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DATA SHEET

PART NO. : LC15D4PTDT-RP-XG

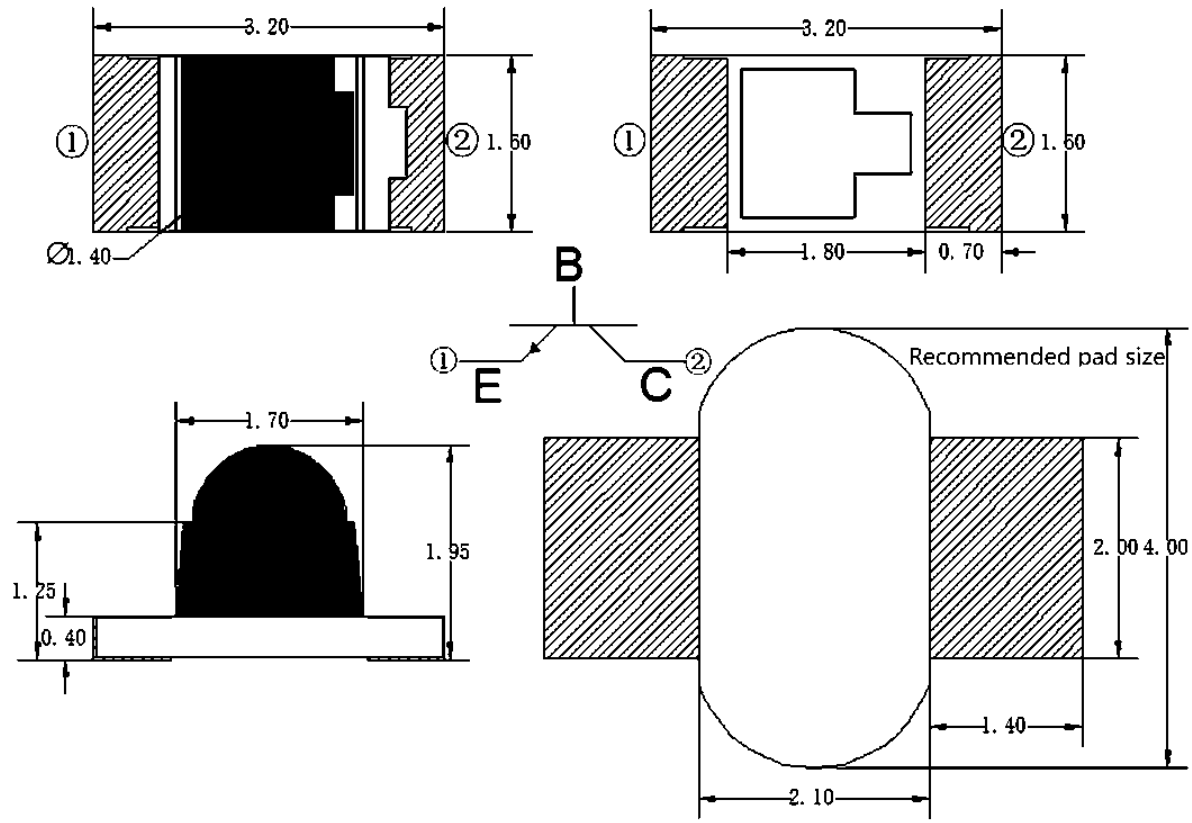
REV : A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

FEATURES

- Dimension (L/W/H): 3.2 x1.6 x1.95mm
- 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±0.10mm unless otherwise noted
3. The Specifications in the datasheet are subject to change without notice.

Chip Materials

Dice Material : Silicon
Colloid: Black spherical colloid

ABSOLUTE MAXIMUM RATING : (Ta = 25℃)

Symbol	Parameter	Rating	Unit
PD	Power Dissipation	75	mW
V_{CEO}	Collector-emitter voltage	30	V
V_{ECO}	Emitter-collector voltage	5	V
Topr	Operating Temperature Range	-25℃ ~ + 85	℃
Tstg	Storage Temperature Range	-40℃ ~ + 85	℃
Tsol	Reflow soldering : 260°C For 10 Seconds Hand soldering: 350°C For 3 Seconds		

ELECTRO-OPTICAL CHARACTERISTICS : (Ta = 25℃)

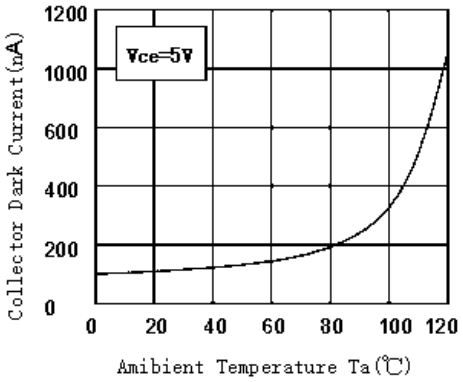
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-emitter breakdown voltage	BV_{CEO}	90	---	---	V	I_{CEO} =100μA Ee=0mW/cm²
Emitter-collector breakdown voltage	BV_{ECO}	7	---	11	V	I_{ECO} =10μA Ee=0mW/cm²
Collector-base breakdown voltage	BV_{CBO}	70	---	---	V	I_{CBO} =100μA Ee=0mW/cm²
Collector-emitter saturation voltage	$V_{CE(sat)}$	0	---	0.3	V	I_C =2mA I_B=100μA Ee=1mW/cm²
Peak sensitive wavelength	λp	---	940	---	nm	---
Current amplification factor	hFE	1100	---	1800		V_{CE}=5V，I_C=2mA
Bright current	Icon	3.9	---	17.5	mA	Ee=0.22437mW/cm² λp=940nm V_{CE}=5V I_F=20mA
Spectral bandwidth	λ0.5	700	---	1100	nm	---
Dark collector current	I_{CEO}	0	---	100	nA	V_{CE}=50V Ee=0mW/cm²

Bin Code (@Ta=25℃)

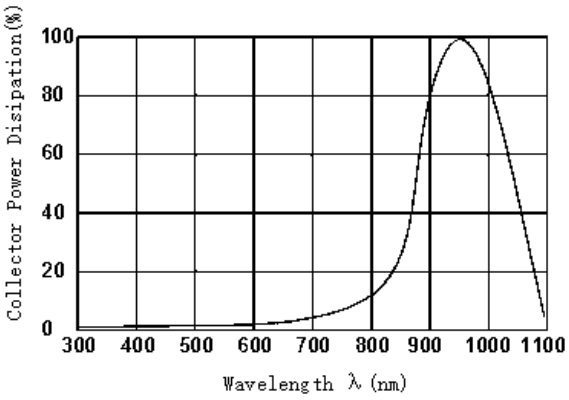
Parameter	Symbol	Min.	Max.	Unit	Test Current
Bright current	GH	3.9	4.85	uA	Ee=1mW/cm2 λp=940nm I_F=20mA
	HH	4.85	6.1		
	AJ	6.1	7.5		
	BJ	7.5	9.5		
	CJ	9.5	11.5		
	DJ	11.5	14.3		
	EJ	14.3	17.5		

Typical Electro-Optical Characteristics Curves

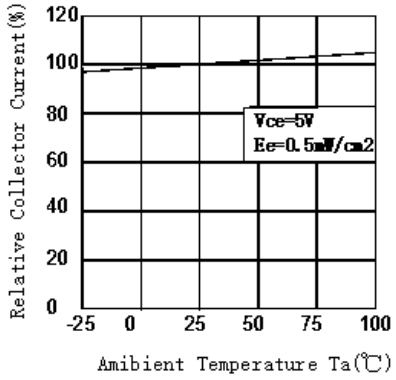
Collector Dark Current vs. Ambient Temperature



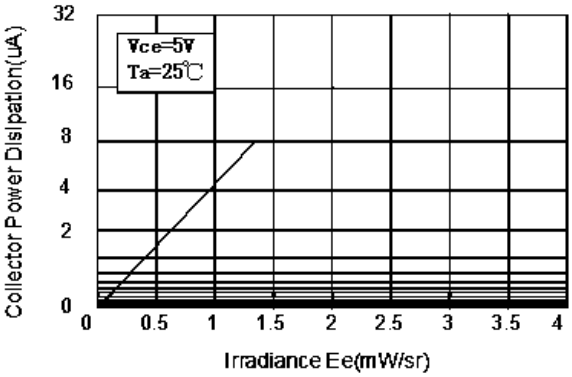
Spectral Sensitivity



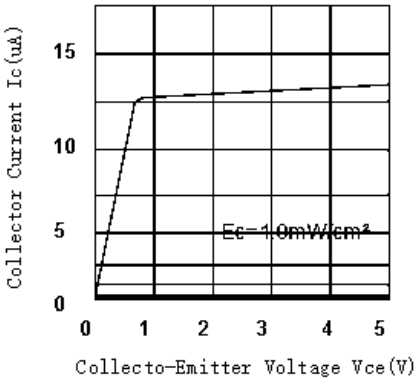
Relative Collector Current vs. Ambient Temperature



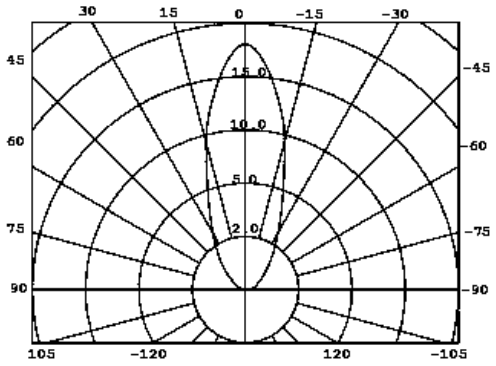
Collector Current vs. Irradiance



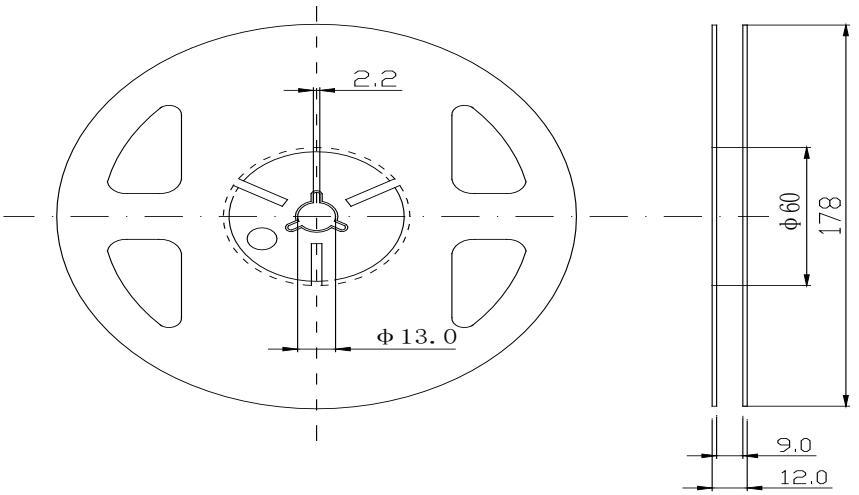
Collector Current vs. Collecto-Emitter Voltage



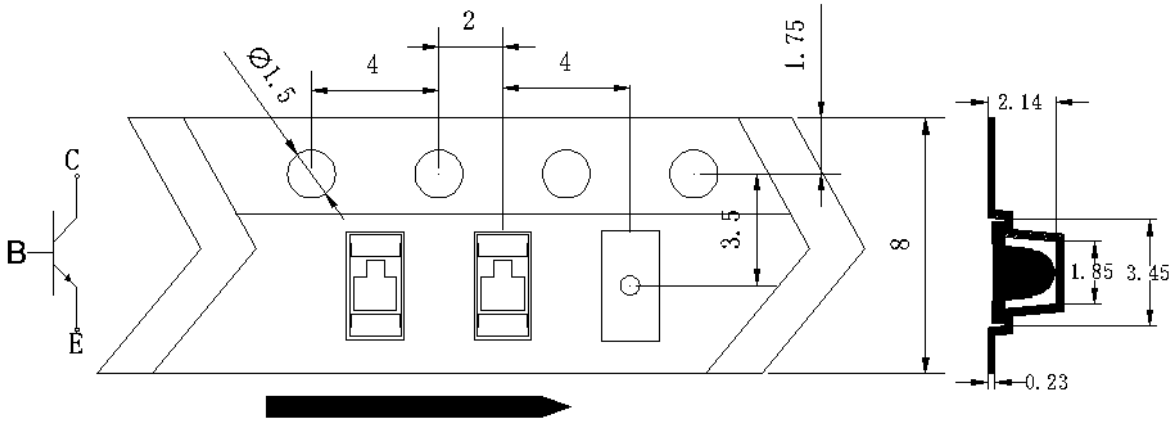
Relative spectral distribution chart



Reel Dimensions

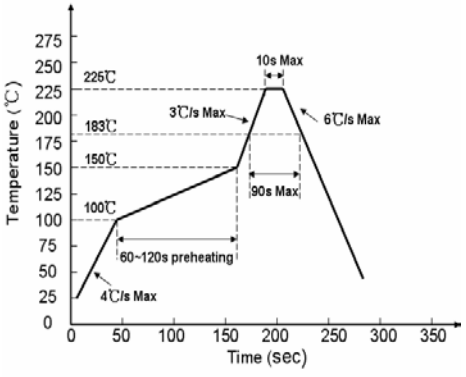


Package Dimensions Of Tape And Reel

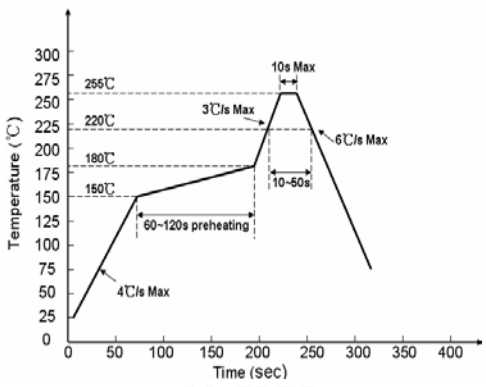


Notes:

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



PB



PB FREE

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=20mA	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=20mA	---	USL*1×1.1
Reverse Current	IR	VR= 5V	---	10μA
Luminous /Intensity	φ/Iv	IF=20mA	LSL*2×0.7	---

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

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 ℃ / 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.
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 ℃ 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.