

ВЫВОДНОЙ СВЕТОДИОД КРУГЛЫЙ

ARL-8003RGBW-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: ±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-8003RGBW-B-7color Fast | AlGaInP | Red | Diffused |
| | InGaN | Green | |
| | InGaN | Blue | |



8 mm



DIFFUSED



RGB



USAGE NOTES:

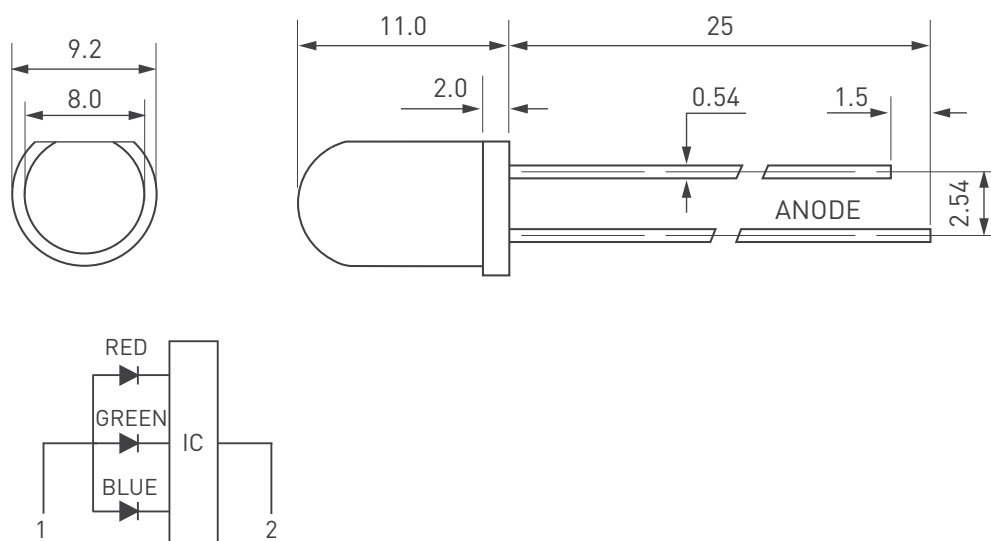
Surge will damage the LED.

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 | °C |
| Storage Temperature | T_{stg} | -40... +100 | °C |
| Soldering Heat (5s) | T_{sol} | 260 | °C |

ELECTRO-OPTICAL CHARACTERISTICS (T_A = +25 °C)

| Parameter | Symbol | Device | Min. | Typ. | Max. | Unit | Test Condition |
|--------------------------|-------------------|--------|------|------|------|------|----------------|
| Luminous Intensity | I _v | Red | 1000 | — | 1500 | mcd | If=20mA |
| | | Green | 1500 | — | 2500 | | |
| | | Blue | 800 | — | 1200 | | |
| Viewing Angle | 2θ _{1/2} | Red | — | 60 | — | Deg | (Note 1) |
| | | Green | | | | | |
| | | Blue | | | | | |
| Peak Emission Wavelength | λ _p | 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 _F | Red | — | 2.2 | 2.5 | V | If=20mA |
| | | Green | — | 3.3 | 3.8 | | |
| | | Blue | — | 3.3 | 3.8 | | |
| Cycle | S | | — | 11 | — | SEC | If=20mA |

Note:

1. θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

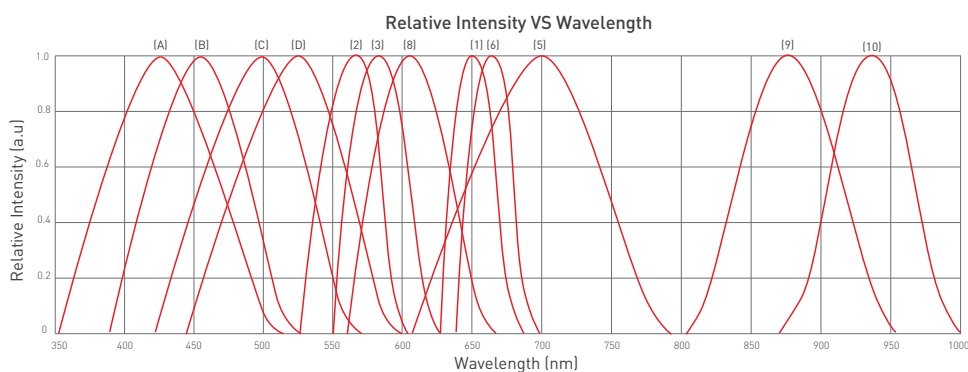
RELIABILITY TEST ITEMS AND CONDITIONS

| 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 J 5 min L: -55 °C — 30 min | 50 cycles | 76 PCS | 0/1 |
| Thermal Shock | H: +100 °C — 5 min J 10 set 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 If=20mA | 1000 HRS | 76 PCS | 0/1 |
| High Temperature/ Higt 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



- (1) GaAsP / GaAs 655nm / Red
- (2) Gap 568nm / Yellow Green
- (3) GaAsP / Gap 585nm Yellow
- (4) GaAsP / Gap 635nm / Hi-Eff Red
- (5) Gap 700nm / Bright Red
- (6) GaAlAs / GaAs 660nm / Super Red
- (8) GaAsP / GaP 610nm / Orange
- (9) GaAlAs 880nm
- (10) GaAs / GaAs&GaAlAs / GaAs 940nm
- (A) GaN 430nm / Blue
- (B) InGaN 470nm / Blue
- (C) InGaN 502nm / Bluish Green
- (D) InGaN 525nm / Pure Green

