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DATA SHEET

PART NO.: L-T2835IR4CT-90-JH

REV: A / 2

CUSTOMER'S APPROVAL: _____

DCC: _____

DRAWING NO.: DS-31P-18-0236

DATE: 2019-4-10

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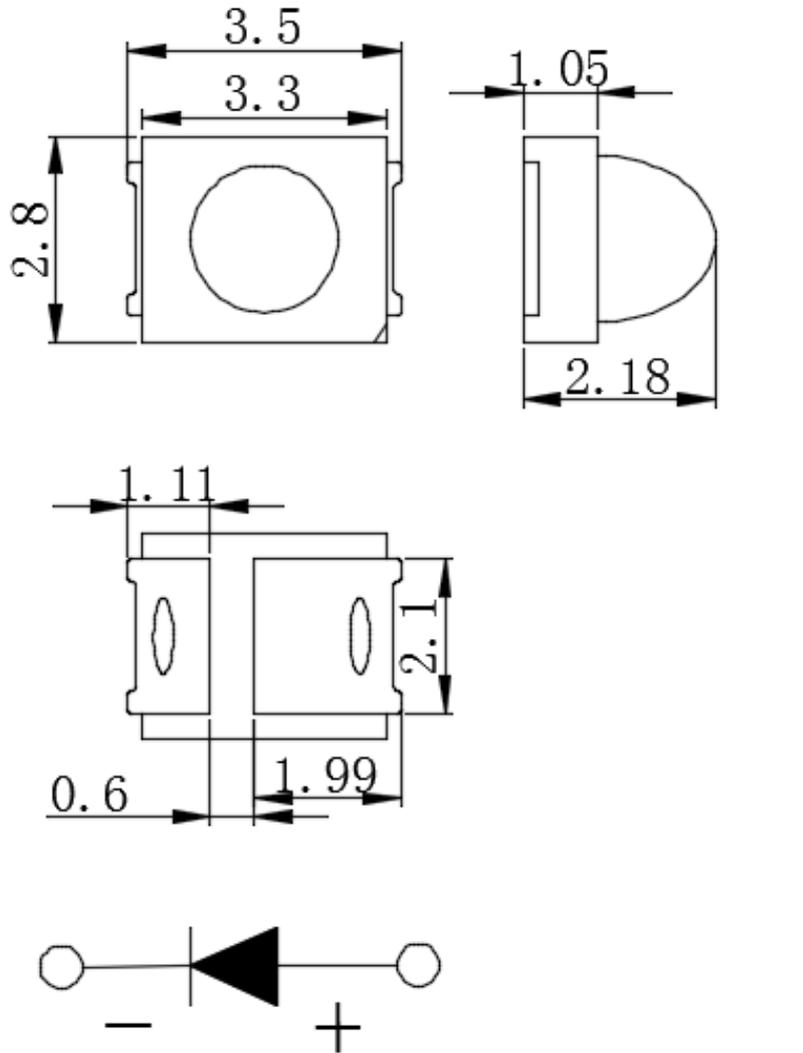


2.8*3.5*2.3 MM SMD LED

Part No.: L-T2835IR4CT-90-JH

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● Mechanical dimension



● Features

- * Colorless transparent
- * Long service life
- * Can be used for a variety of infrared remote control systems, all kinds of sensors infrared light
- * The ideal light source for surveillance cameras



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● Absolute Maximum Ratings at Ta = 25°C

ITEMS	SYMBOL	ABSOLUTE MAXIMUM RATING	UNIT
Maximum Current	I _F	250	mA
Pulse Current	I _{FP}	200	mA
Reverse Voltage	V _R	5	V
Power Dissipation	P _D	300	mW
Operation Temperature	T _{opr}	-40 ~ + 100	°C
Storage Temperature	T _{stg}	-40 ~ + 100	°C
Junction temperature	T _j	120	°C
Soldering temperature	T _{sol}	260	°C
Manual soldering time at 260°C(max)	---	5	sec

Notes:

1. Proper current rating must be observed to maintain junction temperature below the maximum at all time.
2. IFM condition: 0.1 ms pulse width, Duty Cycle=0.25.
3. All above test condition: Mounted on PC Board FR 4(pad size>=16mm²)
4. LED lamps are not designed to be driven in reverse bias.

● Typical Electrical & Optical Characteristics (Ta = 25°C)

Items	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F =150mA	1.2	---	1.7	V
Reverse Current	I _R	V _R = 5V	---	---	5	A
Light power	Φ _v	I _F =150mA	60	--	100	Mw/sr
peak wavelength	WP	I _F =150mA	---	850	---	NM
Power (Avg)	P	I _F =150mA	---	230	---	mw
Light Angle	2θ _{1/2}	IF=150mA	--	90	--	deg



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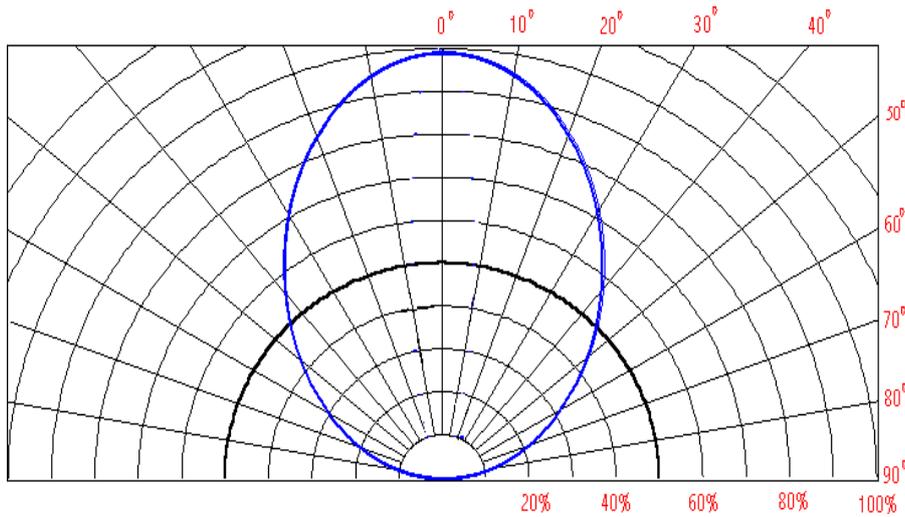
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Notes:

- 1) Tolerance of measurement of the Color Coordinates is ± 0.01 .
- 2) Tolerance of measurement of Vf is ± 0.05 .
- 3) Luminous Flux is measured with the accuracy of $\pm 10\%$.

● **Light Angle**



● **Graphs**

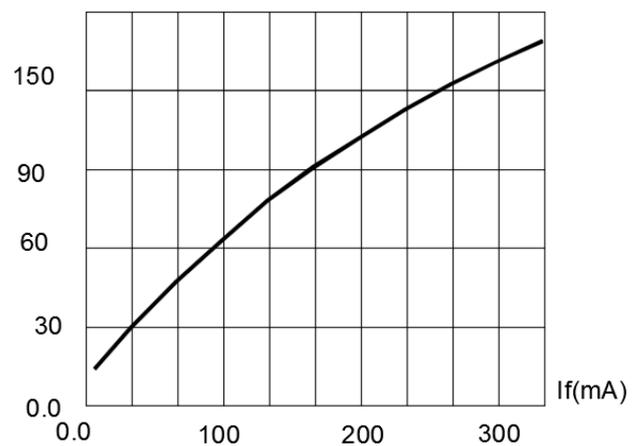
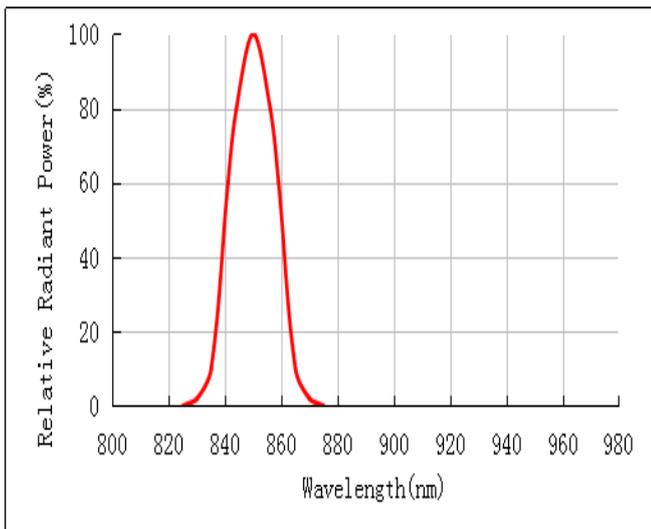


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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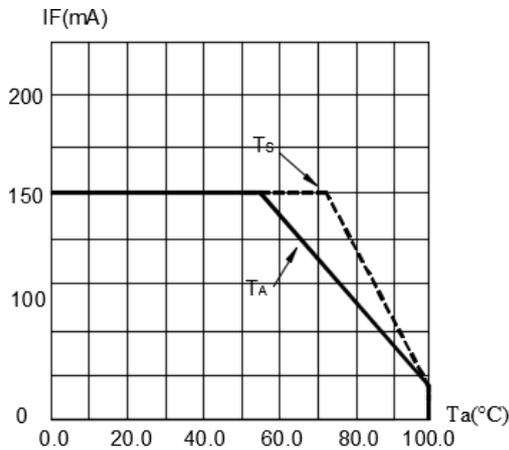


FIG. 2 MAXIMUM FORWARD DC CURRENT VS AMBIENT TEMPERATURE (Tjmax=120 °C)
TA temp. ambient; Ts temp. solder point.

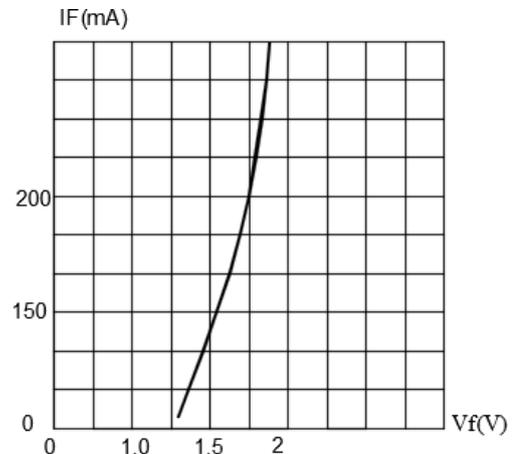
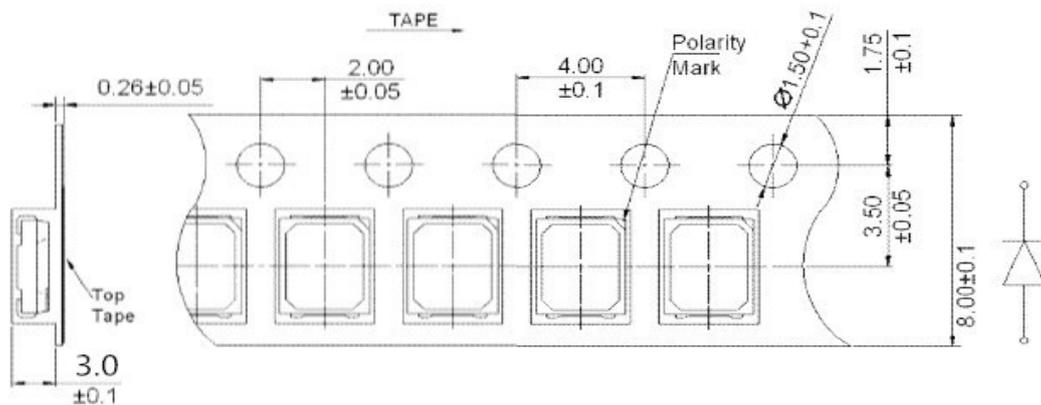


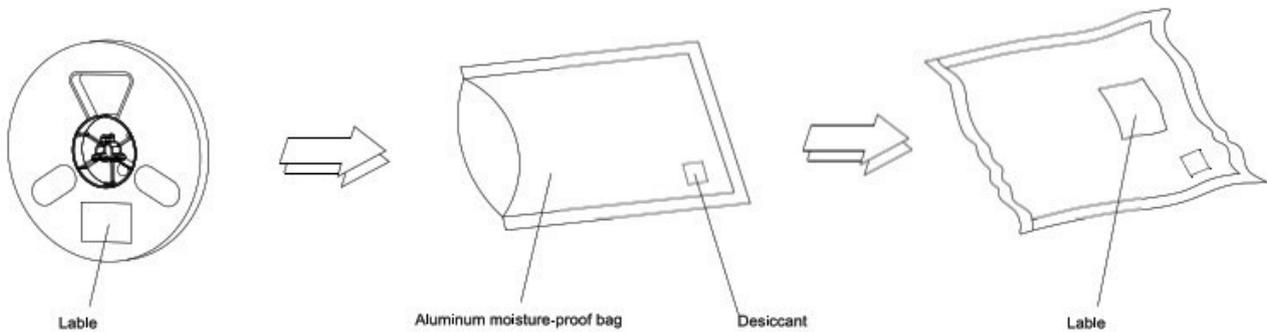
FIG. 1 FORWARD CURRENT VS. FORWARD VOLTAGE.

● Packaging

Tape Specifications (Units : mm)



Moisture Resistant Packaging



Note: The tolerances unless mentioned is ± 0.1 mm, Unit: mm



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Notes:

1. All dimensions are in mm, tolerance is ± 2.0 mm unless otherwise noted.
2. Specifications are not subject to change without notice.

● Reliability Testing for SMD

Type	Test Item	REF. Standard	Test condition	Times	Sample count
Environments Sequence	Temperature Cycle	JESD22-A104 -A	-40°C ~ 25°C ~ 100°C ~ 25°C 30min, 5min, 30min, 5min	100 cycles	100
	Thermal shock (冷热冲击)	JESD22-A106	-40°C ~ 100°C 30min, 30min	100 cycles	100
	Temperature Storage	JIS C 7021 (1977)B-11	Ta=60°C RH=90%	1000Hrs	100
Operation Sequence	Life test	JESD22-A108-A	Ta=25°C If: B=150mA	1000Hrs	100
	High humidity Heat life test	JESD22-A101	Ta =85°C RH=85% If: B=150mA	1000Hrs	100
Destructive Sequence	Resistance to soldering Heat	JESD22-A113	IR soldering 245°C/10sec	10Sec	20
ESD Test	ESD TEST	AEC(Q101-002)	Human body model 2000v	--	10
Physical Sequent	Physical Sequence	MIL-STD-883 Method 2007	20G min ,20 to 2000Hz 4 cycles, 4min. Each, X, Y, Z	--	50



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● Application notes

The purpose of this document is to provide a clear understanding to the customers and users, on the ways how to use our LED lamps appropriately.

● Description

Generally, LED can be used the same way as other general-purpose semiconductors. When using VANTEX'S Lamps, the following precautions must be taken to protect the LED.

1. Cleaning

- ✧ Don't use unspecified chemical liquids to clean the SMT-LED; the chemical could harm the SMT-LED. When washing is necessary, please immerse the SMT-LED in alcohol at normal room temperature for less than 1 minute and dry at normal room temperature for 15 minutes before use. The influence of ultrasonic cleaning on the SMT-LED depending on factors such as ultrasonic power and the way SMT-LED are mounted. Ultrasonic cleaning shall be pre-qualified to ensure this will not cause damage to the SMT-LED.

2. Moisture Proof Packing

In order to prevent moisture absorption into SMT-LED during the transportation and storage, SMT-LED is packed in a moisture barrier bag. Desiccants and a humidity indicator are packed together with SMT-LED as the secondary protection. The indication of humidity indicator card provides the information of humidity within SMD packing.

- ✧ Shelf life in original sealed bag at storage condition of <math><40^{\circ}\text{C}</math> and <math><90\%RH</math> is 6 months. Baking is required whenever shelf life is expired
- ✧ After bag opening, the SMT-LED must be stored under the condition <math><30^{\circ}\text{C}</math> and <math><60\%RH</math>. Under this condition, SMT-LED must be used (subject to reflow) within 8 hours after bag opening, and re-baking is required when exceeding 12 hours. For baking, place SMT-LED in oven at temperature $80\pm 5^{\circ}\text{C}$ and relative humidity $\leq 10\%RH$, for 12 hours.

3. Soldering .(Manual soldering by soldering iron)

The use of a soldering iron of less than 25W is recommended and the temperature of the iron must be kept at below 315°C, with soldering time within 2 seconds. The silicone sealant of SMT-LED should not be in contact with tip of soldering iron. No mechanical stress should be exerted on the resin portion of SMT-LED during soldering. Handling of SMT-LED should be done when the package has been cooled down to below 40°C or less. This is to prevent the SMT-LED failures due to thermal-mechanical stress during handling.



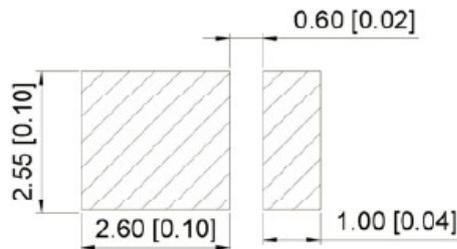
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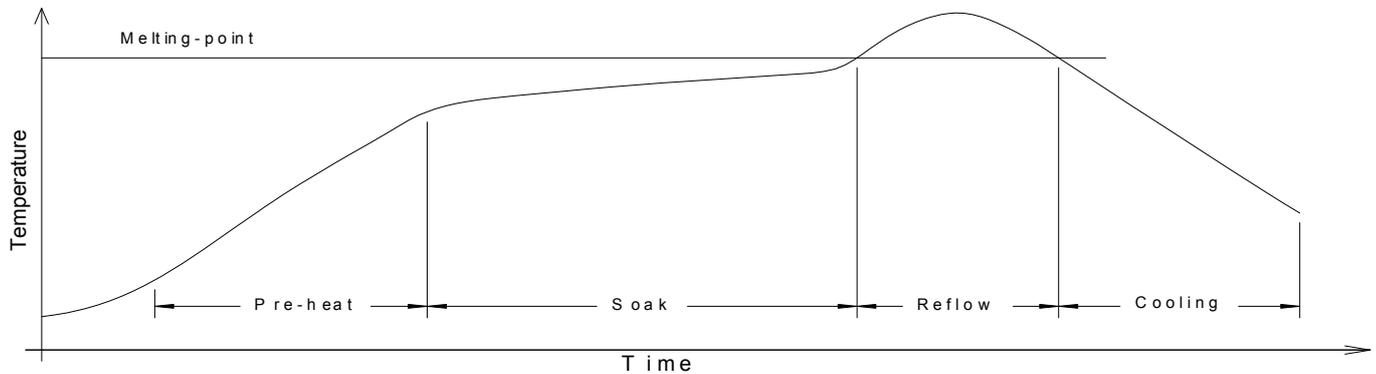
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● Reflow Soldering

◇ Recommended solder pad design for heat dissipation(Unite:mm)



◇ The temperature (Top surface of SMT-LED) profile is as below:



Solder = Sn63-Pb37	Solder =Low Lead-free
Average ramp-up rate = 4°C/s max.	Average ramp-up rate = 3°C/s max.
Preheat temperature = 100°C ~150°C	Preheat temperature = 130°C ~170°C
Preheat time = 100s max.	Preheat time = 120s max.
Ramp-down rate = 6°C/s max.	Ramp-down rate = 6°C/s max.
Peak temperature = 220°C max.	Peak temperature = 260°C max.
Time within 5°C of actual Peak Temperature = 10s max.	Time within 3°C of actual Peak Temperature = 25s max.
Duration above 180°C is 80s max.	Duration above 200°C is 40s max.

- ◇ Modification is not recommended on SMT-LED after soldering. If modification cannot be avoided, the modifications must be pre-qualified to avoid damaging SMT-LED.
- ◇ Reflow soldering should not be done more than one time.
- ◇ No stress should be exerted on the package during soldering.
- ◇ PCB should not be wrapped after soldering; this is to allow natural cooling of the PCB board and SMT-LED.



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● Electrostatic Discharge and Surge current

- ◇ Electrostatic discharge (ESD) or surge current (EOS) may damage SMT-LED. Precautions such as ESD wrist strap, ESD shoe strap or antistatic gloves must be worn whenever handling of SMT-LED.
- ◇ All devices, equipment and machinery must be properly grounded.
- ◇ It is recommended to perform electrical test to screen out ESD failures at final inspection. It is important to eliminate the possibility of surge current during circuitry design.

● Heat Management

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