



PARA LIGHT ELECTRONICS CO., LTD.

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DATA SHEET

PART NO. : LC151LBCT-XG-U1

REV : A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

DRAWING NO. : DS-51-23-093

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Page : 1

FEATURES

Dimension (L / W / H): 3.2 x 1.6 x 1.15 mm

Color/ Dice Material: blue light/ InGaN

Colloid: Transparent concave colloid

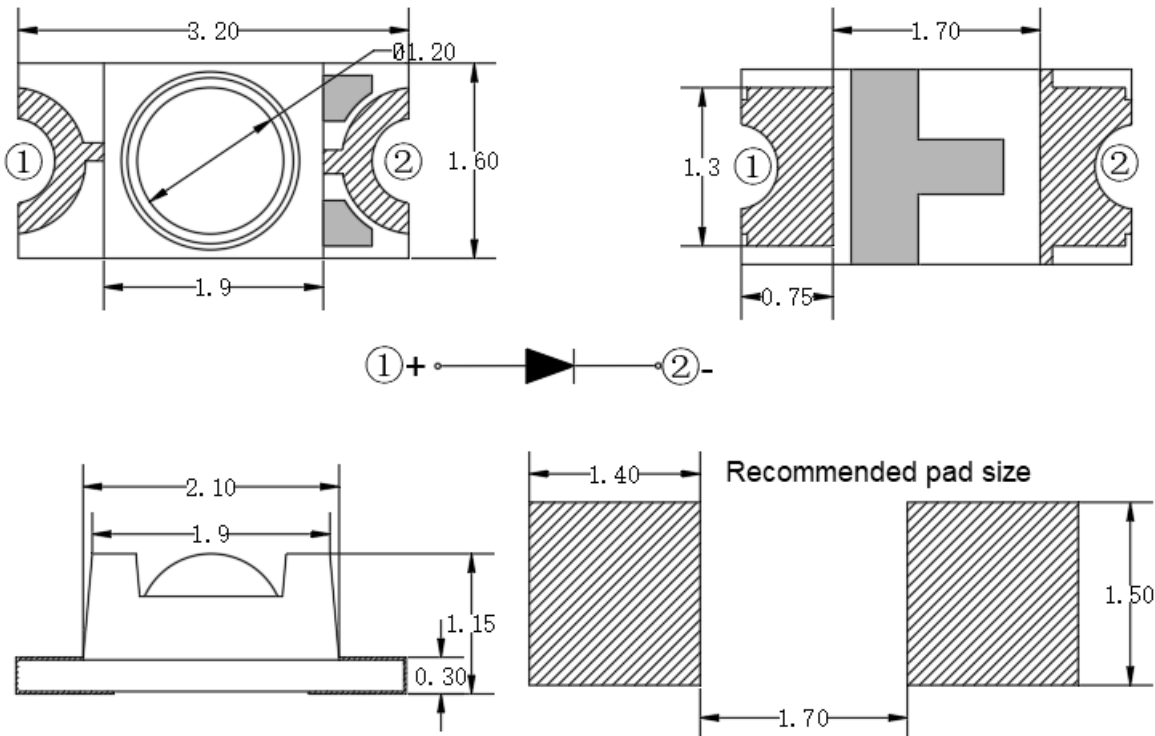
EIA standard packaging

Environmental protection products meet ROHS requirements

Suitable for automatic placement machine

Suitable for infrared reflow soldering process

PACKAGE DIMENSIONS



NOTES :

1. All dimensions are in millimeters
2. Tolerances are ± 0.10 mm unless otherwise noted
3. The Specifications in the datasheet are subject to change without notice.

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

Parameter	Symbol	Maximum rating	Unit	Remarks
Power	Pd	80	mW	
Maximum pulse current	IFP	100	mA	1 / 10 duty cycle, 0.1ms pulse width
Forward DC working current	IF	25	mA	
Reverse voltage	VR	5	V	
Electrostatic discharge	ESD	2000	V	HBM
Working environment temperature	Topr	-40°C ~ + 85°C		
Storage environment temperature	Tstg	-40°C ~ + 85°C		
Welding conditions	Tsol	Reflow soldering : 260°C for 10s Manual welding : 350°C for 3s		

Note: Pulse width ≤0.1ms,Duty≤1/10

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

SYMBOL	PARAMETER	TEST CONDITION	VALUE			UNIT
			MIN.	TYP.	MAX.	
IV	Luminous Intensity	IF = 20mA	40	---	280	mcd
λD	Dominant Wavelength	IF = 20mA	462	---	471	nm
VF	Forward Voltage	IF = 20mA	2.8	---	3.4	V
2θ1/2	Half Intensity Angle	IF =20mA	---	60	---	deg
IR	Reverse Current	VR = 5V	---	---	5	μA

Bin Code List

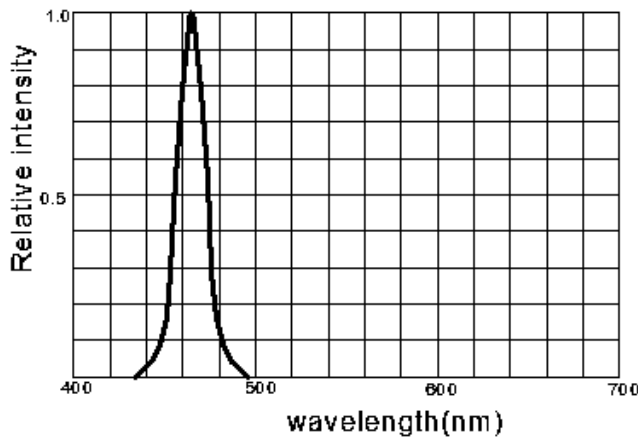
Symbol	Code	Min.	Max.	Unit	Test Condition
IV	F	40	55	mcd	IF =20mA
	G	55	75		
	H	75	100		
	I	100	130		
	J	130	170		
	K	170	220		
	L	220	280		
VF	2E	2.8	3.0	V	IF =20mA
	3A	3.0	3.2		
	3B	3.2	3.4		
λ_d	B5	462	465	nm	IF =20mA
	B6	465	468		
	B7	468	471		

Tolerance range:

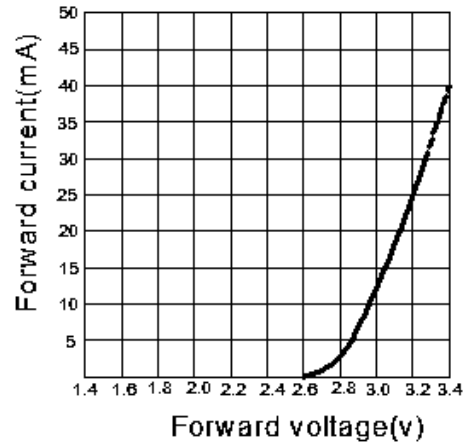
1. Tolerance of measurement of luminous intensity is $\pm 15\%$.
2. Tolerance of measurement of dominant wavelength is $\pm 2\text{nm}$.
3. Tolerance of measurement of Vf is $\pm 0.1\text{ V}$.

Typical Electro-Optical Characteristics Curves

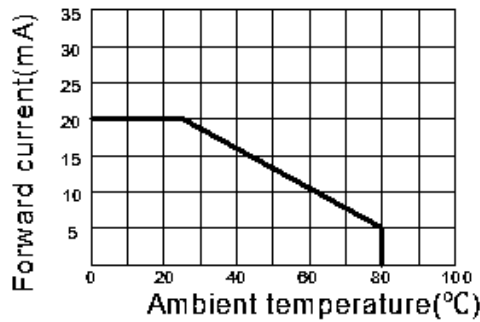
Relative intensity VS wavelength



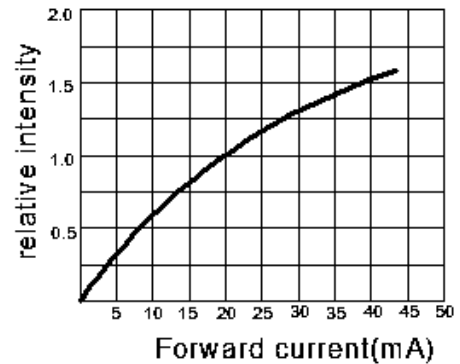
Voltage current relationship



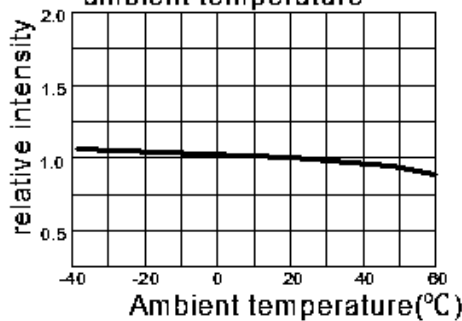
Current and ambient temperature



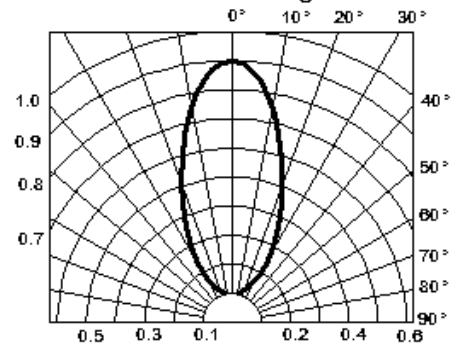
Relative light intensity vs current



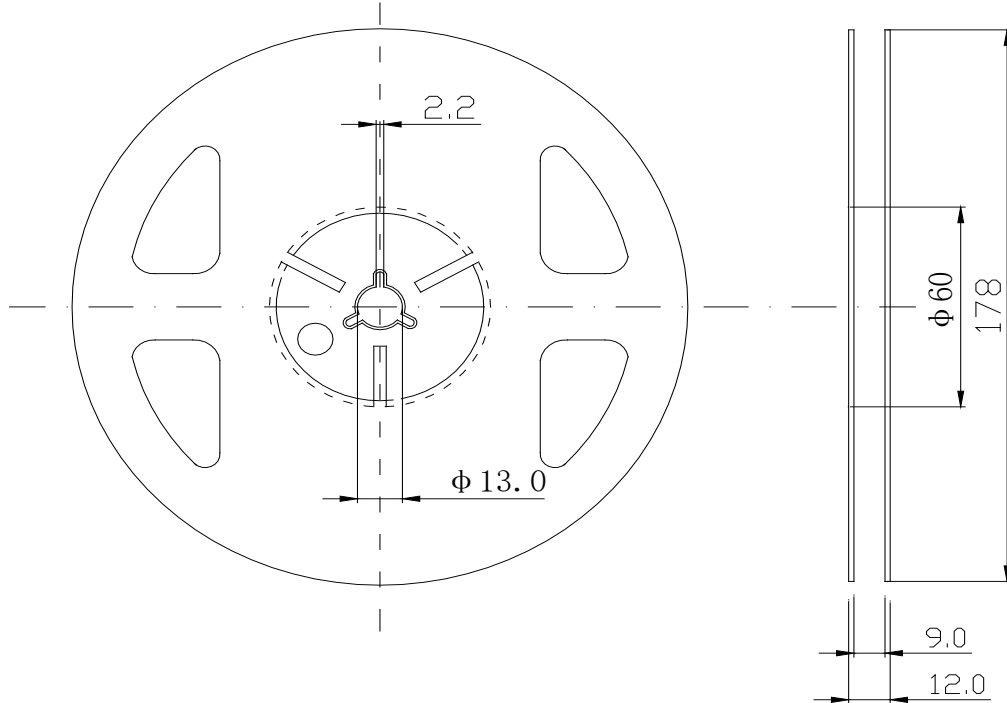
Relative light intensity vs ambient temperature



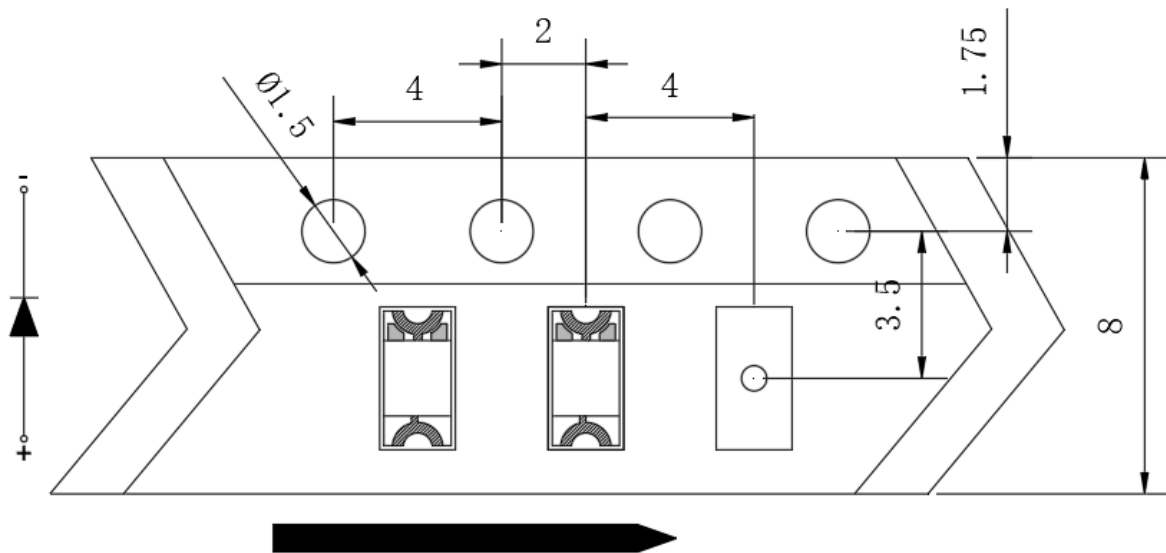
Radiation angle



Reel Dimensions



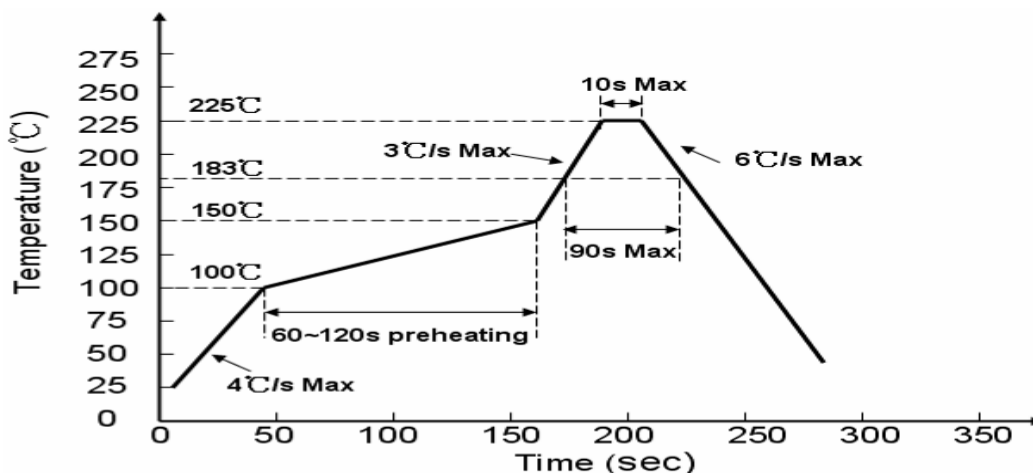
Package Dimensions Of Tape And Reel



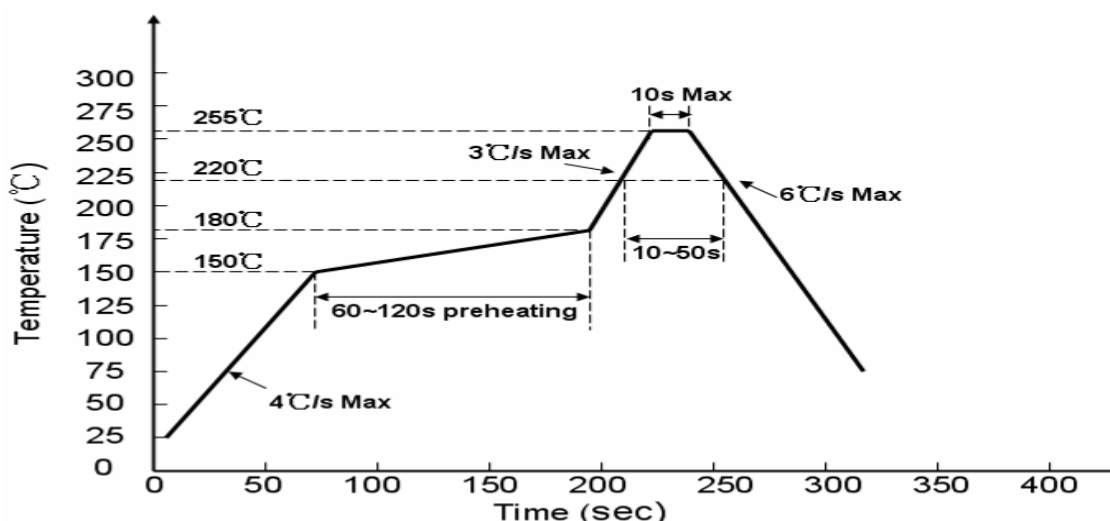
Notes:

1. Taping Quantity : 3000pcs
2. The tolerances unless mentioned is $\pm 0.15\text{mm}$

Suggest Sn/Pb IR Reflow Soldering Profile Condition:



Suggest Pb-Free IR Reflow Soldering Profile Condition:



Failure Criteria

Test Items	Symbol	Test condition	Failure Criteria
Forward Voltage	VF	IF=20mA	< (U.S.L*)x1.1
Reverse Current	IR	VR=5V	<10μA
Luminous Intensity	Iv	IF=20mA	> (L.S.L*)x0.7

Notes: 1.U.S.L means the upper limit of specified characteristics.

2.L.S.L means the Lower limit of specified characteristics



SURFACE MOUNT DEVICE LED

LC151LBCT-XG-U1

REV:A / 0

CAUTIONS

use

1. Too high temperature will affect the brightness and other performance of LED, so in order to make the LED have better performance, we should keep the led away from heat source
2. Tolerance of photoelectric parameters:

Forward voltage	Brightness	Wavelength
(REF / VF): $\pm 0.1V$	(CAT / IV) : $\pm 15\%$	(HUE / XY): $\pm 2nm$

Storage

1. The recommended storage environment is: temperature 5 ~ 30 ° C, humidity below 60%RH
2. LED is a humidity sensitive element. In order to avoid moisture absorption, it is recommended to store the LED in a sealed container with desiccant or in a nitrogen moisture-proof cabinet after opening the package
3. After unpacking, the components should be used within 168 hours (7 days); and the welding should be completed as soon as possible after placement
4. If the desiccant fails or the element is exposed to air for more than 168 hours (7 days), dehumidification should be performed, Baking conditions: 60 ° C / 24 hours

ESD (Electrostatic Discharge)-Protection

A LED (especially the blue, turquoise, purple, white and pink LEDs with InGaN structure chip) is an ESD sensitive component, and static electricity or power surge will damage the LED. ESD-damaged LEDs will exhibit abnormal characteristics such as high reverse leakage current, low forward voltage, or "no light-up" at low currents, etc.

Some advice as below should be noticed:

1. A conductive wrist strap or anti-electrostatic glove should be worn when handling these LEDs.
2. All devices, equipment, machinery, work tables and storage racks, etc. must be properly grounded(grounding impedance values within 10Ω).
3. Use anti-static package or boxes to carry and storage LEDs. And ordinary plastic package or boxes is forbidden to use.
4. Use ionizer to neutralize the static charge during handling or operating.

Cleaning

Use alcohol-based cleaning solvents such as IPA (isopropyl alcohol) to clean LEDs if necessary.

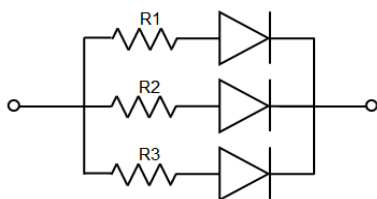
Welding

1. Refer to the temperature curve on page 1 for reflow welding conditions;
2. The number of reflow soldering shall not exceed two times;
3. It is only recommended to use manual welding in the case of repair and heavy work. The maximum welding temperature should not exceed 300 °C and should be completed within 3 seconds.
4. The maximum power of soldering iron shall not exceed 30W;
5. During welding, it is forbidden to touch colloid at high temperature; after welding, it is forbidden to apply external force on colloid and bend PCB to avoid damage to components to hit.

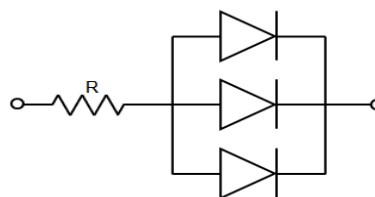
Other

1. The definition of LED described in this specification shall be used in the scope of common electronic equipment (such as office equipment, communication equipment, etc.). If there is more severe Especially when the component failure or failure may directly endanger life and health (such as aerospace, transportation, transportation, medical treatment) Equipment, safety protection, etc.), please inform our business personnel in advance;
2. When high brightness LED products are on, it may cause damage to human eyes, so it is necessary to avoid looking directly at them from above;
3. For the purpose of continuous improvement, product appearance and parameter specifications may be changed without prior notice.

Drive Method



Circuit model A



Circuit model B

(A) Recommended circuit.

(B) The difference of brightness between LED`s could be found due to the Vf-I_f characteristics of LED.