

# Preliminary

## R503VC2E-020

## LED5V-RD

### DATA SHEET



QC:楊艷玲

ENG:李冰紅

Prepared By:陳結佩

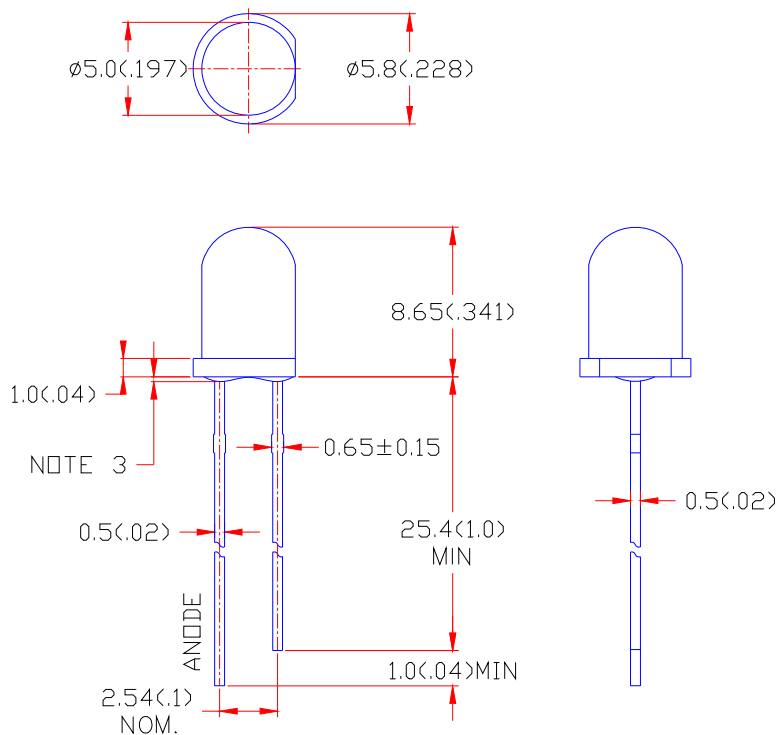
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Version:1.0

## Features:

- ◆ High intensity
- ◆ 5mm diameter package
- ◆ General purpose leads
- ◆ Pb-free

## Package Dimensions:



Part NO.	Chip Material	Lens Color	Emission Color
R503VC2E-020	AlGaInP	Water Clear	Super Bright Red

## Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm (.04") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.
6. This data-sheet only valid for six months.

### Absolute Maximum Ratings at Ta=25°C

Parameter	MAX.	Unit
Power Dissipation	120	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	100	mA
Continuous Forward Current	20	mA
Derating Linear From 50°C	0.4	mA/°C
Reverse Voltage	5	V
Operating Temperature Range	-30°C to +80°C	
Storage Temperature Range	-40°C to +100°C	
Lead Soldering Temperature[4mm(.157") From Body]	255±5°C for 5 Seconds	
Wave Soldering Temperature	Peak Temperature 245°C~260°C for 10 Seconds	

### Electrical Optical Characteristics at Ta=25°C

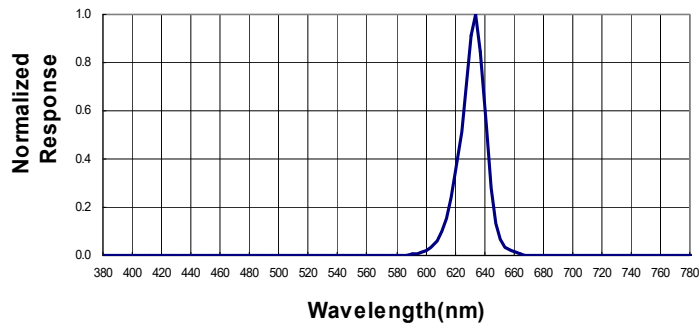
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I <sub>v</sub>	2200	5000		mcd	I <sub>F</sub> =20mA (Note 1)
Viewing Angle	2θ <sub>1/2</sub>	10	15	20	Deg	(Note 2)
Peak Emission Wavelength	λ <sub>p</sub>	630	635	640	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	620	625	630	nm	I <sub>F</sub> =20mA (Note 3)
Spectral Line Half-Width	Δλ	13	18	23	nm	I <sub>F</sub> =20mA
Operating Voltage	V <sub>F</sub>		4.8	6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	---	---	10	μA	V <sub>R</sub> =5V

#### Note:

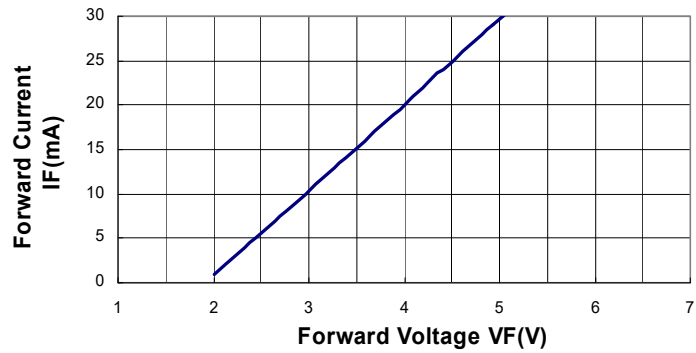
1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength (λ<sub>d</sub>) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
4. Forward voltage measurement allowance is ±0.1V
5. Luminous Intensity Measurement Allowance is ±10%
6. Dominant Wavelength measurement allowance is ±1nm.

**Typical Electrical / Optical Characteristics Curves**  
**(25°C Ambient Temperature Unless Otherwise Noted)**

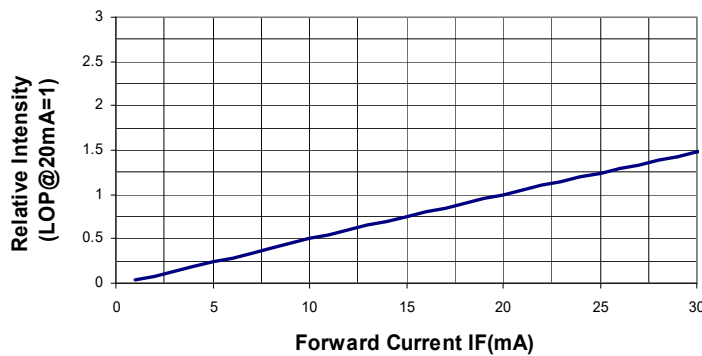
**Spectral Radiance ( Peak @635 nm)**



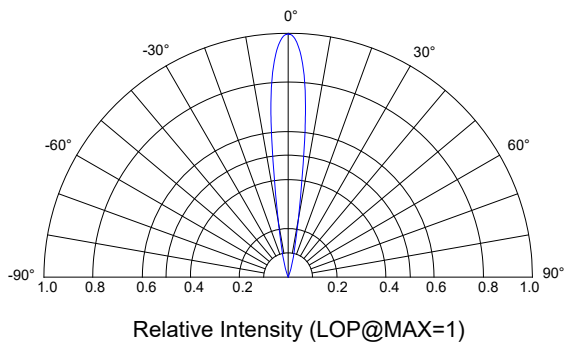
**Forward Current vs Forward Voltage**



**Relative Luminous Intensity vs Forward Current**



**Beam Pattern**



**Forward Current Derating Curve**

