PRODUCT SPECIFICATION

Part Number

PL105-4R12

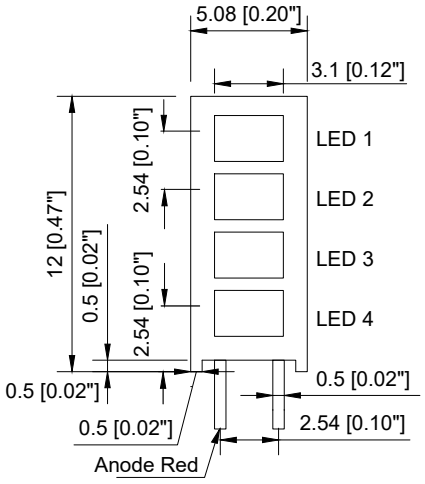
Details

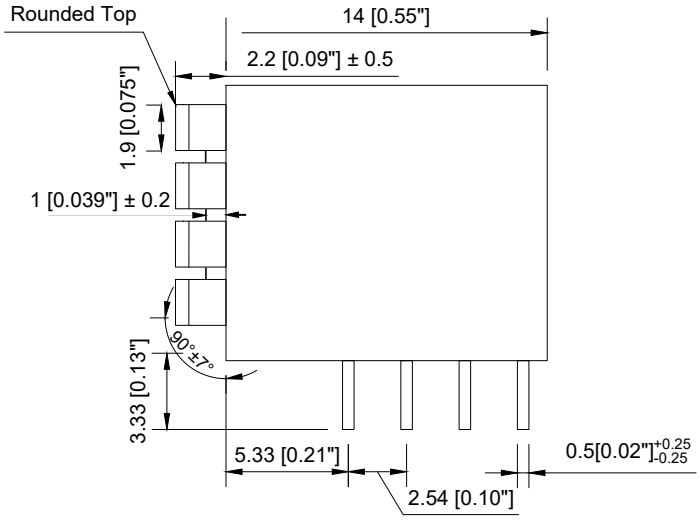
- 2 x 3mm Quad-Level CBI LED
- Emitting Color: Orange-Red
- Housing material Nylon 66 UL94V-0
- Color Diffused lens

Features

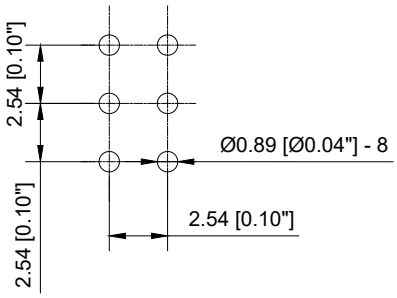
- RoHS Compliant
- Space saving Circuit Board Indicator
- Rugged and Durable
- Light Isolation Tabs to eliminate light bleed

Mechanical Dimensions





Recommended PCB Layout



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

Device Selection Guide

Part Number	Housing Material	Chip			LED Lens Type
		Chip No.	Material	Emitting Color	
PL105-4R12	Nylon 66 UL94-0	R12	GaAsP/GaP	Orange-Red	Color Diffused

LED Absolute Maximum Ratings at Ta=25℃

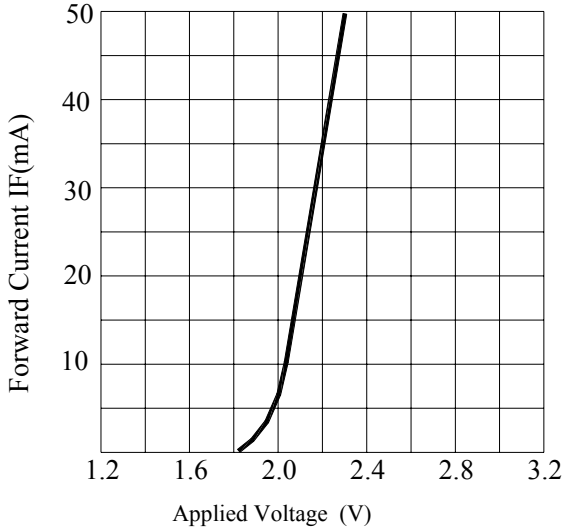
Parameter	Symbol	Rating	Unit
Power Dissipation	PD	78	mW
Reverse Voltage	VR	5	V
DC Forward Current	IF	30	mA
Reverse (Leakage) Current	Ir	100	μA
Peak Current (duty cycle 1/10, 1KHz)	IPF	100	mA
Operating Temperature	Topr	-25~+85	℃
Storage Temperature	Tstg	-40~+100	℃
Soldering Temperature (1.6mm from body)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

LED Electrical and Optical Characteristics at Ta=25℃

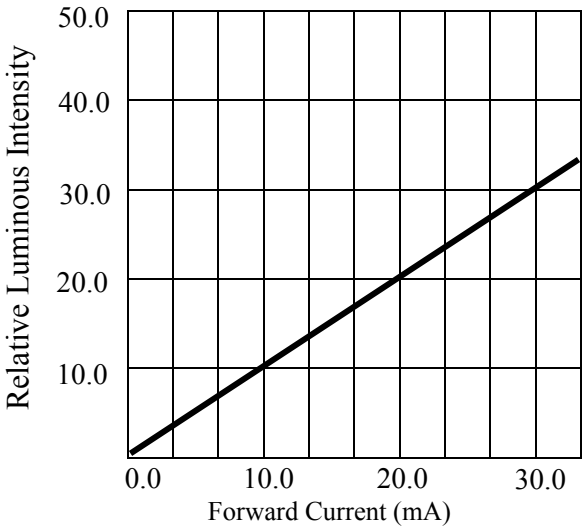
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	9.0	20.0	--	mcd	IF=20mA
Forward Voltage	Vf	--	2.1	2.6	V	
Peak Wavelength	λp	--	642	--	nm	
Dominant Wavelength	λd	--	629	--		
Reverse (Leakage) Current	Ir	--	--	100	μA	Vr=5V
Viewing Angle	2θ1/2	--	110	--	--	deg
Spectrum Line Halfwidth	Δλ	--	35	--	nm	IF=20mA

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.

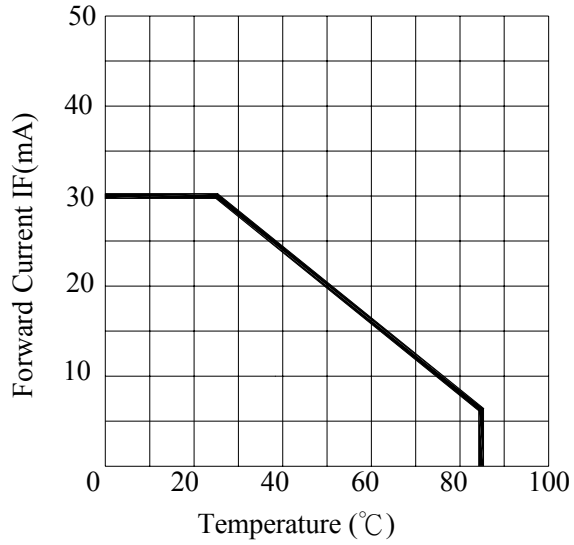
LED Typical Electrical / Optical Characteristic Curves



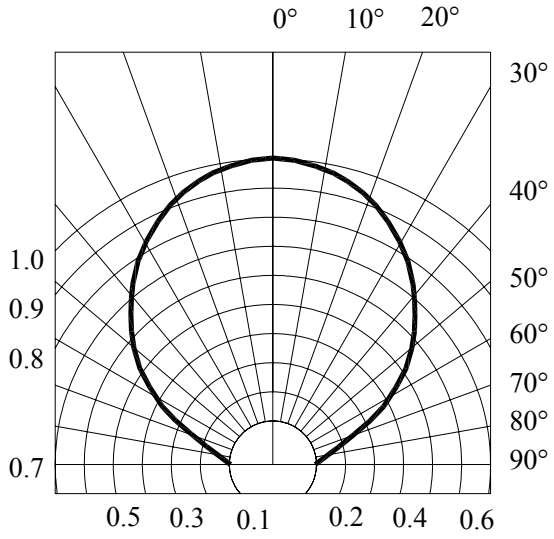
FORWARD CURRENT VS.APPLIED VOLTAGE



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℃.

At a temperature exceeding this limit, the coefficient of liner 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, avoided 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℃ max. (Backside of PCB), Within 60 seconds.

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

(3) Hand soldering: 350℃ 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℃ 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.

PL105-4R12 Customer Approval Signatures	Approved By	Checked By	Notes/Remarks

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