

PRODUCT SPECIFICATION

Part Number
PL105-4RG1213

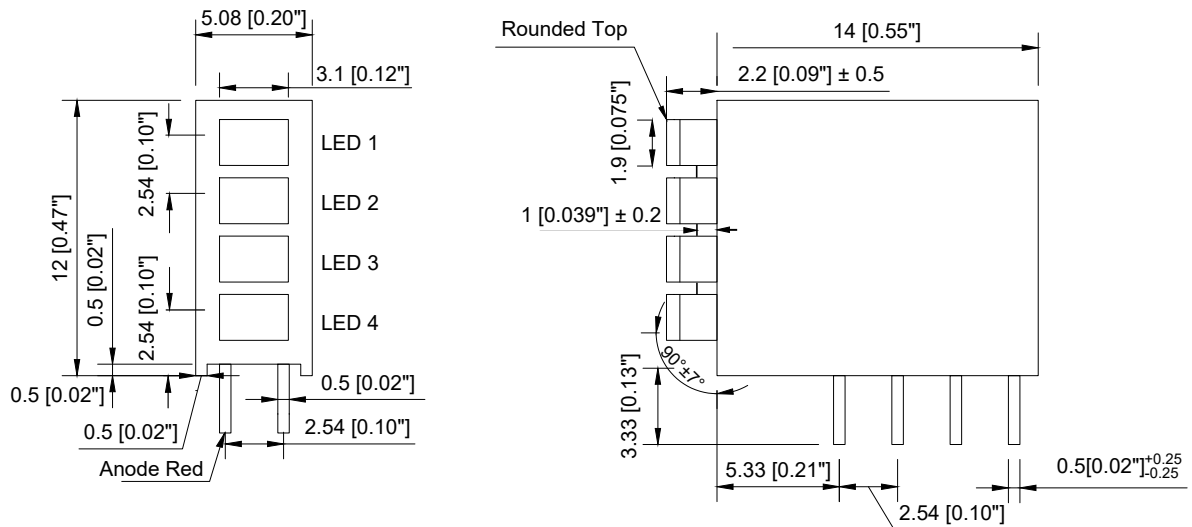
Details

- 2 x 3mm Quad-Level CBI LED
- Bi-Color Red/Green Emitting
- Housing material Nylon 66 UL94V-0
- White Diffused lens

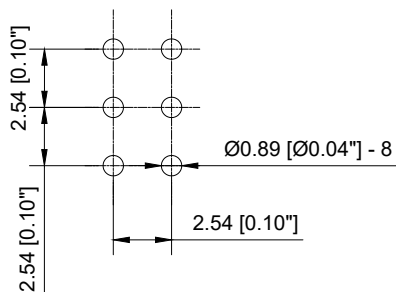
Features

- RoHS Compliant
- Space saving Circuit Board Indicator
- Rugged and Durable

Mechanical Dimensions



Recommended PCB Layout



Notes:

1. All dimensions are in millimeters unless otherwise noted
2. Tolerance is ± 0.25 mm unless otherwise noted
3. Specifications subject to change without notice



Device Selection Guide

Part Number	Housing Material	Chip		LED Lens Type
		Material	Emitting Color	
PL105-4RG1213	Nylon 66 UL94-0	GaAsP/GaP	Orange-Red	White Diffused
		GaP/GaP	Green	

LED Absolute Maximum Ratings at Ta=25 °C

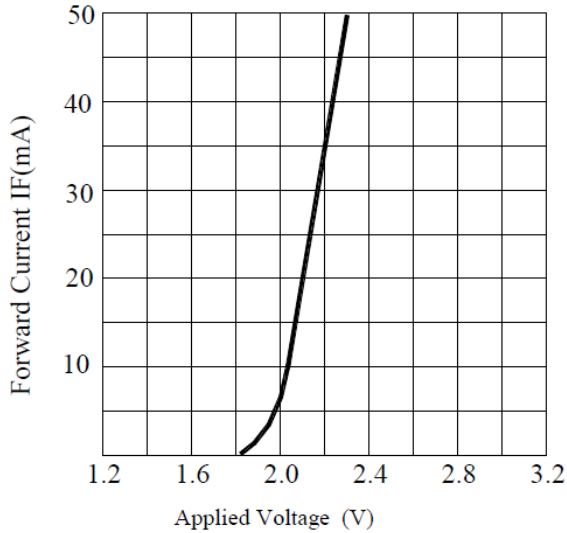
Parameter	Symbol	Rating	Unit
Power Dissipation	PD	Red	78
		Green	78
Reverse Voltage	VR	5	V
DC Forward Current	IF	30	mA
Reverse (Leakage) Current	Ir	100	μA
Peak Current (duty cycle 1/10, 1KHz)	IPF	100	mA
Operating Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-40~+100	°C
Soldering Temperature (1.6mm from body)	Tsol.	Dip Soldering : 260°C for 5 sec. Hand Soldering : 350°C for 3 sec.	

LED Electrical and Optical Characteristics at Ta=25 °C

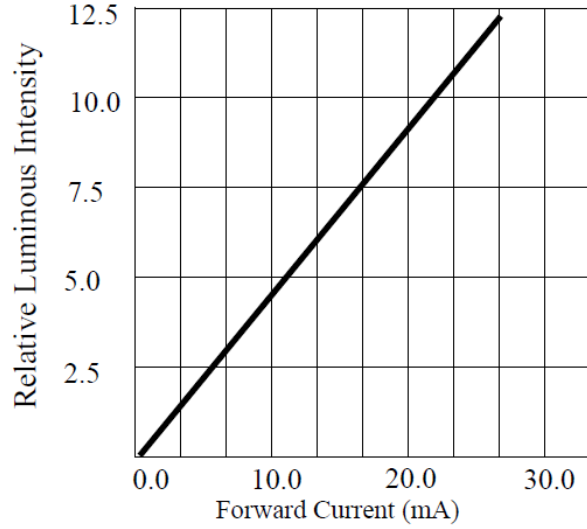
Parameter	Symbol	Color	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	Red	3.0	9.0	--	mcd	IF=20mA
		Green	3.0	9.0	--		
Forward Voltage	Vf	Red	--	2.1	2.3	V	
		Green	--	2.1	2.6		
Peak Wavelength	λp	Red	--	642	--	nm	
		Green	--	567	--		
Dominant Wavelength	λd	Red	--	629	--		
		Green	--	572	--		
Reverse (Leakage) Current	Ir	--	--	--	50	μA	Vr=5V
Viewing Angle	2θ1/2	--	--	120	--	--	deg
Spectrum Line Halfwidth	Δλ	Red	--	35	--	nm	IF=20mA
		Green	--	30	--		

- Notes: 1. Tolerance of Luminous Intensity is ±15%
 2. Tolerance of Forward Voltage is ±0.1V
 3. Tolerance of Dominant Wavelength is ±1nm
 4. Customer's special requirements are welcome.

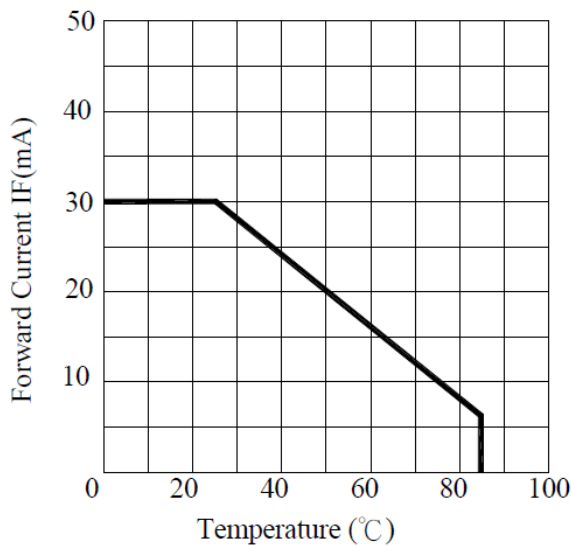
LED Typical Electrical / Optical Characteristic Curves



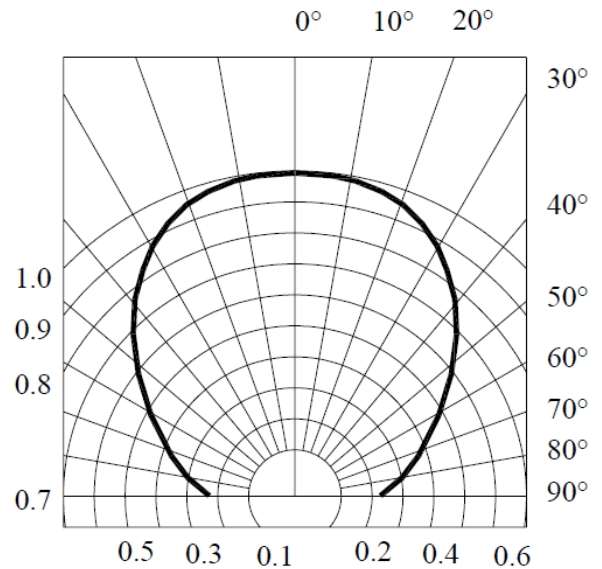
FORWARD CURRENT VS. APPLIED VOLTAGE



FORWARD CURRENT VS. LUMINOUS INTENSITY



FORWARD CURRENT VS. AMBIENT TEMPERATURE



RADIATION DIAGRAM

LED Precautions for Use

1. Temperature in use

Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel, etc) which are used for semiconductor products such as transistors cannot be added to the resin.

Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on the following during use.

Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130°C.

At a temperature exceeding this limit, the coefficient of linear expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.

If external force or stress is applied at that time, it may cause a wire rupture.

2. Soldering

Please be careful on the following at soldering.

After soldering, avoid applying external force, stress, and excessive vibration until the products go to cooling process (normal temperature), <Same for products with terminal leads>

(1) Soldering measurements:

Distance between melted solder side to bottom of resin shall be 1.6mm or longer.

(2) Dip soldering :

Pre-heat: 90°C max. (Backside of PCB), Within 60 seconds.

Solder bath: 260±5°C (Solder temperature), Within 5 seconds.

(3) Hand soldering: 350°C max. (Temperature of soldering iron tip), Within 3 seconds.

3. Insertion

Pitch of the LED leads and pitch of mounting holes need to be same.

4. Others

Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

Baking temperature: 120°C max. Baking time: Within 60 seconds.

If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.



PL105-4RG1213 Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions			
Rev.	Comments	Page	Date
0	Released Spec	--	10/23/2017