DATA SHEET

PART NO.:LT2835WDT-76-BKS-U1

REV: A/0

CUSTOMER'S APPROVAL: _____ DCC: _____

2.8*3.5*0.7 mm PLCC LED

LT2835WDT-76-BKS-U1 | REV:A/0

● Features

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES
注意：操作时应注意静电
敏感释放设备装置

- PLCC-2 package.
- Fluorescence Type
- High Luminous Intensity
- High Efficiency
- Pb-free.
- The product itself will remain within RoHS compliant version.

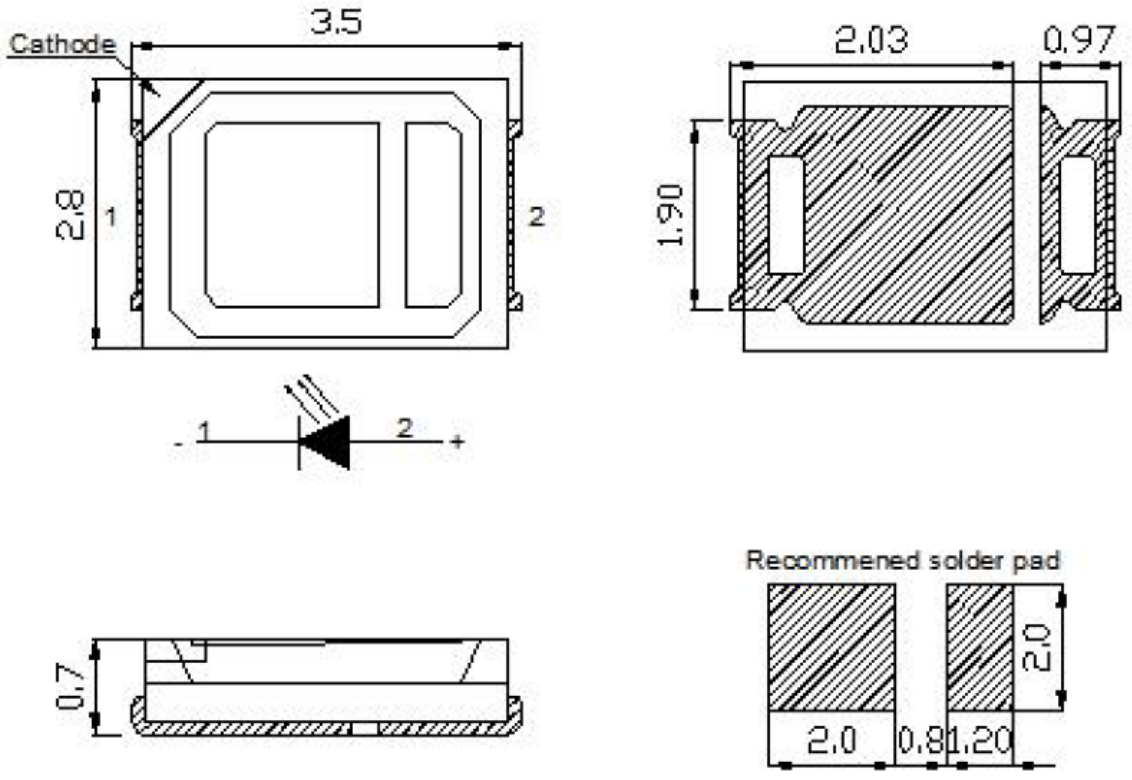
● Descriptions

- Due to the package design, 2835 has wide viewing angle, low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and special phosphors. This feature makes the LED ideal for light guide application.

● Applications

- TV back lighting
- Decorative and Entertainment Lighting. .
- Illuminations.

● Package Dimensions(Lens Type: Yellow Diffused)



Notes:1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.254mm (0.01”) unless otherwise specified.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change with notice.
5.The colors of the lines are specified in the specification unless otherwise specified.

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Relative Color Temperature	Tc	3800	--	4200	K	IF =150mA
Color Rendition Index	Ra	80	--	--		IF =150mA
Forward Voltage	VF	2.7	---	3.5	V	IF =150mA
Revers Current	IR	---	- -	10	μA	VR=5V
Luminous Intensity	IV	60	--	70	mcd	IF =150mA
Viewing Angle	$2\theta_{1/2}$	120			deg	---

● Absolute Maximum Ratings At Ta=25℃

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	500	mW
Peak Forward Current	IFP	200	mA
DC Forwa d C rrent	IF	150	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature Range	Topr	-40° C ~ + 85° C	
Storage Temperature Range	Tstg	-40° C ~ +100° C	
Soldering Condition	Tsol	Reflow(hand) soldering : 260° C(300° C)For 5(3)Seconds	

●Typical electro-optical characteristics curves

Fig.1 Relative Intensity vs. Wavelength

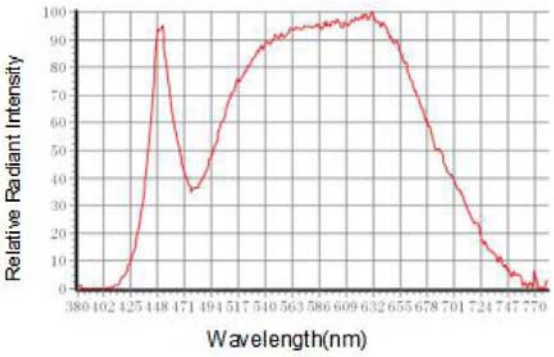


Fig.2 Forward Current vs.AmbientTemperature

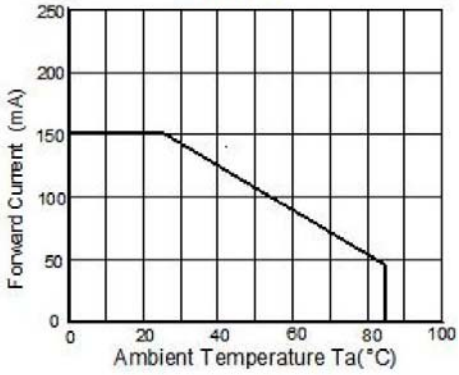


Fig.3 Forward Current vs. Forward Voltage

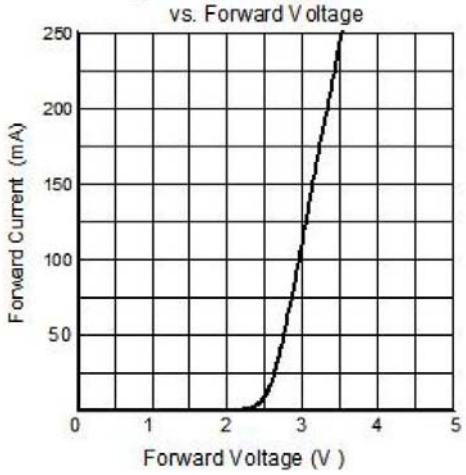


Fig.4 Relative Luminous Intensity vs. Ambient Temperature

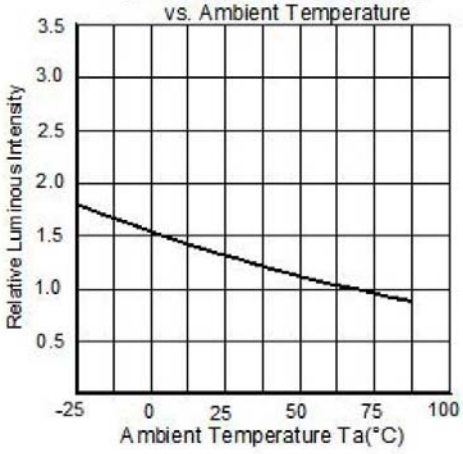


Fig.5 Relative Luminous Intensity vs. Forward Current

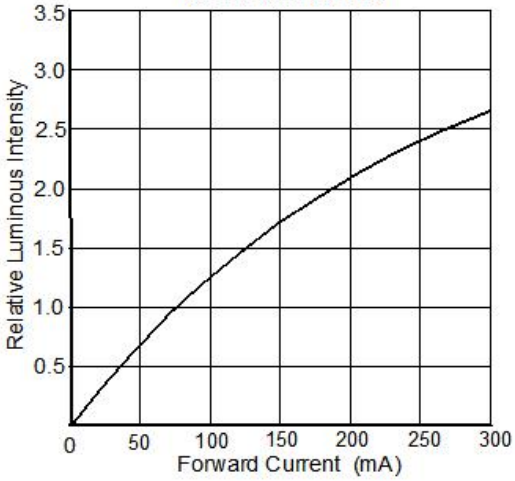
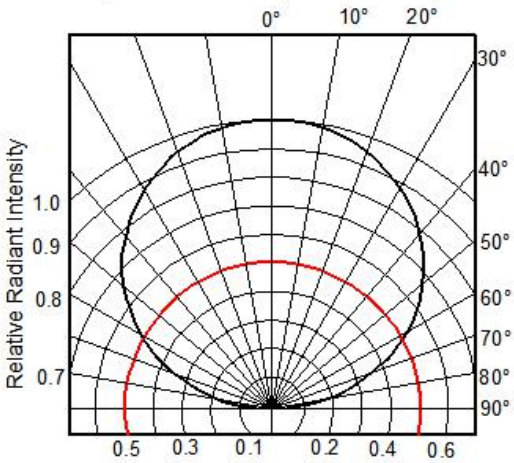
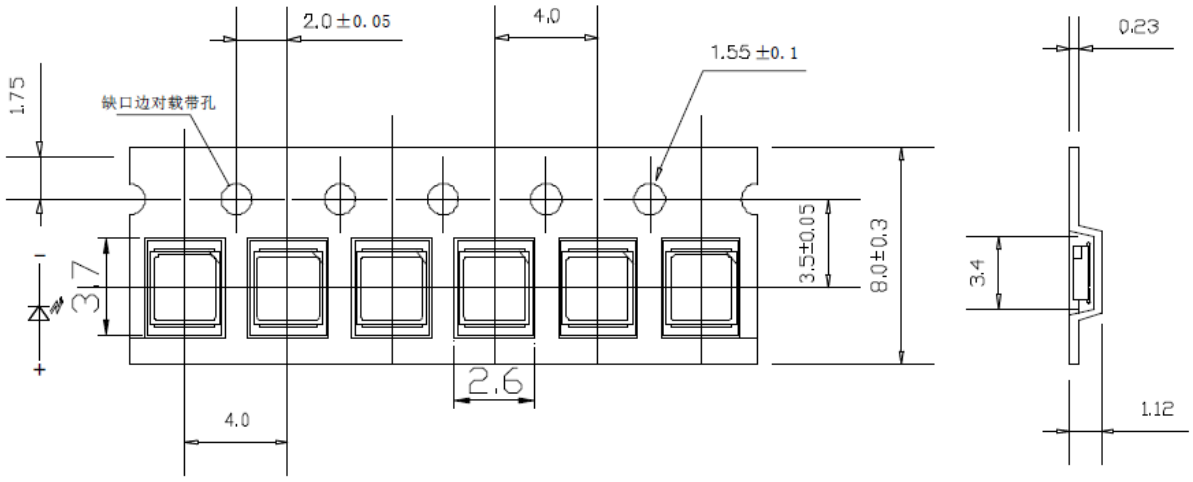


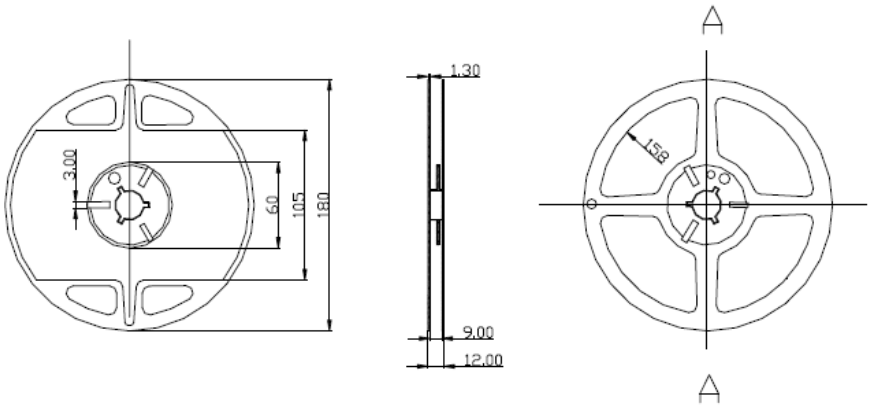
Fig.6 Radiation Diagram (Ta=25°C)



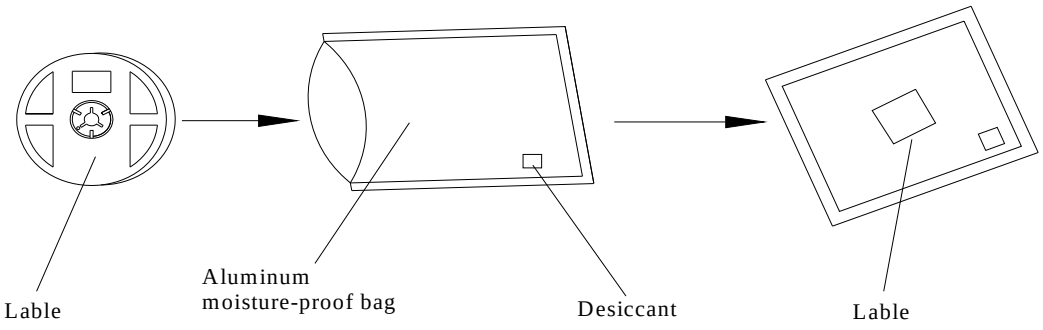
● Packing



Note: Tolerance unless mentioned is ±0.1mm; Unit = mm



Note: Carrier Tape Dimensions: Loaded Quantity 4000 pcs Per Reel.



● Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

Confidence level：90%.

LTPD：10%.

Items	Test Condition	Test Hours/ Cycles	Quantity	Ac/Re
Reflow Soldering	Temp. : 260℃±5℃ Min. 5sec.	3times	22 PCS	0/1
Temperature Cycle	H : +85℃ 30min. ∫ 5 min L : -40℃ 30min.	300 Cycles	22PCS	0/1
Thermal Shock	H : +100℃ 10min. ∫ 10 sec L : -40℃ 10min.	100Cycles	22PCS	0/1
High Temperature Storage	Temp. : 100℃	1000Hrs	22PCS	0/1
Low Temperature Storage	Temp. : -40℃	1000Hrs	2PCS	0/1
Dc Life	IF =150mA	1000Hrs	22PCS	0/1
High Temperature / High Humidity	85℃/ 85%RH	50 Hrs	22PCS	0/1

Failure Criteria

Test It ms	Symb l	Test condition	Failure Criteria	
			Min.	Max.
Forward Voltage	VF	IF=150mA	---	(U.S.L*)×1.1
Reverse Current	IR	VR=5V	---	(U.S.L*)×2.0
Luminous Intensity	Iv	IF=150mA	(L.S.L*)×0.7	---

Notes:

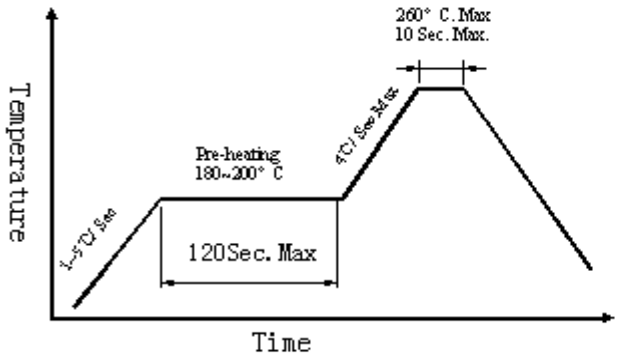
1.U.S.L means the upper limit of specified characteristics.

2.Measurement shall be taken between 2 hours and after the test pieces have been returned normal ambient conditions after completion of each test.

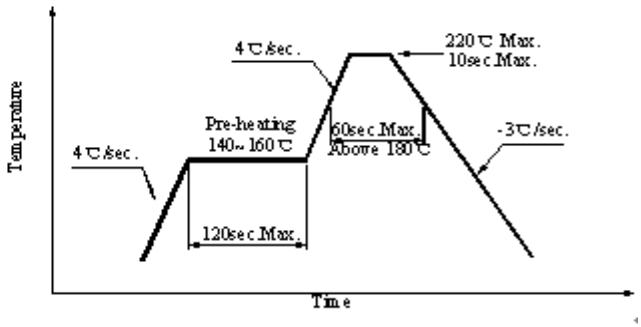
● Precautions for Use

● SMT Reflow Soldering Instructions

<Pb-free solder>



<Lead solder>



1.Reflow soldering should not be done more than two times

2.When soldering,do not put stress on the LEDs during heating

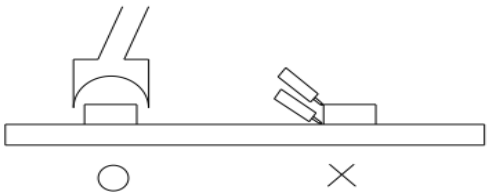
● Soldering Iron

1.When hand soldering,keep the temperature of iron below less 300°C less than 3 seconds.

2.The hand solder should be done only one time.

● Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure).It should be confirmed in advance whether the characteristics of LEDs will or will not be damaged by repairing.

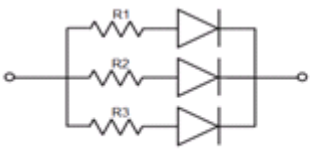


● Cautions

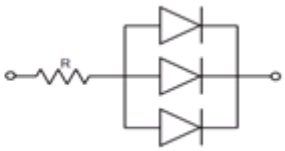
Application

1. A LED is a current-operated device. The slight shift of voltage will cause big change of current, which will damage LEDs. Customer should use resistors in series for the Over-Current-Proof.

2. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended to use individual resistor separately, as shown in Circuit A below. The brightness of each LED shown in Circuit B might appear difference due to the differences in the I-V characteristics of those LEDs.



Circuit model A



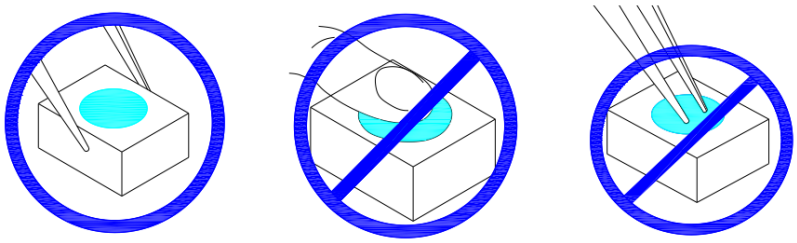
Circuit model B

High temperature may reduce LEDs' intensity and other performances, so keeping it away from heat source to get good performance is necessary.

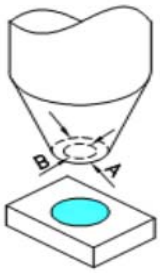
Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible.Although its characteristic significantly reduces thermal stress,it is more prone to damage by extermal mechanical force.As a re sult,special handling precautions must be observed during assembling using silicone encapsulated LED products.Falure to comply might leads to damage and premature failure of the LED

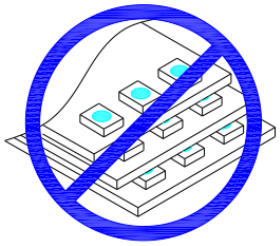
1. handle the component along the side surface by using forceps or appropriate tools,do not dirctly touch or handle the silicone lens surface,it may damage the internal circuitry.



2. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.The dimensions of the component must be accurately programmed in the pick-and- place machine to insure precise pickup and avoid damage during production.



1. Do not stack together assembled PCBs containing LEDs.Impact may scratch the silicong lens or damage the internal circuitry.



4.Not suitable to operate in acidic environment,PH<7.

Storage

1.Before opening original package, it is recommended to store them in the following environment:Temperature: 5℃~30℃/ Humidity: 85%RH max.

2. After opening original package, the storage ambient for the LEDs should be in 5~30°C temperature and 60% or less relative humidity.

3. In order to avoid moisture absorption, it is recommended that the LEDs that out of the original package should be stored in a sealed container with appropriate desiccant, or in desiccators with nitrogen ambient.

4. The LEDs should be used within 24hrs (1 day) after opening the package. Once been mounted, soldering should be quick.

5. If the moisture absorbent material (silica gel) has faded away or the LEDs stored out of original package for more than 168hrs (7 days), baking treatment should be performed using the conditions: 65℃ at least 24 hours.

6.More than fifteen days of the products must be disassembled for high temperature baking at 150℃/6 hours before they can be produced.

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.

5. All surfaces and objects within 1 ft close to LEDs measure less than 100V.

Cleaning

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

Others

1.The LEDs described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household applications).Consult PARAlight's Sales in advance for the applications in which exceptional reliability is required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health. (such as in aviation, transportation, traffic control equipment, medical and life support systems and safety devices).

2.The light output from the high luminous intensity LEDs may cause injury to human eyes when viewed directly.

3. The appearance and specifications of the product may be modified for improvement without prior notice.