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DATA SHEET

PART NO. : L-5C3GD

REV : A / 4

CUSTOMER'S APPROVAL : \_\_\_\_\_

DCC : \_\_\_\_\_

DRAWING NO. : DS-35-03-0727

DATE : 2009-02-24

Page : 1

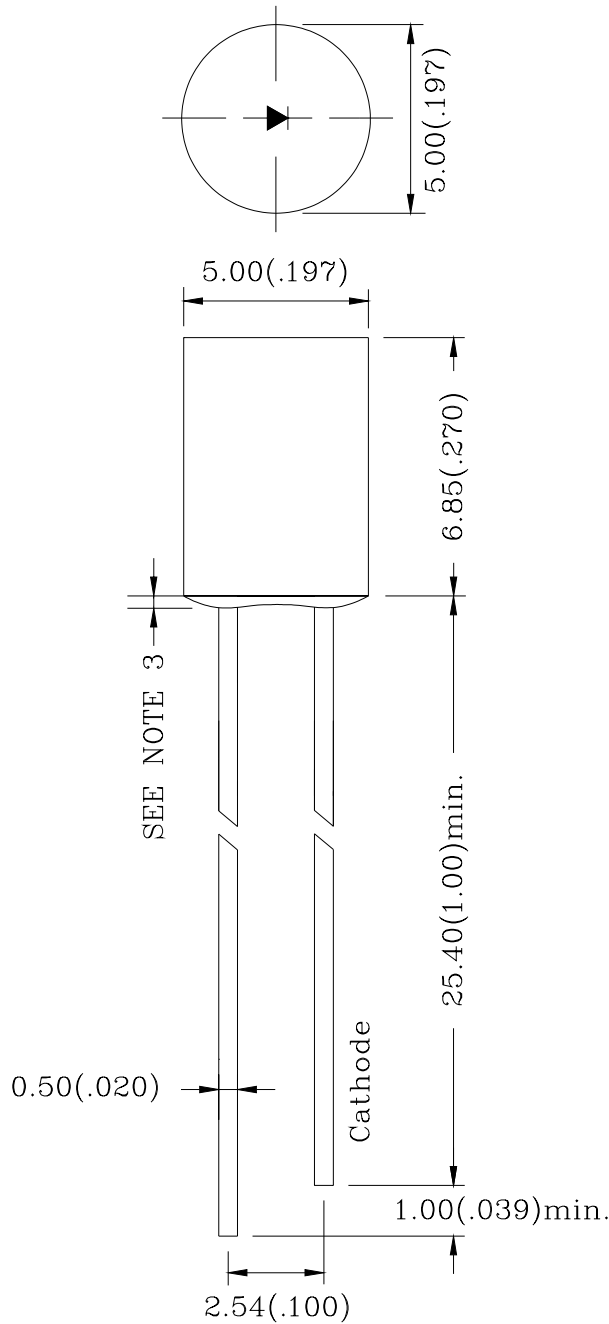


5.0 mm DIA CYLINDRICAL LED LAMP

L-5C3GD

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PACKAGE DIMENSIONS



ITEM	MATERIALS
RESIN	Epoxy Resin
LEAD FRAME	Sn Plating iron Alloy

Note:

1. All Dimensions are in millimeters.
2. Tolerance is  $\pm 0.25\text{mm}$  (0.010 ") Unless otherwise specified.
3. Protruded resin under flange is 1.5mm (0.059 ") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specification are subject to change without notice
6. The lamps have sharp and hard points that may injure human eyes or fingers etc., so please pay enough care in the handling.



**5.0 mm DIA CYLINDRICAL LED LAMP**

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**FEATURES**

- \* 5.0 mm DIA L LED LAMP
- \* HIGH LUMINOUS INTENSITY OUTPUT.
- \* LOW POWER CONSUMPTION.
- \* HIGH EFFICIENCY.
- \* VERSATILE MOUNTING ON P.C. BOARD OR PANEL.
- \* I.C. COMPATIBLE.
- \* Pb FREE PRODUCTS

**CHIP MATERIALS**

- \* Dice Material : GaP/GaP
- \* Light Color : YELLOW GREEN
- \* Lens Color : GREEN DIFFUSED

**ABSOLUTE MAXIMUM RATING : ( Ta = 25°C )**

SYMBOL	PARAMETER	ULTRA GREEN	UNIT
PAD	Power Dissipation Per Chip	85	mW
VR	Reverse Voltage Per Chip	5	V
IAF	Continuous Forward Current Per Chip	30	mA
IPF	Peak Forward Current Per Chip (Duty – 0.1,1KHz)	120	mA
–	Derating Linear From 25°C Per Chip	0.40	mA/°C
Topr	Operating Temperature Range	-25°C to 85°C	
Tstg	Storage Temperature Range	-25°C to 85°C	

**ELECTRO-OPTICAL CHARACTERISTICS : ( Ta = 25°C )**

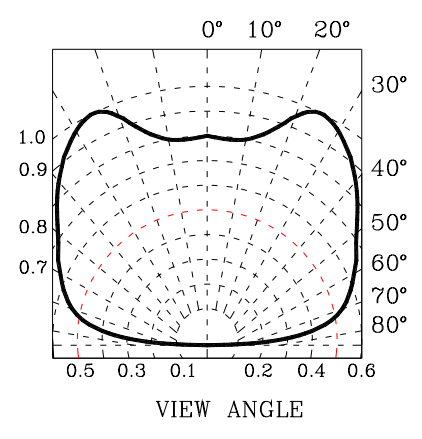
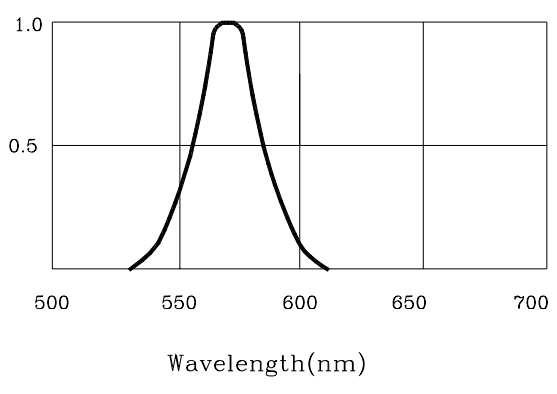
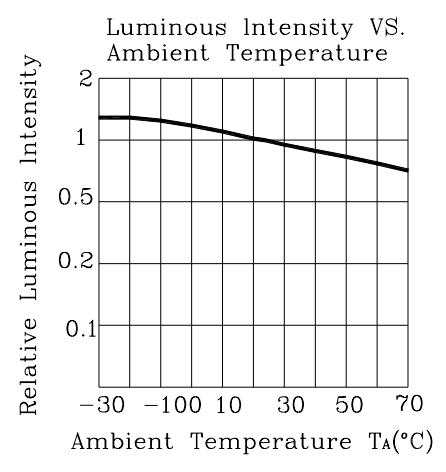
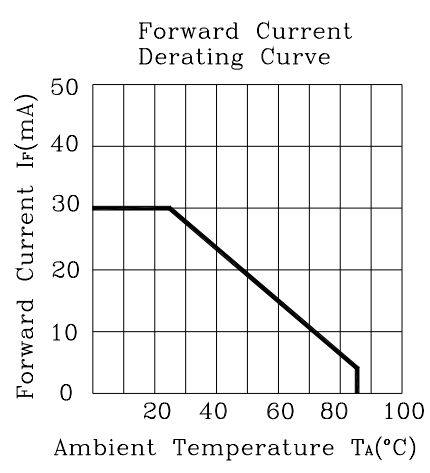
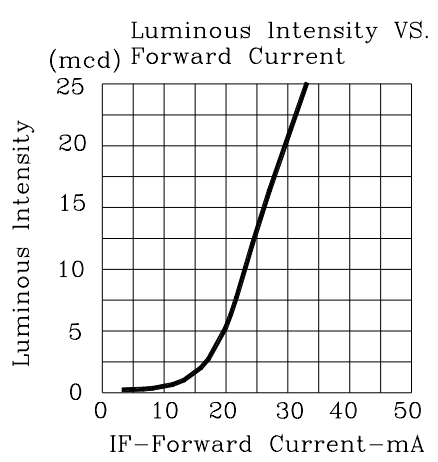
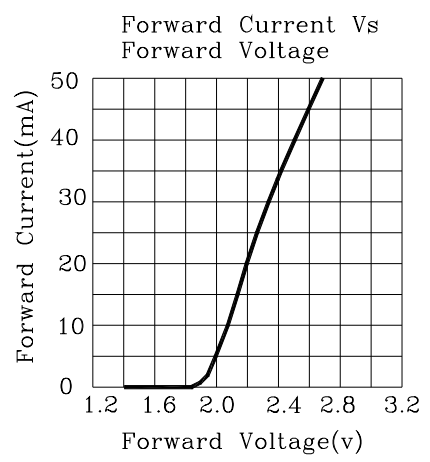
SYMBOL	PARAMETER	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
VF	Forward Voltage	IF = 20mA		2.2	2.8	V
IR	Reverse Current	VR = 5V			100	μA
λD	Dominant Wavelength	IF = 20mA		570		nm
Δλ	Spectral Line Half-Width	IF = 20mA		30		nm
2θ1/2	Half Intensity Angle	IF = 20mA		150		deg
IV	Luminous Intensity	IF = 20mA		5		mcd



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Label Explanation

		光鼎电子股份有限公司 PARALIGHT ELECTRONICS CO.,LTD.	
PART NO. :			
LOT NO. :		INSPECTED	
BIN :			
Q' TY :	PCS		
N. W :	g		

PARA NO. : Refer to p11

LOT NO. : **E L L 4 7 0009**

A B C D E F

- A---E: For series number
- B---L: Local F: Foreign
- C---L: LAMP
- D---Year
- E---Month
- F---SPEC.

BIN :

Luminous Intensity(IV), Unit:mcd@20mA		
Bin Code	Min	Max
C	2.0	2.8
D	2.8	3.9
E	3.9	5.5
F	5.5	7.7
G	7.7	10.8

Including test tolerance

Q'TY : Below are standard specification, actual packing quantity reference page 11

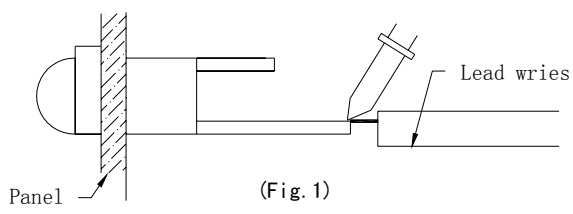
N'W : Net Weight

<b>PARALIGHT</b>	5.0 mm DIA CYLINDRICAL LED LAMP
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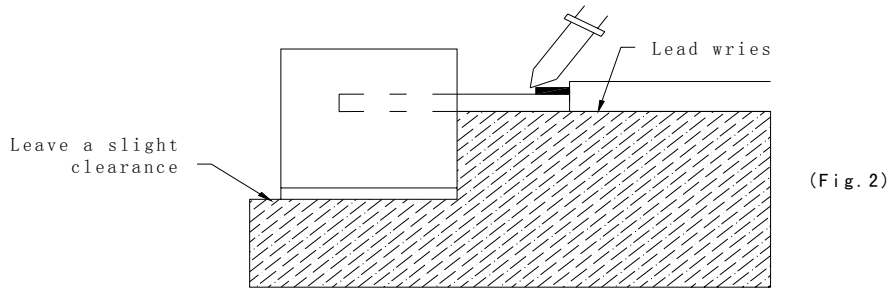
**•SOLDERING**

METHOD	SOLDERING CONDITIONS	REMARK
DIP SOLDERING	Bath temperature: 260±5°C Immersion time: with 5 sec	<ul style="list-style-type: none"> <li>Solder no closer than 3mm from the base of the package</li> <li>Using soldering flux, "RESIN FLUX" is recommended.</li> </ul>
SOLDERING IRON	Soldering iron: 30W or smaller Temperature at tip of iron: 260°C or lower Soldering time: within 5 sec.	<ul style="list-style-type: none"> <li>During soldering, take care not to press the tip of iron against the lead.</li> </ul> (To prevent heat from being transferred directly to the lead, hold the lead with a pair of tweezers while soldering)

1) When soldering the lead of LED in a condition that the package is fixed with a panel (See Fig.1), be careful not to stress the leads with iron tip.



2) When soldering wire to the lead, work with a Fig (See Fig.2) to avoid stressing the package.



Regarding solution in the tinning oven for product-tinning, compound sub-solution made of tin & copper and silver is proposed with the temperature of Celsius 260. The proportion of the alloyed solution is tin 95.5: copper 3.5: silver 0.5 by percentage. The time of tinning is constantly 3 seconds.

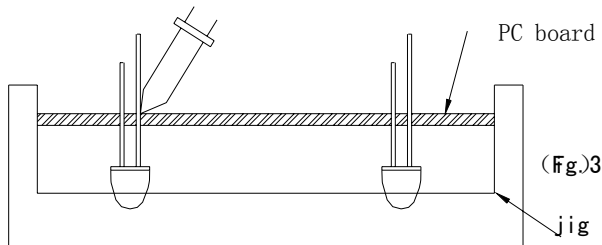


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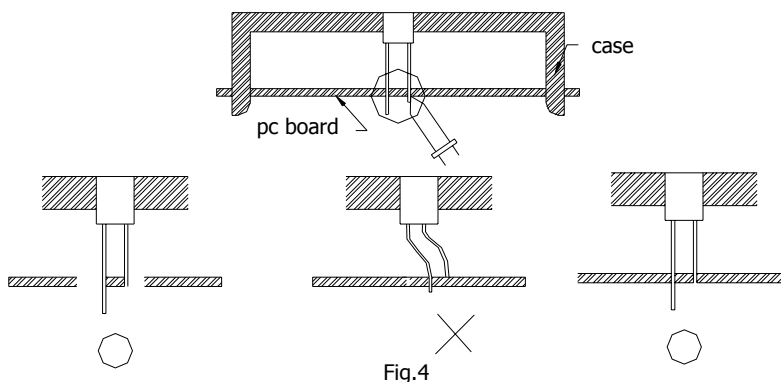
3) Similarly, when a jig is used to solder the LED to PC board, take care as much as possible to avoid steering the leads (See Fig.3).



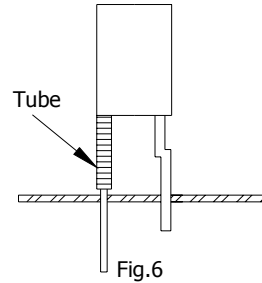
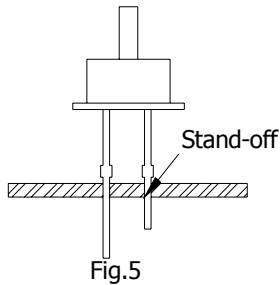
- 4) Repositioning after soldering should be avoided as much as possible. If inevitable, be sure to preserve the soldering conditions with irons stated above: select a best-suited method that assures the least stress to the LED.
- 5) Lead cutting after soldering should be performed only after the LED temperature has returned to normal temperature.

**•LED MOUNTING METHOD**

1) When mounting the LED by using a case, as shown Fig.4, ensure that the mounting holds on the PC board match the pitch of the leads correctly-tolerance of dimensions of the respective components including the LED should be taken into account especially when designing the case, PC board, etc. to prevent pitch misalignment between the leads and board holes, the diameter of the board holes should be slightly larger than the size of the lead. Alternatively, the shape of the holes should be made oval. (See Fig.4)

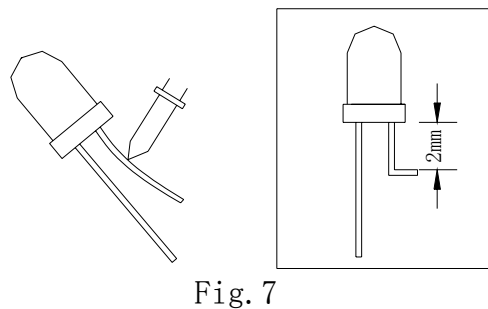


2) Use LEDs with stand-off (Fig.5) or the tube or spacer made of resin (Fig.6) to position the LEDs.

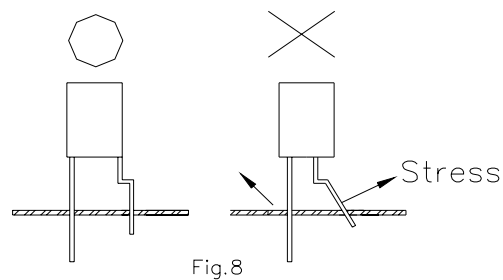



● **FORMED LEAD**

1) The lead should be bent at a point located at least 2mm away from the package. Bending should be performed with base fixed means of a jig or pliers (Fig.7)



2) Forming lead should be carried out prior to soldering and never during or after soldering.  
3) Form the lead to ensure alignment between the leads and the hole on board, so that stress against the LED is prevented. (Fig.8)



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**•LEAD STRENGTH**

1) Bend strength

Do not bend the lead more than twice. (Fig.9)

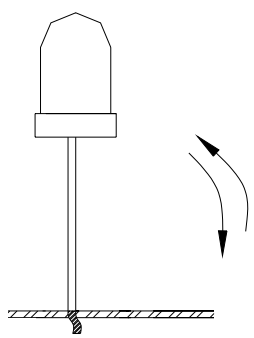


Fig.9

2) Tensile strength (@Room Temperature)

If the force is 1kg or less, there will be no problem. (Fig.10)

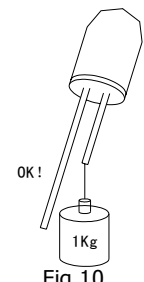


Fig.10

**•HANDLING PRECAUTIONS**

Although rigid against vibration, the LEDs may damaged or scratched if dropped. So take care when handling.

**•CHEMICAL RESISTANCE**

- 1) Avoid exposure to chemicals as it may attack the LED surface and cause discoloration.
- 2) When washing is required, refer to the following table for the proper chemical to be sued. (Immersion time: within 3 minutes at room temperature.)

SOLVENT	ADAPTABILITY
Freon TE	⊙
Chlorothene	✕
Isopropyl Alcohol	⊙
Thinner	✕
Acetone	✕
Trichloroethylene	✕

⊙--Usable    ✕--Do not use.

NOTE: Influences of ultrasonic cleaning of the LED resin body differ depending on such factors as the oscillator output, size of the PC board and the way in which the LED is mounted. Therefore, ultrasonic cleaning should only be performed after confirming there is no problem by conducting a test under practical.



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**•OTHERS**

- 1) Care must be taken to ensure that the reverse voltage will not exceed the absolute maximum rating when using the LEDs with matrix drive.
- 2) Flashing lights have been known to cause discomfort in people; you can prevent this by taking precautions during use. Also, people should be cautious when using equipment that has had LEDs incorporated into it.
- 3) The LEDs described in this brochure are intended to be used for ordinary electronic equipment (such as office equipment, communications equipment, measurement instruments and household appliances). Consult PARA's sales staff in advance for information on the applications in which exceptional quality and reliability are required , particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as for airplanes, aerospace, submersible repeaters, nuclear reactor control systems, automobiles, traffic control equipment, life support systems and safety devices).
- 4) User shall not reverse engineer by disassembling or analysis of the LEDs without having prior written consent from PARA. When defective LEDs are found, the User shall inform PARA directly before disassembling or analysis.
- 5) The formal specifications must be exchanged and signed by both parties before large volume purchase begins.
- 6) The appearance and specifications of the product may be modified for improvement without notice.



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**LED Lamps:**



Special Operation & Other

- Len Color
- D : Color Diffused
  - T : Color Transparent
  - C : Water Clear
  - W : White Diffused

- G : Gap Green
- E : GaAs/Gap Orange & Hi-effi-Red
- H : Gap Red
- SR,LR,UR : GaAlAs Red
- Y : GaAsP/Gap Yellow
- VG3 : GaAlInP Green
- HUR : GaAlInP Red
- LE,VE : GaAlInP Orange
- LY,UY,VY : GaAlInP Yellow
- SPG4,LPG4 : GaInN Green
- UB5,VB5 : GaInN Blue
- UW5,VW5 : GaInN White

- 1 : 0.8"Length with Stand-off
- 2 : 0.5" Length Standard
- 3 : 1"Length with Large Reflector
- 4 : 1"Length with Small Reflector
- 5 : 1"WITH 3 Leads for Dual Color
- 7 : 1"WITH 2 Leads for Dual Color
- 9 : 1"WITH 3 Leads for Dual Color

Package Type (Style)