

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: $\pm 20\%$.
- 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-8003RGBW-B-7color Fast	AlGaInP	Red	Diffused
	InGaN	Green	
	InGaN	Blue	



8 mm



DIFFUSED



RGB



USAGE NOTES:

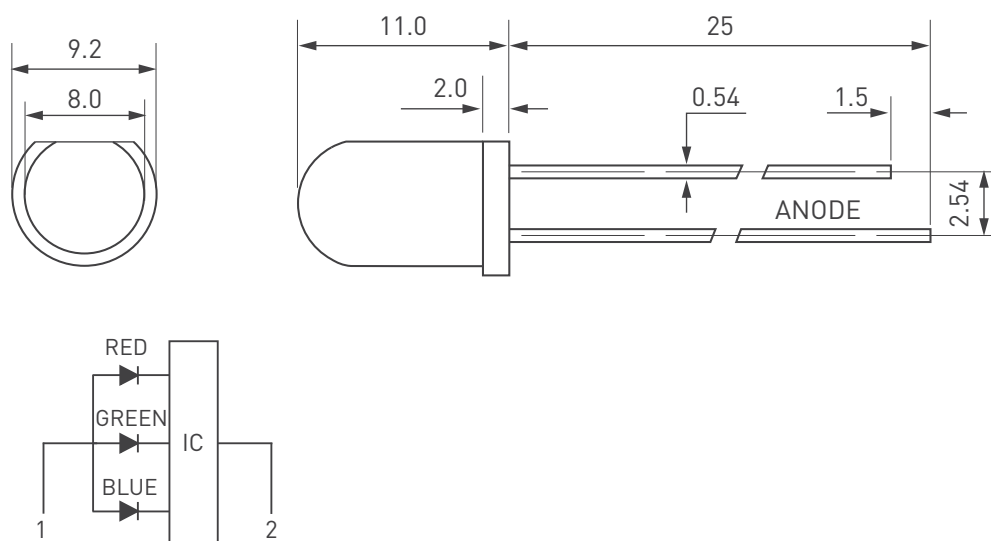
Surge will damage the LED.

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	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40... +100	$^\circ\text{C}$
Soldering Heat (5s)	T_{sol}	260	$^\circ\text{C}$

ELECTRO-OPTICAL CHARACTERISTICS (T_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

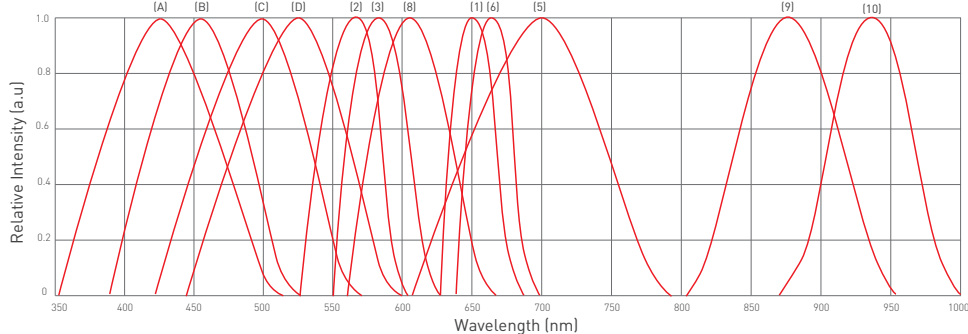
Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
Solder Heat	Temp: +260 ±5 °C	5 sec	76 PCS	0/1
Temperature Cycle	H: +85 °C — 30 min f 5 min L: -55 °C — 30 min	50 cycles	76 PCS	0/1
Thermal Shock	H: +100 °C — 5 min f 10 set L: -10 °C — 5 min	50 cycles	76 PCS	0/1
High Temperature Storage	Temp: +100 °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.

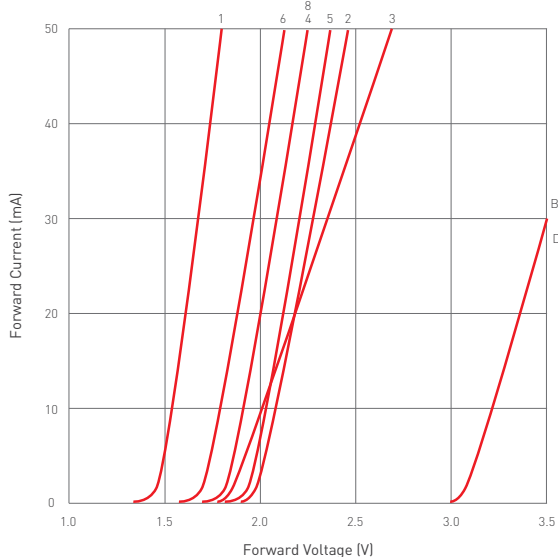
TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES

Relative Intensity VS Wavelength

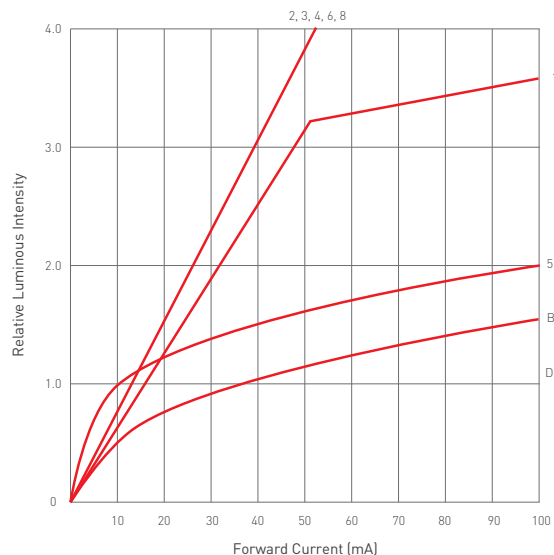


- (1) GaAsP / GaAs 655nm / Red
- (2) Gap 568nm / Yellow Green
- (3) GaAsP / Gap 585nm Yellow
- (4) GaAsP / Gap 635nm / Hi-Eff Red
- (5) Gap 700nm / Bright Red
- (6) GaAlAs / GaAs 660nm / Super Red
- (8) GaAsP / GaP 610nm / Orange
- (9) GaAlAs 880nm
- (10) GaAs / GaAs&GaAlAs / GaAs 940nm
- (A) GaN 430nm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

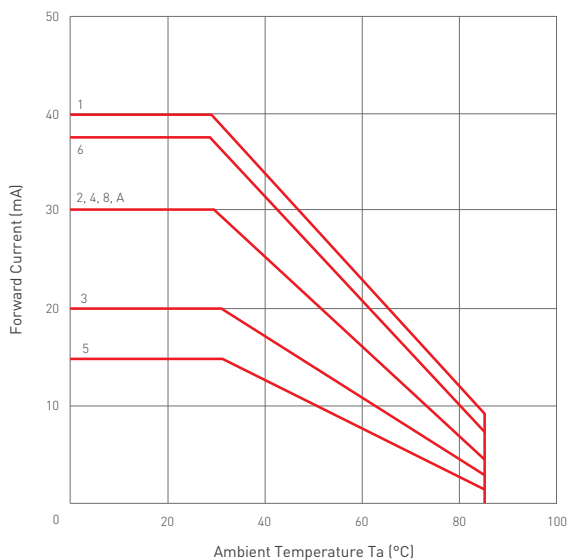
Forward Current VS Forward Voltage



Relative Luminous Intensity VS Forward Current



Forward Current VS Ambient Temp



Forward Current VS Relative Intensity

