

# ВЫВОДНОЙ СВЕТОДИОД КРУГЛЫЙ

**ARL-10003RGBW-B-7color Fast**

## FEATURES

- Electricity control IC embedded.
- Fancy, fun, hottest in the market.
- Lens size with 5/8/10 mm options.
- Viewing angles 40°.
- Operating voltage range: DC 3–5 V.
- Blinking frequency: 1.8 Hz.
- 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	
<b>ARL-10003RGBW-B-7color Fast</b>	<b>AlGaInP</b>	<b>Red</b>	<b>White Diffused</b>
	<b>InGaN</b>	<b>Green</b>	
	<b>InGaN</b>	<b>Blue</b>	



10 mm



DIFFUSED



RGB



### USAGE NOTES:

The ultra bright LED is an electrostatic insensitive device, so static electricity and surge will damage the LED.

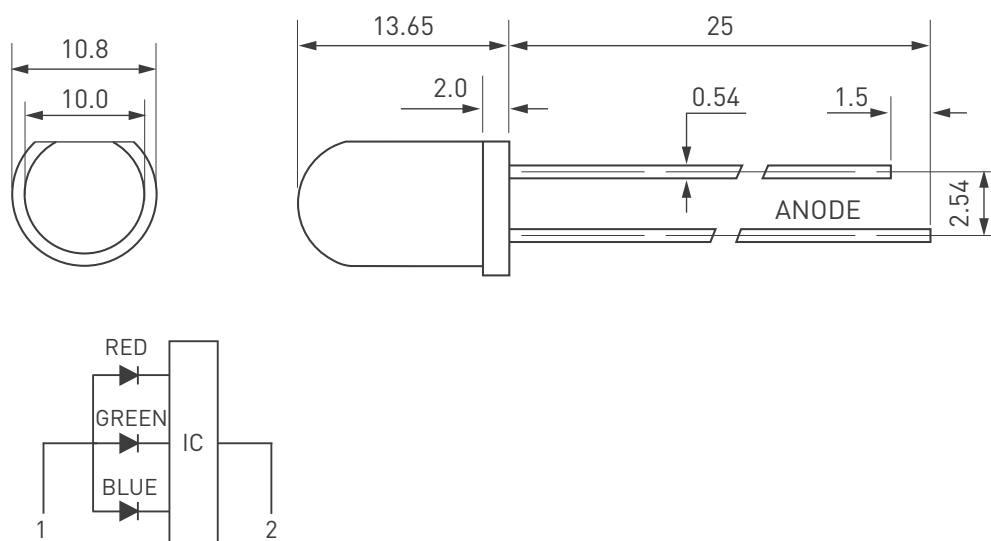
It is required to wear a wrist-band when handling the LED. All device, equipment, machinery, desk and ground must be properly grounded.

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
<b>Forward Pulse Current</b>	$I_{FPM}$	<b>100</b>	<b>mA</b>
<b>Forward Current</b>	$I_{FM}$	<b>30</b>	<b>mA</b>
<b>Reverse Voltage</b>	$V_R$	<b>5</b>	<b>V</b>
<b>Operating Temperature</b>	$T_{opr}$	<b>-40... +80</b>	<b>°C</b>
<b>Storage Temperature</b>	$T_{stg}$	<b>-40... +100</b>	<b>°C</b>
<b>Soldering Heat (5s)</b>	$T_{sol}$	<b>260</b>	<b>°C</b>

## 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	—	300	400	mcd	I <sub>f</sub> =20mA
		Green	—	300	400		
		Blue	—	300	400		
Viewing Angle	2θ <sub>1/2</sub>	Red	—	40	—	Deg	(Note 1)
		Green					
		Blue					
Peak Emission Wavelength	λ <sub>p</sub>	Red	—	630	—	nm	I <sub>f</sub> =20mA
		Green	—	525	—		
		Blue	—	470	—		
Spectral Line Half-Width	Δλ	Red	—	20	—	nm	I <sub>f</sub> =20mA
		Green	—	35	—		
		Blue	—	20	—		
Forward Voltage	V <sub>F</sub>	Red	—	2.2	2.6	V	I <sub>f</sub> =20mA
		Green	—	3.5	4.0		
		Blue	—	3.5	4.0		
Cycle	S		—	5	—	SEC	I <sub>f</sub> =20mA

### Note:

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

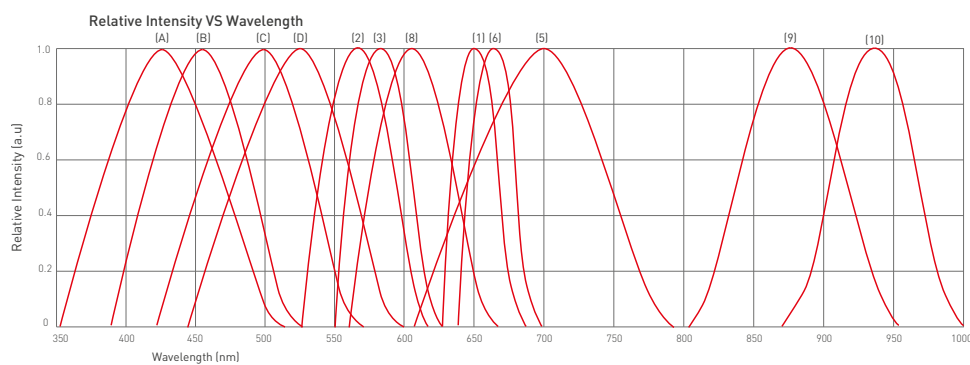
## TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
Solder Heat	temp: 260 °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 I <sub>f</sub> =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/Gap585nm 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) InGaN502nm/Bluish Green
- (D) InGaN525nm/Pure Green

