

ARL-8003RGBW-B-7color Slow

Features

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

Descriptions

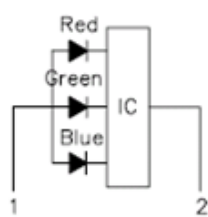
New trend creations
 Low energy consumptions
 Low maintenance costs
 High application design flexibility
 High reliability

Usage Notes:

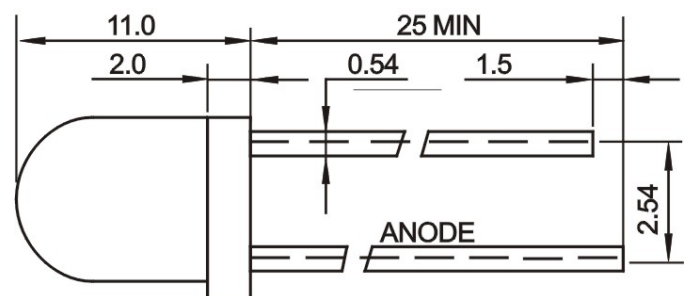
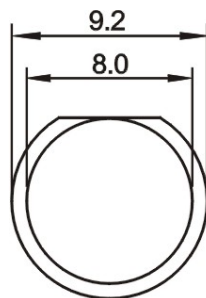
Surge will damage the LED

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

Package Dimensions



UNIT:mm



Notes:

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

Protruded resin under flange is 1.5mm Max LED.

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



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 Slow	AlGaInP	Red	White Diffused
	InGaN	Green	
	InGaN	Blue	

Absolute Maximum Rating (Ta=25 °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	Topr	-40~+80	°C
Storage Temperature	Tstg	-40~+100	°C
Soldering Heat (5s)	Tsol	260	°C

Electro-Optical Characteristics (Ta=25 °C)

Parameter	Symbol	Device	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I _v	Red	100 0	---	1500	mcd	IF=20mA
		Green	150 0	---	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

Reliability test items and conditions :

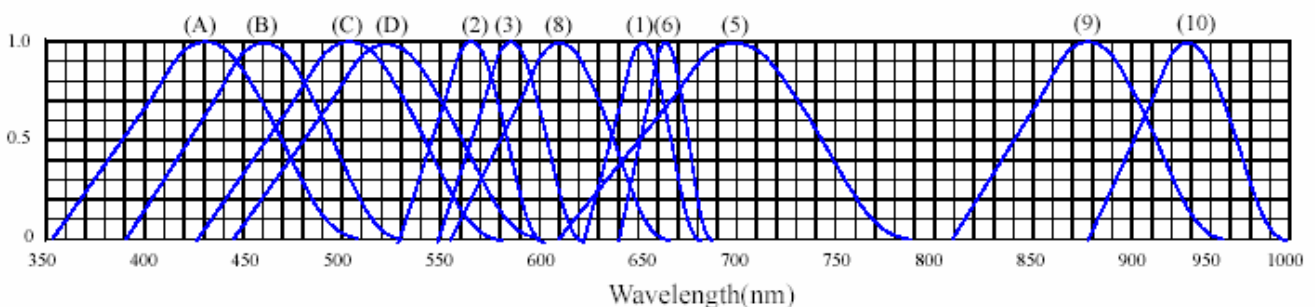
Typical Electro-Optical Characteristics Curves

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5°C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min └ 5min L : -55°C 30min	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min └ 10set L : -10°C 5min	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	TEMP : 25°C I _F =20mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	76 PCS	0/1

Flashing Mode

Seven Color(R-G-B-RB-BG-GR-RGB) Flash in turn; one fadeout, another fade-in at one time.

TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH(λ_p)

- (1) GaAsP/GaAs 655nm/Red
- (2) Gap 568nm/Yellow Green
- (3) GaAsP/Gap585nm Yellow
- (4) GaAsP/Gap 635nm/ Hi-Eff Red

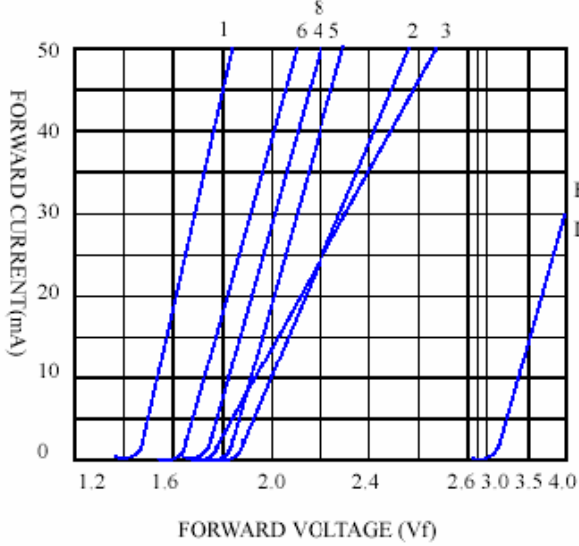
- (9)- GaAlAs 880nm
- (10) GaAs/GaAs&GaAlAs/GaAs 940nm
- (A) GaN 430nm/Blue
- (B) InGaN 470nm/Blue

- (5) Gap 700nm/ Bright Red
- (6) GaAlAs/GaAs 660nm/ Super Red
- (8) GaAsP/GaP 610nm/ Orange

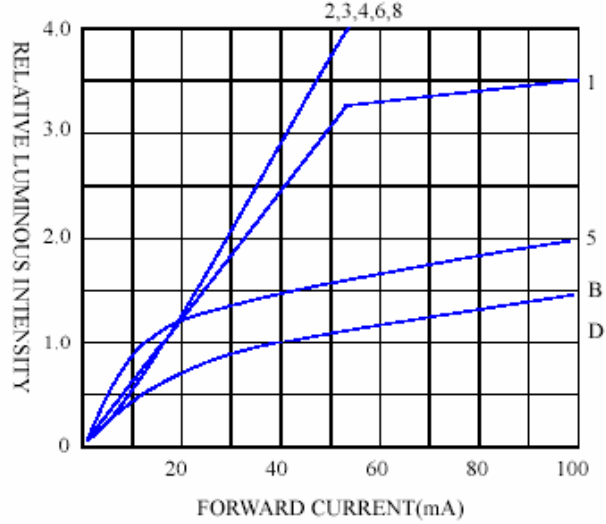
- (C) InGaN502nm/Bluish Green
- (D) InGaN525nm/Pure Green

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

