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DATA SHEET

PART NO. : LC15D4EIR1CT-RP-XG

REV : A / 0

CUSTOMER'S APPROVAL : _____

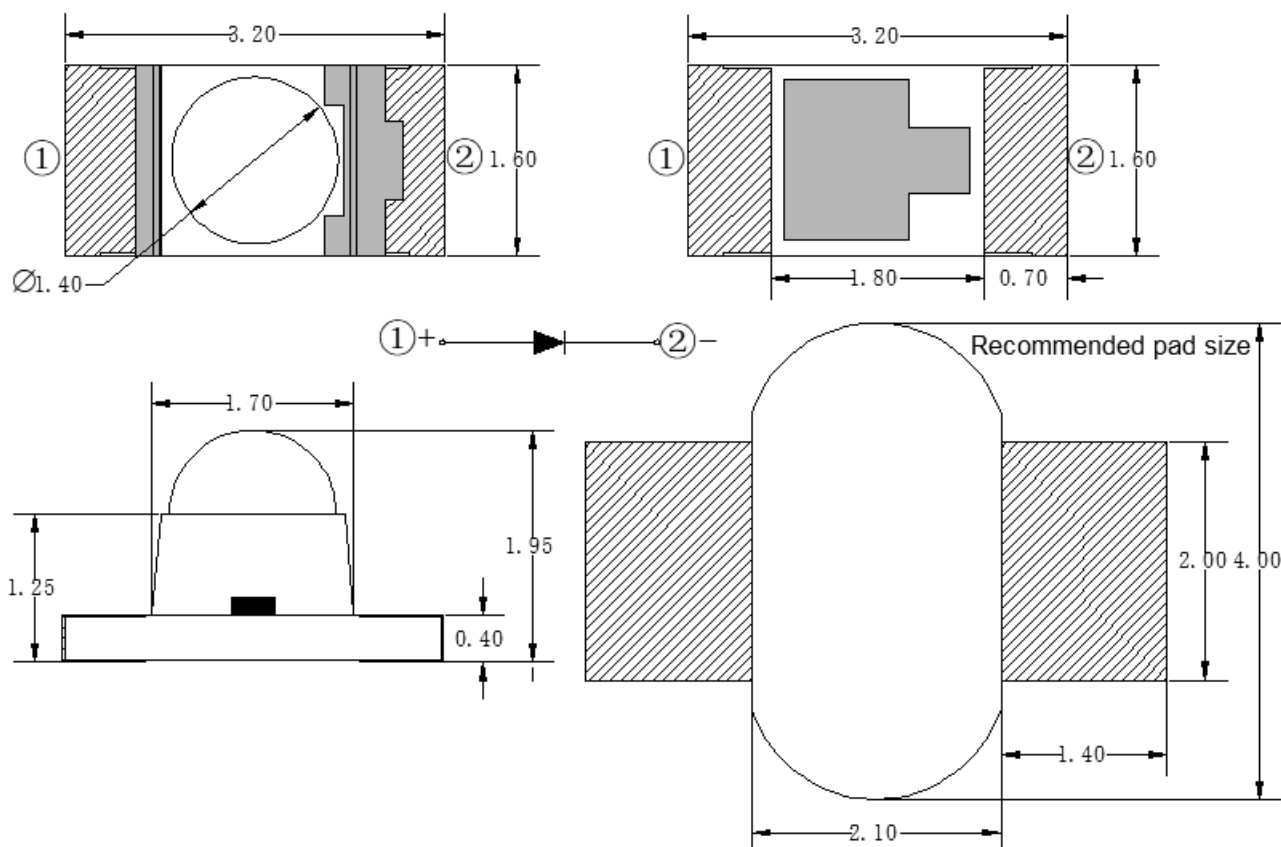
DCC : _____

DRAWING NO. :DS-51-24-052

DATE : 2024-07-16

Page : 1

PACKAGE DIMENSIONS



NOTES :

- 1.All dimensions are in millimeters
- 2.Tolerances are ± 0.1 mm unless otherwise noted
- 3.The Specifications in the datasheet are subject to change without notice.



3.2 x 1.6 x1.95mm SMD LED

LC15D4EIR1CT-RP-XG

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FEATURES

Dimension (L / W / H): 3.2 x 1.6 x 1.95mm

Color/Material: IR940/GaAlAs

Colloid: Transparent spherical colloid

EIA standard packaging

Environmental protection products meet ROHS requirements

Suitable for automatic placement machine

Suitable for infrared reflow soldering process

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

Symbol	Parameter	Rating	Unit
PD	Power consumption	160	mW
IF	Forward Current	100	mA
IFP	Maximum pulse current (1/10 duty cycle 0.1ms)	500	mA
VR	Reverse Voltage	5	V
Topr	Operating Temperature Range	-40°C ~ + 85°C	°C
Tstg	Storage Temperature Range	-40°C ~ + 85°C	°C
Tsol	Reflow soldering : 260°C ,10s, Hand soldering : 350°C ,3s		

Note: Pulse width $\leq 0.1\text{ms}$, Duty $\leq 1/10$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Radiation intensity	Ie	36.8	-	115	mw/sr	IF=100mA
Viewing Angle	2 θ 1/2	-	20	-	deg	IF=100mA
Peak Wavelength	λ_p	920	940	960	nm	IF=100mA
Forward Voltage	VF	1.2	-	1.5	V	IF=100mA
Reverse Current	IR	-	-	5	μA	VR=5V



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● Bin Code List

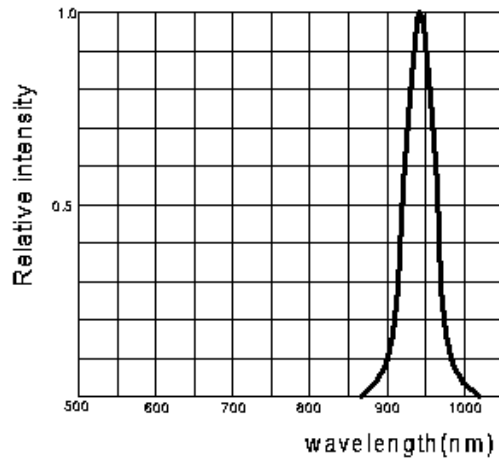
Parameter	Symbol		Min.	Max.	Unit	Test Condition
Radiation intensity	I _e	40A	36.8	43.5	mW/sr	IF =100mA
		48A	43.5	51.3		
		55A	51.3	60		
		65A	60	71		
		76A	71	83		
		90A	83	98		
		98A	98	115		
Forward Voltage	V _F	1B	1.2	1.4	V	IF =100mA
		1C	1.4	1.6		
		1D	1.6	1.8		
Peak Wavelength	λ _p	---	920	960	nm	IF =100mA

Label marking error:

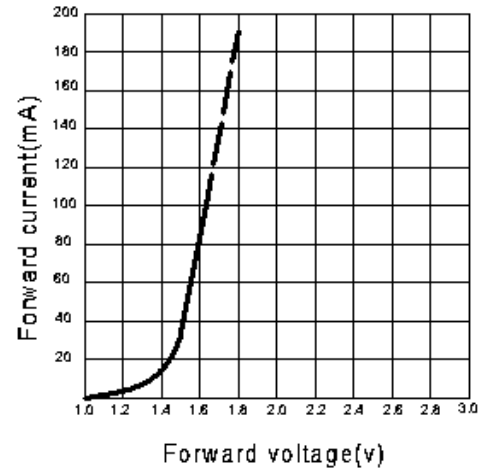
1. Tolerance of measurement of Radiation intensity is $\pm 15\%$.
2. Tolerance of measurement of Peak Wavelength is $\pm 2\text{nm}$.
3. Tolerance of measurement of V_f is $\pm 0.1\text{ V}$.

Typical Electro-Optical Characteristics Curve

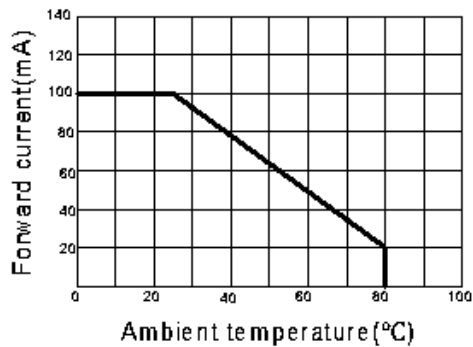
Relative intensity VS wavelength



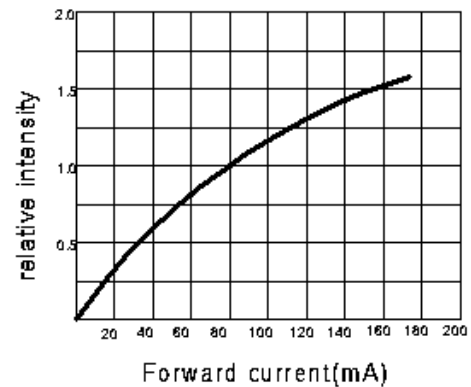
Voltage current relationship



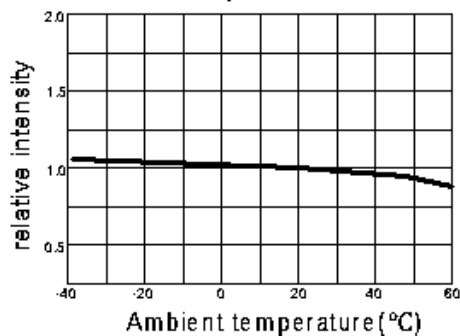
Current and ambient temperature



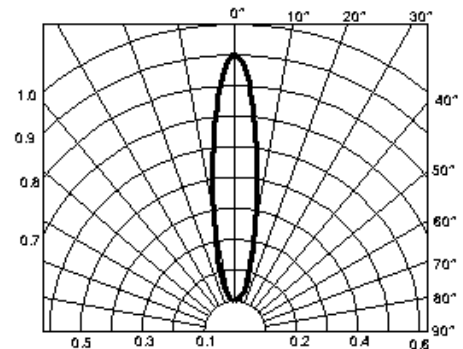
Relative light intensity vs current



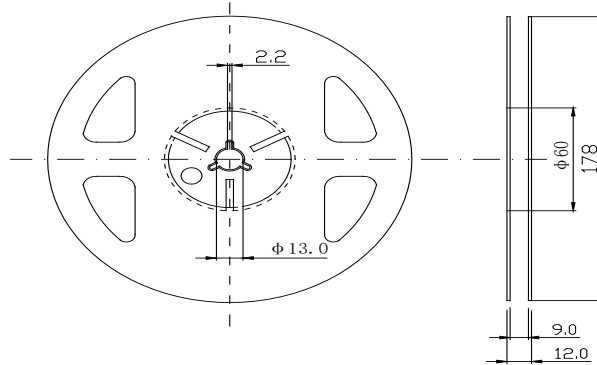
Relative light intensity vs ambient temperature



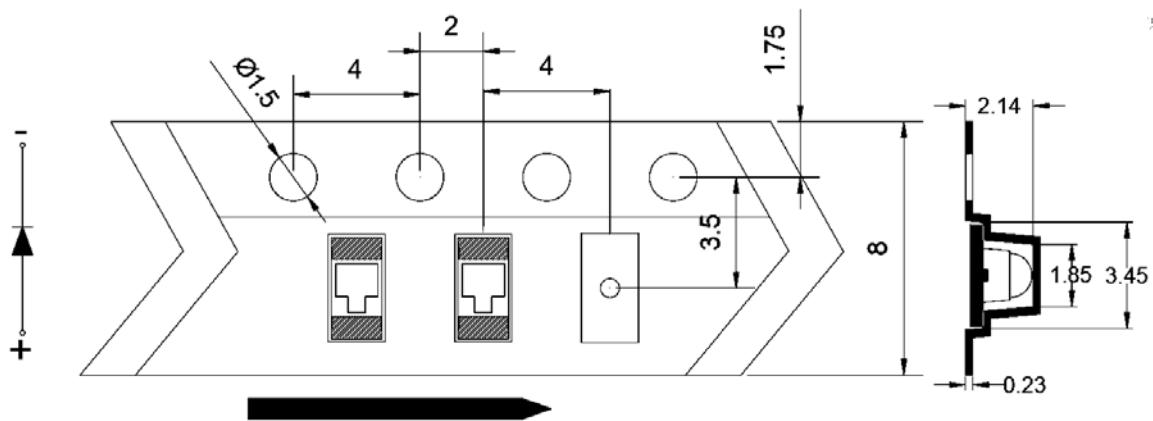
Radiation angle



● Reel Dimensions

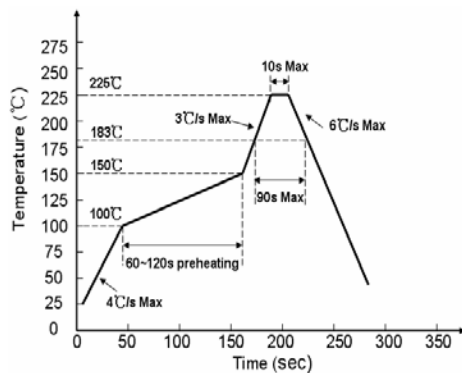


● Package Dimensions Of Tape And Reel

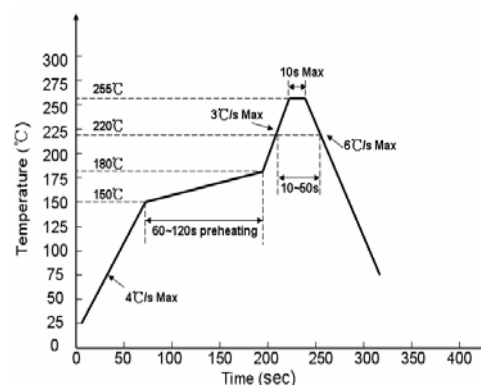


Notes:

1. Taping Quantity :2000pcs
2. The tolerances unless mentioned is ± 0.15 mm



PB



PB FREE



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Reliability Test Items And Conditions

Items	Test Condition	Test Hours/Cycles	Ac/Re
Reflow Soldering	Tsld=260℃,10sec	3 times	0/20
Temperature Cycle	85℃(30Min)~25℃ (5min) ~-40℃(30Min)	100 cycle	0/20
Thermal Shock	-40℃ (15min)~115℃ (15min)/ conversion time is 5 minutes	100 cycle	0/20
High Temperature Storage	Temp. : 100℃	1000Hrs	0/20
Low Temperature Storage	Temp. : -40℃	1000Hrs	0/20
Life Test	Ta=25℃ IF=100mA	1000Hrs	0/20
Pulsed Operating Life	IFP=specification design、 pulse width≤10ms, duty cycle≤10%, high temperature pulse test (100±5℃-20hole-pulse2.0HZ)	168hrs	0/20
Double 85 Aging attenuation experiment	85±5℃/85±5%RH	1000 hrs	0/20

Failure Criteria

Test Items	Symbol	Test condition	Failure Criteria	
			Min.	Max.
Forward Voltage	VF	IF=100mA	---	(U.S.L*)×1.1
Reverse Current	IR	VR=5V	---	(U.S.L*)×2.0
Radiation intensity	Ie	IF=100mA	(L.S.L*)×0.7	---

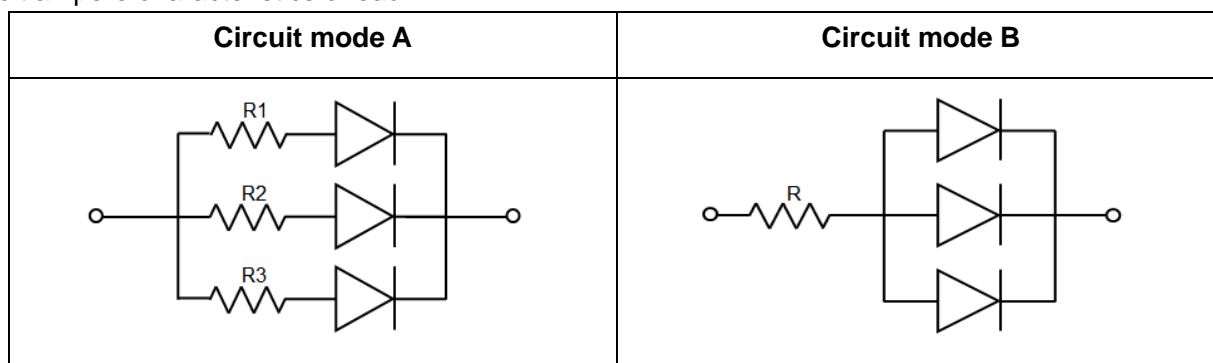
Notes:

1. U.S.L means the upper limit of specified characteristics.
2. Measurment shall be taken between 2 hours and after the test pieces have been returned normal ambient conditions after completion of each test.

● Cautions

use

1. LED is a current driven component, the slight change of voltage will produce large current fluctuation, which will lead to component damage.
The customer should use resistance series as current limiting protection.
2. In order to ensure the color consistency of multiple LEDs in parallel, it is recommended to use a separate resistor for each branch, as shown in mode a below;
If the circuit shown in mode B below is used, the LED light color may be different due to the different volt-ampere characteristics of each LED



3. 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

Storage

1. Recommended storage environment is: temperature 5 ~ 30 ° C, humidity below 60%
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、White and Green product) 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.



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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.