

# ВЫВОДНОЙ СВЕТОДИОД КРУГЛЫЙ

ARL-8003RGBC-B-7color Fast

## FEATURES

- Electricity control IC embedded.
- Fancy, fun, hottest in the market.
- Lens size with 5/8/10 mm options.
- Viewing angle 40°.
- Operating voltage range: DC 3–5 V.
- Frequency tolerance:  $\pm 20\%$ .
- RoHS compliant.

## DESCRIPTIONS

- New trend creations.
- Low energy consumptions.
- Low maintenance costs.
- High application design flexibility.
- High reliability.

## APPLICATIONS

- Toys / sports utilities.
- Miniature key chains.
- Effect lights.
- Display / decoration lights.
- Electronic displays and signals.
- Interior decoration lights.
- Indicator lights.
- Solar energy lights / garden lights.

## DEVICE SELECTION GUIDE

| LED Part No.               | CHIP     |               | Lens Color  |
|----------------------------|----------|---------------|-------------|
|                            | Material | Emitted Color |             |
| ARL-8003RGBC-B-7color Fast | AlGaInP  | Red           | Water Clear |
|                            | InGaN    | Green         |             |
|                            | InGaN    | Blue          |             |



8 mm



CLEAR



RGB



### USAGE NOTES:

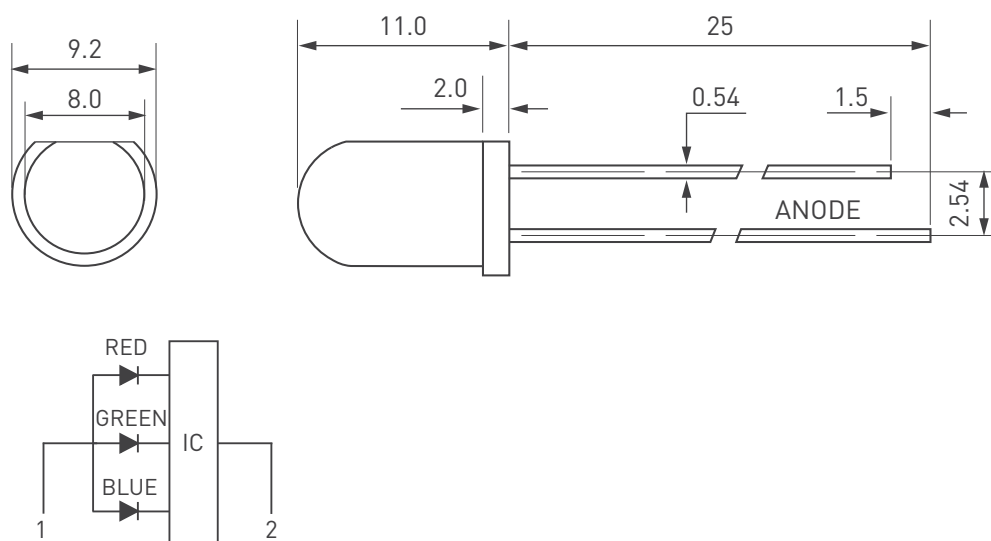
Surge will damage the LED.

When using LED, it must use a protective resistor in series with DC current about 20 mA.



**ATTENTION!**  
ELECTROSTATIC SENSITIVE DEVICES.  
OBSERVE PRECAUTIONS FOR HANDLING.

## PACKAGE DIMENSIONS



Unit: mm.

### Notes:

Other dimensions are in millimeters, tolerance is 0.25 mm except being specified.

Protruded resin under flange is 1.5 mm Max LED.

Bare copper alloy is exposed at tie-bar portion after cutting.

## ABSOLUTE MAXIMUM RATING ( $T_A = +25^\circ\text{C}$ )

| Parameter             | Symbol    | Absolute Maximum Rating | Unit             |
|-----------------------|-----------|-------------------------|------------------|
| Forward Pulse Current | $I_{FPM}$ | 100                     | mA               |
| Forward Current       | $I_{FM}$  | 30                      | mA               |
| Reverse Voltage       | $V_R$     | 5                       | V                |
| Operating Temperature | $T_{opr}$ | -40... +80              | $^\circ\text{C}$ |
| Storage Temperature   | $T_{stg}$ | -40... +100             | $^\circ\text{C}$ |
| Soldering Heat (5s)   | $T_{sol}$ | 260                     | $^\circ\text{C}$ |

## ELECTRO-OPTICAL CHARACTERISTICS (T<sub>A</sub> = +25 °C)

| Parameter                | Symbol            | Device | Min. | Typ. | Max. | Unit | Test Condition |
|--------------------------|-------------------|--------|------|------|------|------|----------------|
| Luminous Intensity       | I <sub>v</sub>    | Red    | 1500 | —    | 2000 | mcd  | If=20mA        |
|                          |                   | Green  | 2000 | —    | 2500 |      |                |
|                          |                   | Blue   | 800  | —    | 1200 |      |                |
| Viewing Angle            | 2θ <sub>1/2</sub> | Red    | —    | 45   | —    | Deg  | (Note 1)       |
|                          |                   | Green  |      |      |      |      |                |
|                          |                   | Blue   |      |      |      |      |                |
| Peak Emission Wavelength | λ <sub>p</sub>    | Red    | —    | 630  | —    | nm   | If=20mA        |
|                          |                   | Green  | —    | 525  | —    |      |                |
|                          |                   | Blue   | —    | 470  | —    |      |                |
| Spectral Line Half-Width | Δλ                | Red    | —    | 20   | —    | nm   | If=20mA        |
|                          |                   | Green  | —    | 35   | —    |      |                |
|                          |                   | Blue   | —    | 20   | —    |      |                |
| Forward Voltage          | V <sub>F</sub>    | Red    | —    | 2.2  | 2.5  | V    | If=20mA        |
|                          |                   | Green  | —    | 3.3  | 3.8  |      |                |
|                          |                   | Blue   | —    | 3.5  | 3.8  |      |                |
| Cycle                    | S                 |        | —    | 11   | —    | SEC  | If=20mA        |

**Note:**

1. θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

## RELIABILITY TEST ITEMS AND CONDITIONS

| Item                                | Test Conditions                                     | Test Hours/Cycle | Sample Size | Ac/Re |
|-------------------------------------|-----------------------------------------------------|------------------|-------------|-------|
| Solder Heat                         | Temp: +260 ±5 °C                                    | 5 sec            | 76 PCS      | 0/1   |
| Temperature Cycle                   | H: +85 °C — 30 min<br>f 5 min<br>L: -55 °C — 30 min | 50 cycles        | 76 PCS      | 0/1   |
| Thermal Shock                       | H: +100 °C — 5 min<br>f 10 set<br>L: -10 °C — 5 min | 50 cycles        | 76 PCS      | 0/1   |
| High Temperature Storage            | Temp: +100 °C                                       | 1000 HRS         | 76 PCS      | 0/1   |
| Low Temperature Storage             | Temp: -55 °C                                        | 1000 HRS         | 76 PCS      | 0/1   |
| DC Operating Life                   | Temp: +25 °C<br>If=20mA                             | 1000 HRS         | 76 PCS      | 0/1   |
| High Temperature/<br>Hight Humidity | 85 °C / 85% RH                                      | 1000 HRS         | 76 PCS      | 0/1   |

## FLASHING MODE

Seven Color[R, G, B, RG, GB, RB, RGB] Flash in turn; one fadeout, another fade-in at one time.

# TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES

