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DATA SHEET

PART NO.: L-T69F3IN1CT-JNJ

REV: A / 0

CUSTOMER'S APPROVAL: \_\_\_\_\_

DCC: \_\_\_\_\_

DRAWING NO.: DS-31P-19-0120

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# SURFACE MOUNT DEVICE LED

Part No.: L-T69F3IN1CT-JNJ

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## ■Packa Technical Data Sheet

This product mainly converts electric energy directly into infrared ray and emits radiation to light device. Usually used to gas detector and food measurement.

## ■Features

Material: InGaAsP/InP

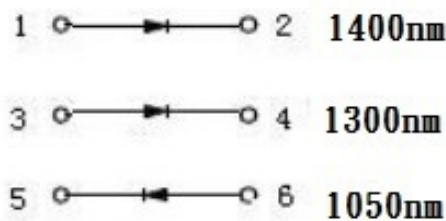
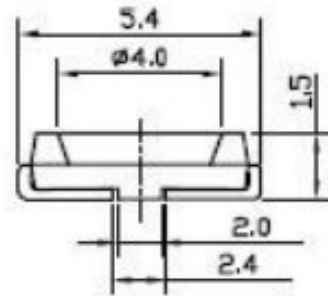
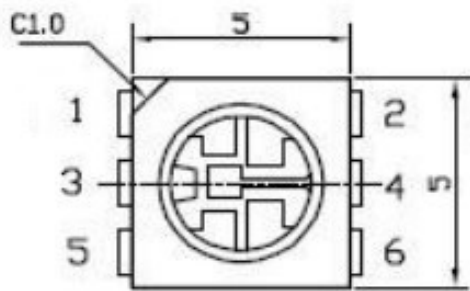
Encapsulation: Silicone

Soldering methods: Pb-Free reflow soldering

High Luminous Intensity ,Low Power Dissipation, good Reliability and Long Life

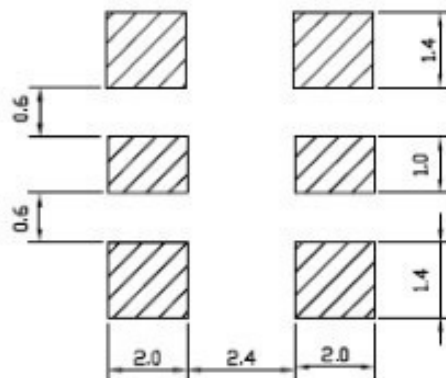
Complied With ROHS Directive

## ■Package Dimensions



Tolerance:  $\pm 0.1$

Unit : mm



## Notes:

- 1.All dimensions are in millimeters.
2. Tolerances unless mentioned is  $\pm 0.15$  mm.



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■ Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	IF	≤100	mA
Reverse Voltage	VR	≤10	V
Junction Temperature	Tj	≤115	°C
Storage Temperature	Chip	-40~ +85	°C
	Tstg Chip-on-tape/storage	-5~ +35	°C
	Chip-on-tape/transportation	-20~ +65	°C
Temperature during Packaging		280 (<18sec)	°C

■ Electrical - Optical Characteristics (Ta =25°C)

Item	Symbol	Condition	Min	Typ	Max	Unit	
Forward Voltage	VF	IF=100mA	1050	0.7	1.3	1.75	V
			1300	0.7	1.3	1.75	
			1400	0.7	1.3	1.75	
Wavelength	WD	IF=100mA	1050	1000	1050	1100	nm
			1300	1250	1300	1350	
			1400	1350	1400	1450	
Luminous Flux	Φ	IF=100mA	1050	27	33	38	mW
			1300	28	34	39	
			1400	23	25	27	
Reverse current	IR	VR=10V	0		5	uA	
Viewing Angle	2θ1/2	IF=50mA	120	120	120	deg	
Recommend Forward Current	IF(rec)	IF=50mA	30	50	100	mA	

Note:

1. Work absolute ratings Ta=25°C
2. Tolerance of measurement of forward voltage±0.1V



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Characteristic Curves:

Fig.1-Relative Radiant Flux vs. Forward Current

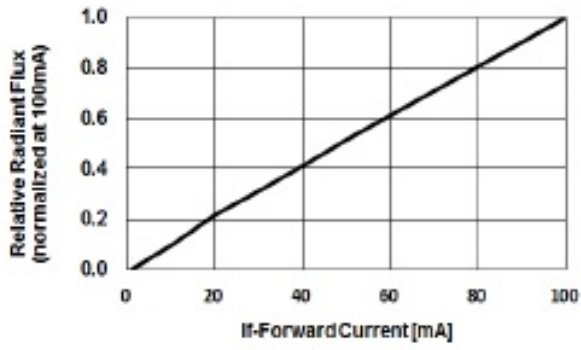


Fig.2-Forward Current vs. Forward Voltage

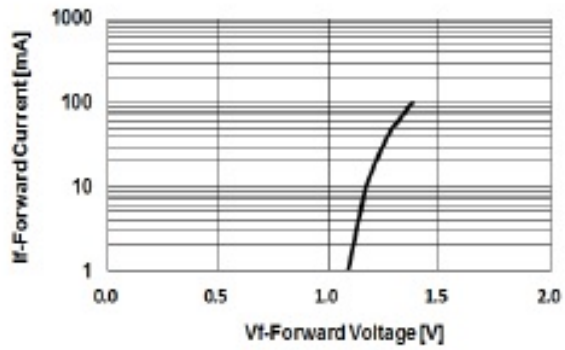


Fig.3 - Relative Radiant Flux (@100mA) vs. Ambient Temperature

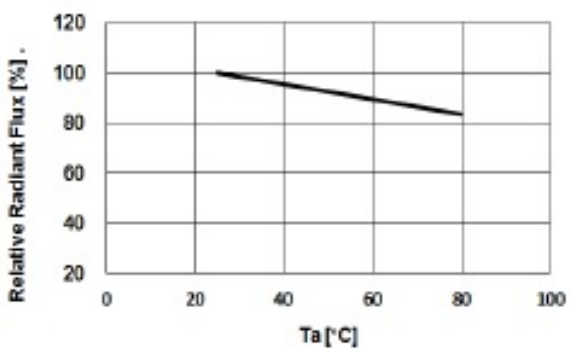


Fig.4 - Forward Voltage (@100mA) vs. Ambient Temperature

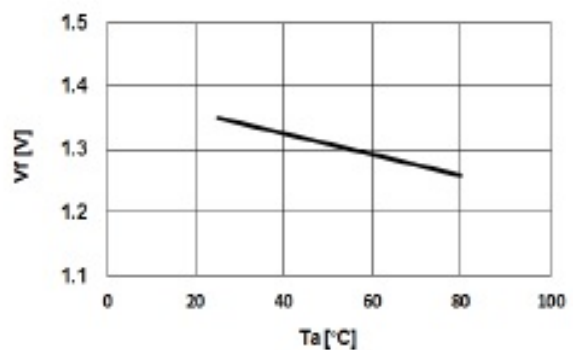


Fig.5 - Peak Wavelength (@100mA) vs. Ambient Temperature

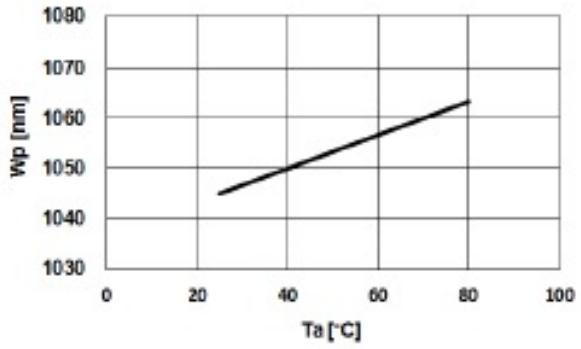
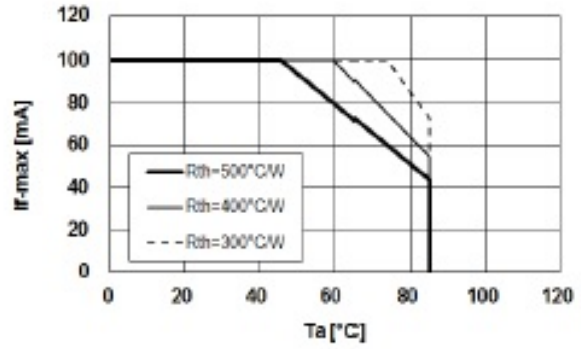


Fig.6 - Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 115°C)



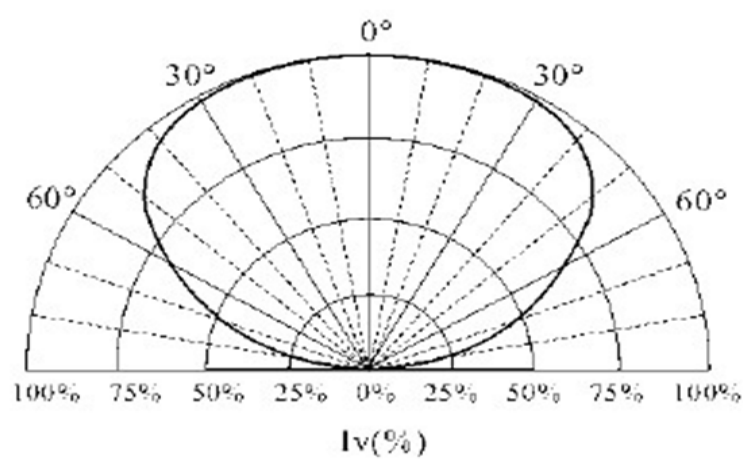


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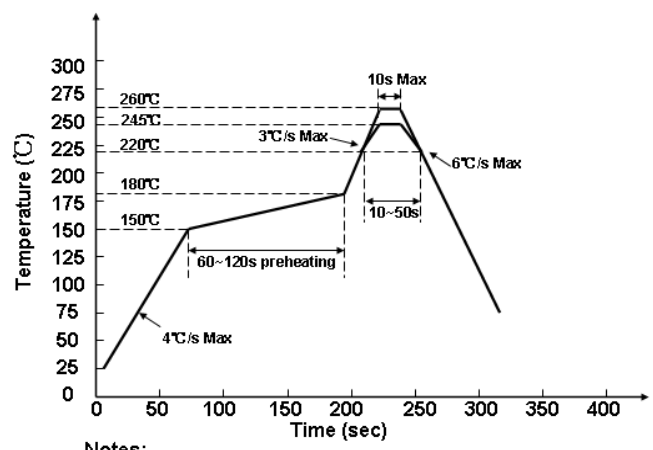
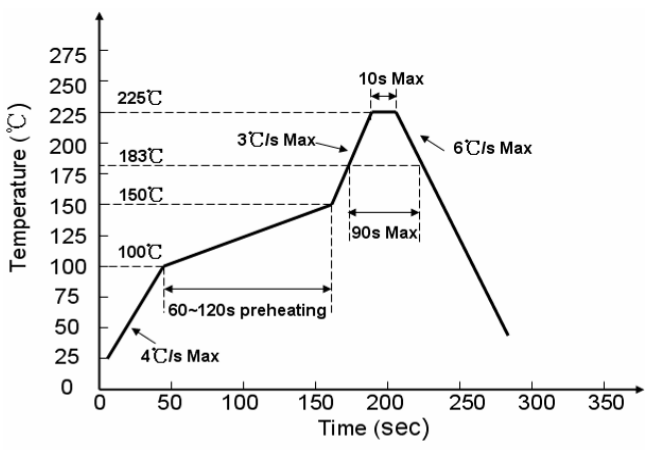
## ■ Radiation Pattern



## ■ Soldering Profile Suggested

1. For Lead Solder

2. For Lead Free Solder



Notes:  
We recommend the soldering temperature  $245 \pm 5^\circ\text{C}$  ;  
The maximum temperature should be limited to  $260^\circ\text{C}$ .

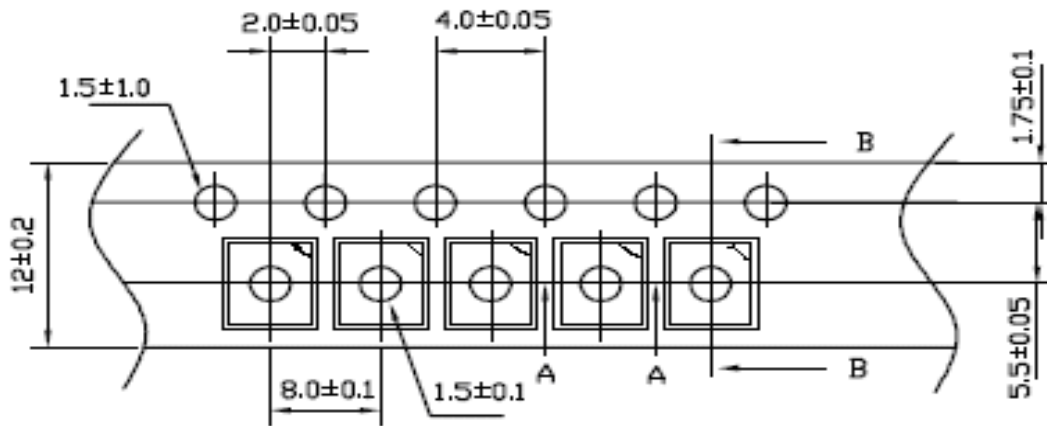


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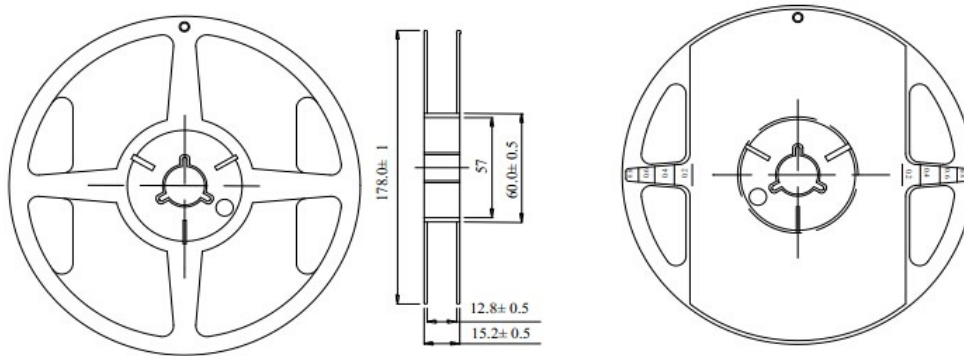
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■Tape Specifications <Units:mm>



Carrier Tape Dimensions: Loaded Quantity 1000 pcs Per Reel.

●Dimensions for Reel



Notes:

1.All dimensions are in mm, tolerance is±2.0mm unless otherwise noted.



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### ■ TEST ITEMS AND RESULTS

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld=180℃, 10sec. (Pre treatment 30℃,70%,168hrs)	2 times	0/2
Solderability (Reflow Soldering)	JE TA ED-4701 300 303	Tsld=240±5℃, 3sec. (Leader Solder)	1time over 95%	0/20
Thermal Shock	JEITA ED-4701 300 307	-40℃~100℃ 5min. 5min.	100cycles	0/20
Temperature Cycle	JEITA ED-4701 100 105	-40℃~25℃~100℃~25℃ 30min. 5m n. 30min. 5min.	100cycles	0/20
Moist re Resistance Cycle	JEITA ED-4701 200 203	25℃~65℃~-10℃ 90%RH 24hrs./1cycle	10 cycles	0/20
High Temperature Storage	JEITA ED-4701 200 201	Ta=100℃	1000 hrs	0/20
High Temperature High Humidity Storage	JEITA ED-4701 10 103	Ta=60℃, 90%RH	1000 hrs	0/20
Lo Temperature Storage	JEITA ED-4701 200 202	Ta=-40℃	1000 hrs	0/20
Steady State Operating Life		Ta=25℃, IF=20mA	1000 hrs	0/20
Steady State Operating Life of High Temperature		Ta=85℃, IF=20mA	1000 hrs	0/20
Steady Stat Operating Life of High Humidity Heat		60℃, 90%RH, IF=20mA	500 hrs	0/20
Steady State Operating Life of Low Temperature		Ta=-30℃, IF=20mA	1000 hrs	0/20
Drop		H=75cm	3 cycles	0/20
Substrate Bending	JEITA ED-4702	3mm, 5 ± 1 sec.	1 time	0/20
Stick	JEITA E -4702	5N, 10 ± 1 sec.	1 time	0/20



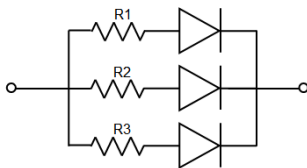
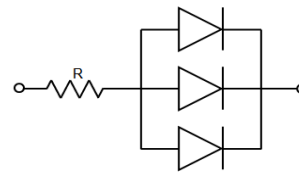
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**Cautions:****Application:**

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**

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

REF / VF:  $\pm 0.02V$ CAT / IV:  $\pm 10\%$ X / Y:  $\pm 0.005$ **Storage:**

1. Before opening original package, it is recommended to store them in the following environment:

Temperature: 5°C~30°C, Humidity: 50%RH max. When the inventory over 3 months, Should be done before treatment using dehumidification, Temperature: 60°C/12 hours.

2. After opening original package, the storage ambient for the LEDs should be in 5~30°C temperature and 65% 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.





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4. The LEDs should be used within 168hrs (7days) 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: 60°C at least 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 (Grounding impedance value 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.
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

**Soldering**

1. Soldering condition refer to the draft “Soldering Profile Suggested” on page 2.
2. Reflow soldering should not be done more than 2 times.
3. Manual soldering is only suggested on repair and rework. The maximum soldering temperature should not exceed 260°C within 3 sec. And the maximum capacity of soldering iron is 30W in power.
4. During the soldering process, do not touch the lens at high temperature.
5. After soldering, any mechanical force on the lens or any excessive vibration shall not be accepted to apply, also the circuit board shall not be bent as well.

**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 Harvatek’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.