse Current              | I <sub>R</sub>  | ---- | ---- | 10   | V <sub>R</sub> =5V   | μA   |

#### Rank

31-01/R3C-ARTC/AM

(1)

(2)

(3)

| (1) V <sub>F</sub> (V) |     |     | (2) $\lambda_d$ (nm) |     |     | (3) $\Phi_v$ (mlm) |      |      |
|------------------------|-----|-----|----------------------|-----|-----|--------------------|------|------|
| Bin                    | Min | Max | Bin                  | Min | Max | Bin                | Min  | Max  |
| 5                      | 2.5 | 2.7 | 2                    | 620 | 624 | R                  | 4500 | 5650 |
| 6                      | 2.7 | 2.9 | 3                    | 624 | 628 | S                  | 5650 | 7150 |
| 7                      | 2.9 | 3.1 | 4                    | 628 | 632 | T                  | 7150 | 9000 |
| 8                      | 3.1 | 3.3 |                      |     |     |                    |      |      |

\*Measurement Uncertainty of Forward Voltage : ±0.1V

\*Measurement Uncertainty of Luminous Intensity: ±15%

\*Measurement Uncertainty of Dominant Wavelength ±1.0nm



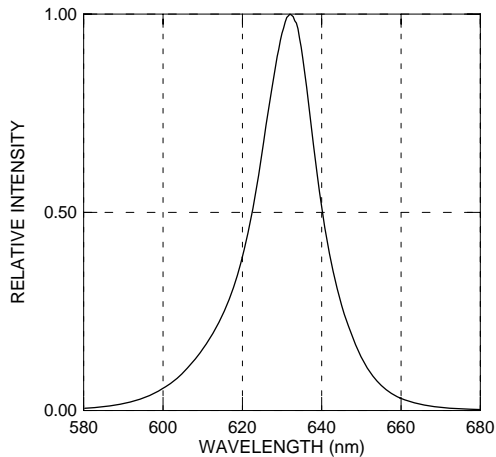
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## 3mm POWER LED

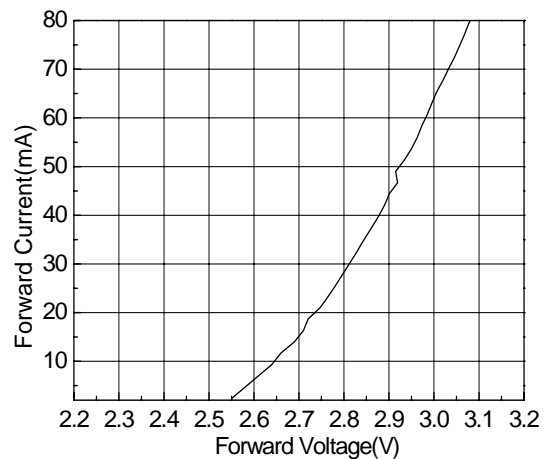
**31-01/R3C-ARTC/AM**

### Typical Electro-Optical Characteristics Curves

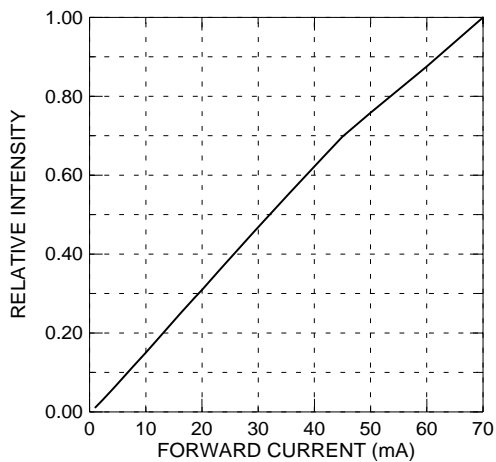
**Relative Intensity vs. Wavelength**



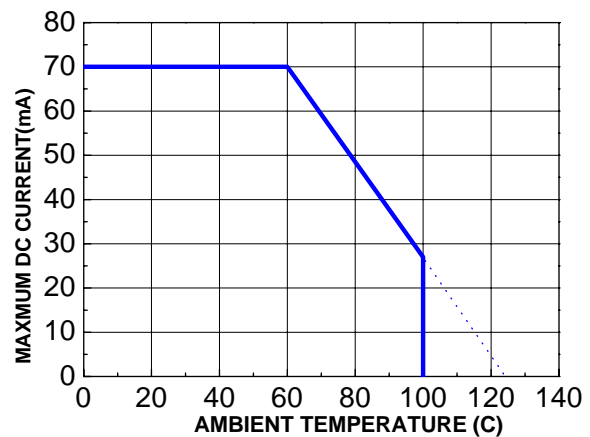
**Forward Current vs. Forward Voltage**



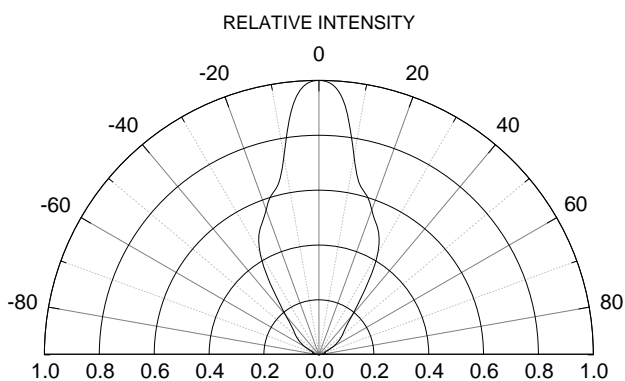
**Relative Intensity vs. Forward Current**



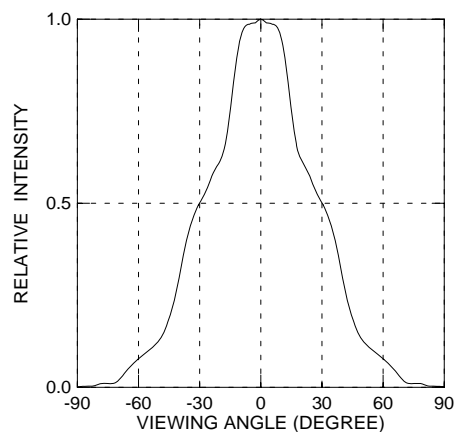
**Forward Current vs. Ambient Temp.**



**Relative Intensity vs. Angle Displacement**



**Relative Intensity vs. Off Axis Angle**





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#### Packing Quantity Specification

- (1) 60 pcs/1 tube, 30 tubes/1 small inside box, 12 small inside boxes/1 outside box.
- (2) 60 pcs/1 tube, 105 tubes/1 big inside box, 4 big inside boxes/1 outside box.

#### Label Form Specification

##### (1) Tube Label Form

|  |                            |         |
|--|----------------------------|---------|
|  | PART NO: 31-01/R3C-ARTC/AM | QTY: 60 |
|  | LOT NO:                    | CAT:    |

##### (2) Box Label Form

|                   |      |
|-------------------|------|
|                   |      |
| CPN:              |      |
| P/N:              |      |
|                   | RoHS |
| 31-01/R3C-ARTC/AM |      |
| QTY :             | CAT: |
|                   | HUE: |
| LOT NO :          | REF: |
|                   |      |
| MADE IN TAIWAN    |      |

PART NO: Everlight's Production Number

QTY: Packing Quantity

LOT NO: Lot Number

CAT: Ranks of Forward Voltage, Dominant Wavelength and Total Flux

CPN: Customer's Production Number

P/N : Production Number

HUE: Reference

REF: Reference

MADE IN TAIWAN: Production Place



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#### 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. 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.<br>(30W Max.)            | Preheat temp. | 100°C Max.<br>(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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