LCD18A Datasheet

LED GREEN

FEATURES:

- Reliable and robust
- Choice of various viewing angles
- Compliance with EU REACH.
- Available on tape and reel.
- Pb free
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).
- The product itself will remain within RoHS compliant version.

Description:

- The series is specially designed for applications requiring higher brightness
- The led lamps are available with different colors, intensities..

Applications

- Energy/Electrical Electronic Meters
- Electronics gadgets devices with readouts
- Telephone & Media devices
- Computer
- TV set
- Monitor

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
GaP	Green	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10@1KHz)	IF(peak)	102	mA
Reverse Voltage	V_R	7	V
Power Dissipation	P_d	105	mW
Operating Temperature	T_{opr}	-42 ~ +89	°C
Storage Temperature	Tstg	-44 ~ +105	°C
Soldering Temperature	T_{sol}	260 °C for 5 sec.	

Electro-Optical Characteristics (Ta=25°C)

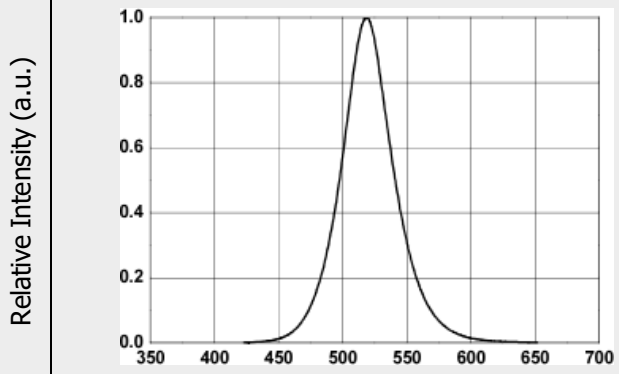
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	2510	3515	-----	mcd	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	-----	58	-----	deg	I_F=20mA
Peak Wavelength	λ_p	-----	520	-----	nm	I_F=20mA
Dominant Wavelength	λ_d	515	525	530	nm	I_F=20mA
Spectrum Radiation Bandwidth	$\Delta\lambda$	-----	35	-----	nm	I_F=20mA
Forward Voltage	V_F	2.3	3.0	3.6	V	I_F=20mA
Reverse Current	I_R	-----	-----	12	μA	V_R=5V

Note:

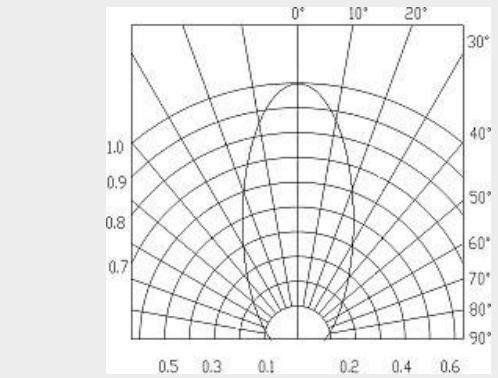
- Measurement Uncertainty of Forward Voltage: ±0.1V
- Measurement Uncertainty of Luminous Intensity: ±10%
- Measurement Uncertainty of Dominant Wavelength ±1.0nm

Typical Electro-Optical Characteristics Curves

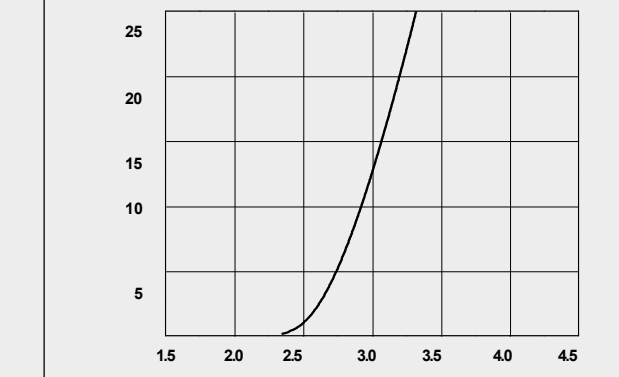
Relative Intensity vs. Wavelength (Ta=25°C)



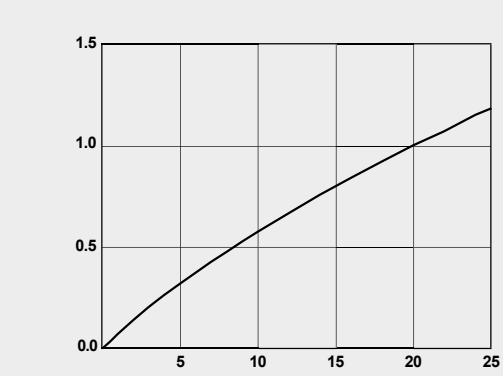
Directivity (Ta=25°C)



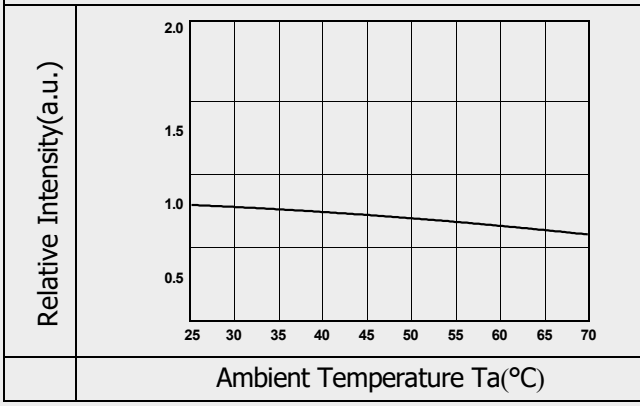
Forward Current vs. Forward Voltage (Ta=25℃)



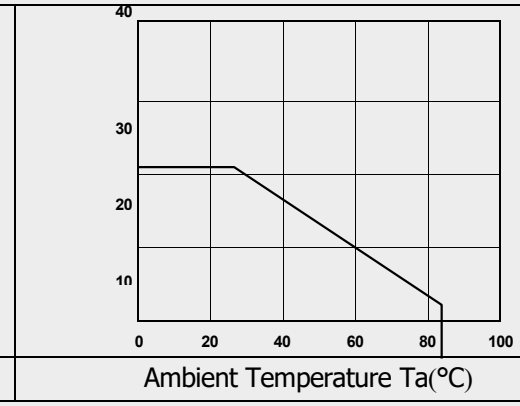
Relative Intensity vs. Forward Current (Ta=25℃)



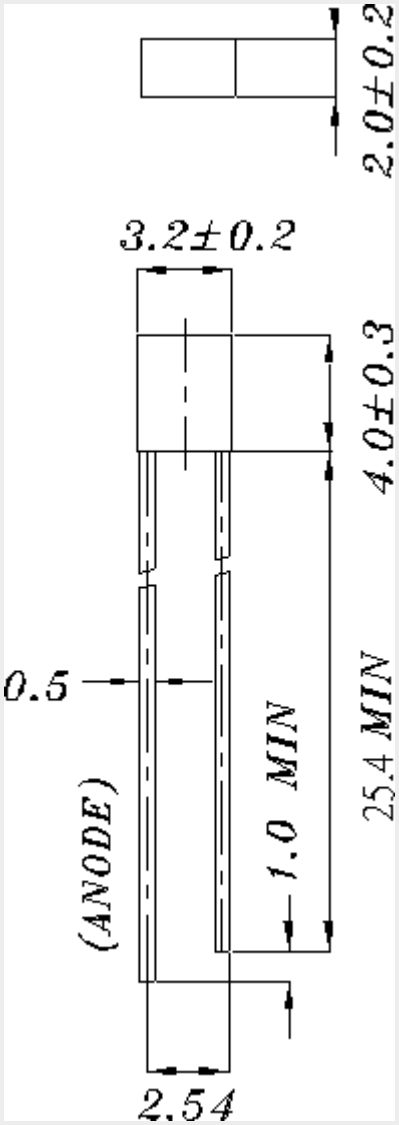
Relative Intensity vs. Ambient Temp.

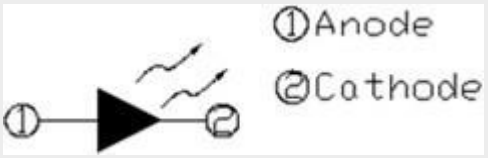


Forward Current vs. Ambient Temp.



Package Dimension





Note: Note:

All dimensions are in millimeters

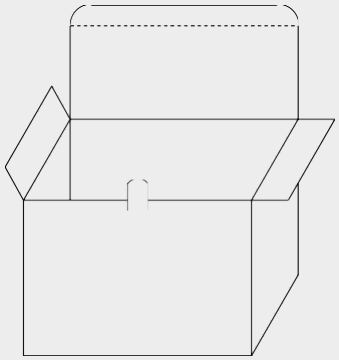
The height of flange must be less than 1.5mm (0.059").

Without special declared, the tolerance is ±0.25mm.

Moisture Resistant Packing Materials

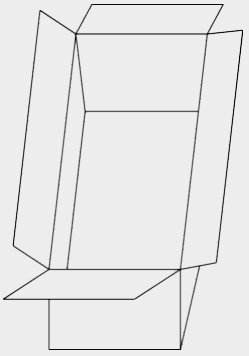
Packing Specification

■ Inner Carton



■ Anti-electrostatic bag

■ Outside Carton



■ Packing Quantity

1. MIN 250 To 1000 PCS/1 Bag, 4 Bags/1 Inner Carton
2. 15 Inner Cartons/1 Outside Carton

Notes

1. Lead Forming

   During lead formation, the leads should be bent at a point at least 3mm from the base of the epoxy bulb.
   Lead forming should be done before soldering.
   Avoid stressing the LED package during leads forming. The stress to the base may damage the LED's characteristics or it may break the LEDs.

   Cut the LED lead frames at room temperature. Cutting the lead frames at high temperatures may cause failure of the LEDs.
   When mounting the LEDs onto a PCB, the PCB holes must be aligned exactly with the lead position of the LED. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin, and this will degrade the LEDs.

2. Storage

   The LEDs should be stored at 30°C or less and 70%RH or less after being shipped from and the storage life limits are 3 months. If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with a nitrogen atmosphere and moisture absorbent material.

   Please avoid rapid transitions in ambient temperatures, especially, in high humidity environments where condensation can occur.

3. Soldering

Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

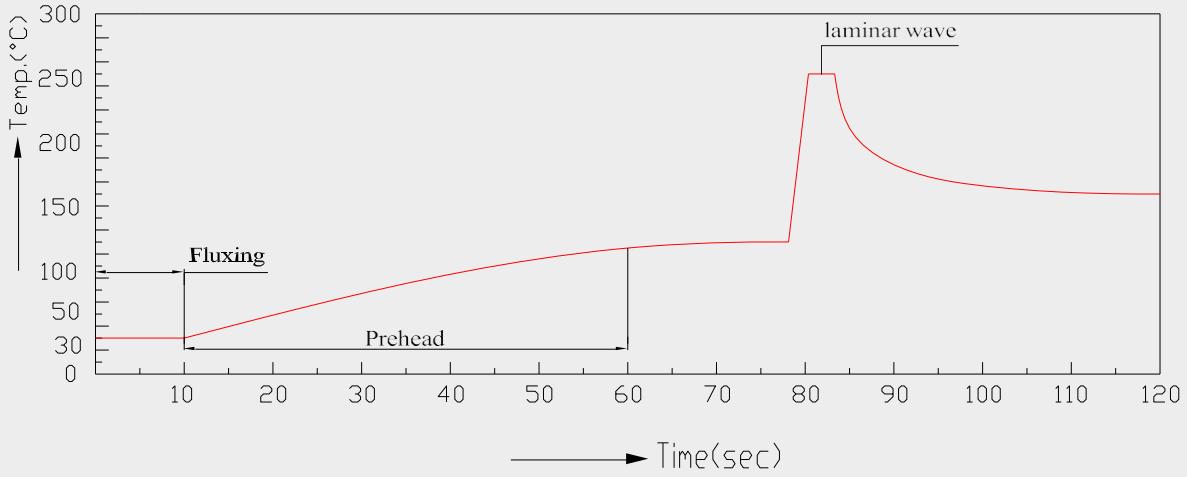
LED flat against the PCB, PCB thickness of 1.6 + /-0.19mm. (REMARKs: Lead Frame cannot do the bend)

If unused after opening within 24hrs, please do the pieces before baking, baking conditions 100 ℃ / 24hrs

Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	100℃ Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	250 Max., 5 sec Max
Distance	3mm Min. (From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

Recommended soldering profile



Avoid applying any stress to the lead frame while the LEDs are at high temperature particularly when soldering.

Dip and hand soldering should not be done more than one time

After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.

A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LEDs.

The wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

4. Cleaning

When necessary, cleaning should occur only with isopropyl alcohol at room temperature for a duration of no more than one minute. Dry at room temperature before use.

Do not clean the LEDs by the ultrasonic. When it is necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the LED

5. Heat Management

Heat management of LEDs must be taken into consideration during the design stage of LED application. The current should be de-rated appropriately by referring to the de-rating curve found in each product specification.

The temperature surrounding the LED in the application should be controlled. Please refer to the data sheet de-rating curve.

6. ESD (Electrostatic Discharge)

The products are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measures against electrostatic discharge are strongly recommended:

Eliminating the charge

Grounded wrist strap, ESD footwear, clothes, and floors
Grounded workstation equipment and tools

ESD table/shelf mat made of conductive materials

Proper grounding is required for all devices, equipment, and machinery used in product assembly. Surge protection should be considered when designing commercial products.

If tools or equipment contain insulation materials such as glass or plastic,

the following measures against electrostatic discharge are strongly recommended:

Dissipating static charge with conductive materials

Preventing charge generation with moisture
Neutralizing the charge with ionizers

7. Directions for use

The LEDs should be operated with forward bias. The driving circuit must be designed so that the LEDs are not subjected to forward or reverse voltage while they are off. If reverse voltage is continuously applied to the LEDs, it may cause migration resulting in LED damage.

DISCLAIMER

1. reserves the right(s) for the adjustment of product material mix for the specification.
2. The product meets published specifications for a period of one year from date of shipment.
3. The graphs shown in this datasheet represent typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
5.