



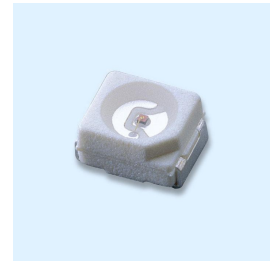
Technical Data Sheet

Top View LED

PIR67-21C/L231/TR8

Features

- Low forward voltage.
- Compatible with infrared and vapor phase reflow solder process.
- Package in 8mm tape on 7" diameter reels.
- Size of emitting area 0.370mm * 0.370mm
- Pb free
- Typical peak wavelength 740nm
- The product itself will remain within RoHS compliant version



Descriptions

- PIR67-21C/L231/TR8 is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with spherical top view lens.
- The device is spectrally matched with silicon photodiode and phototransistor.

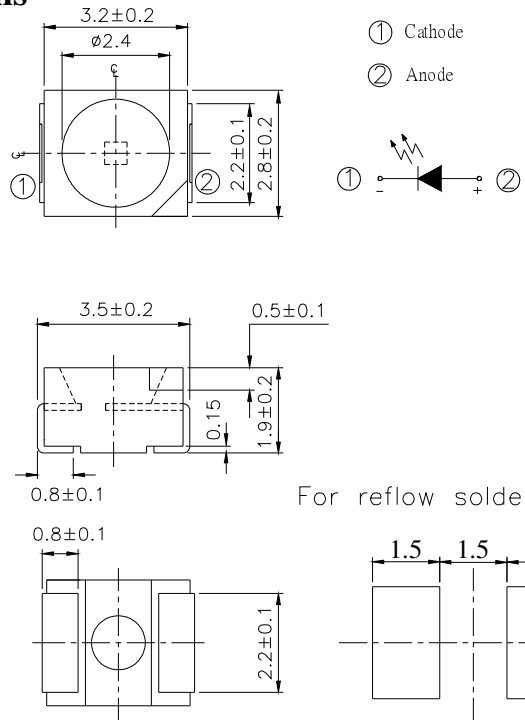
Applications

- Sensor technology
- IR free air transmission
- For drive and control circuits
- Optoelectronic switch
- Infrared applied system

Device Selection Guide

LED Part No.	Chip	Epoxy color
	Material	
PIR67-21C/L231/TR8	AlGaAs	Water clear

Package Dimensions



For reflow soldering (Proposal)

- Notes: 1.All dimensions are in millimeters
- 2.Tolerances unless dimensions ± 0.1 mm

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	100	mA
Reverse Voltage	V_R	5	V
Surge current(t=10 μ s)	I_{FSM}	1	A
Operating Temperature	T_{opr}	-40 ~ +100	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Thermal resistance junction to ambient mounted on PC-board	R_{thJA}	210	K/W
Thermal resistance junction to soldering point,mounted on metal block	R_{thJS}	260	K/W
Soldering Temperature *1	T_{sol}	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P_d	190	mW

Notes: *1: I_{FP} Conditions--Pulse Width $\leq 100 \mu$ s and Duty $\leq 1\%$.

*2:Soldering time ≤ 10 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	I _e	I _F =20mA	--	2.5	--	mW/sr
		I _F =50mA	3.0	6.0	--	
Total Radiated Power	P _o	I _F =50mA	--	18	--	mW
Peak Wavelength	λ _p	I _F =20mA	725	740	755	nm
Spectral Bandwidth	Δλ	I _F =20mA	--	30	--	nm
Forward Voltage	V _F	I _F =20mA	--	1.8	2.2	V
		I _F =50mA	--	2.0	2.8	
Reverse Current	I _R	V _R =5V	--	--	10	μA
Rise Time	t _r	I _F =50mA	--	80	--	ns
Fall Time	t _f	I _F =50mA	--	80	--	ns
Capacitance	C _o	V _R =0V, f=1MHz	--	55	--	pF
View Angle	2θ _{1/2}	I _F =20mA	--	120	--	deg
Active chip area	A	---	0.140			mm ²
Dimensions of the active chip area	L*W	---	0.370*0.370			mm*mm

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

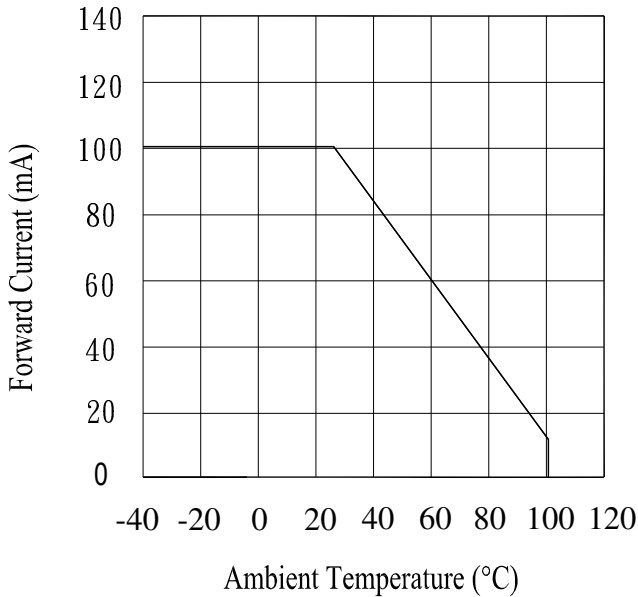


Fig.2 Spectral Distribution

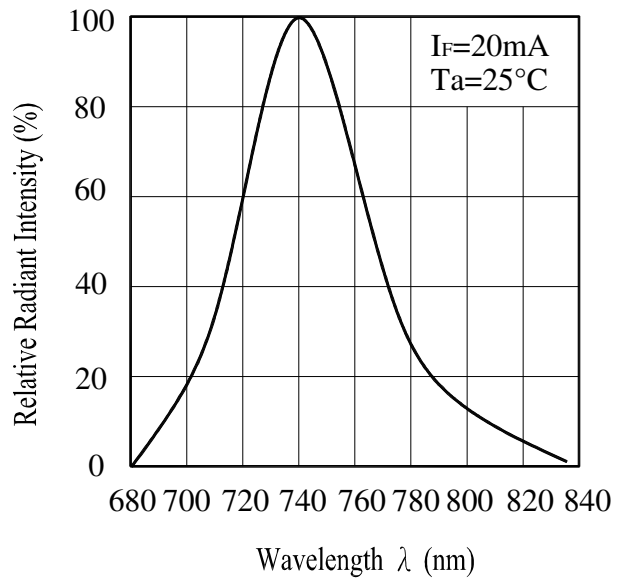


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

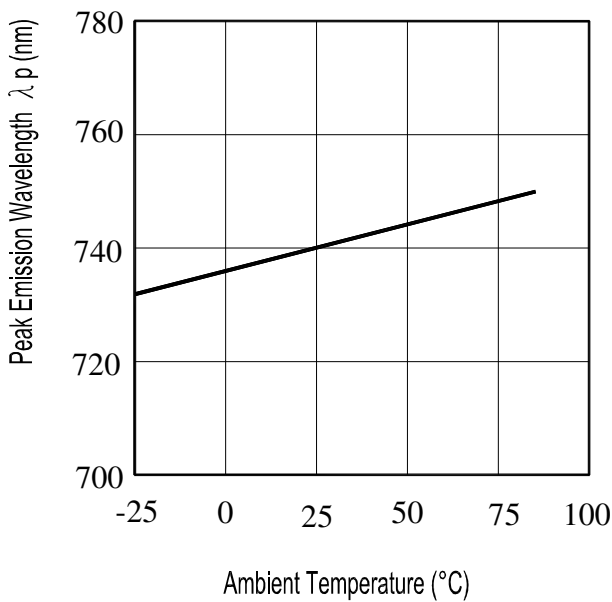
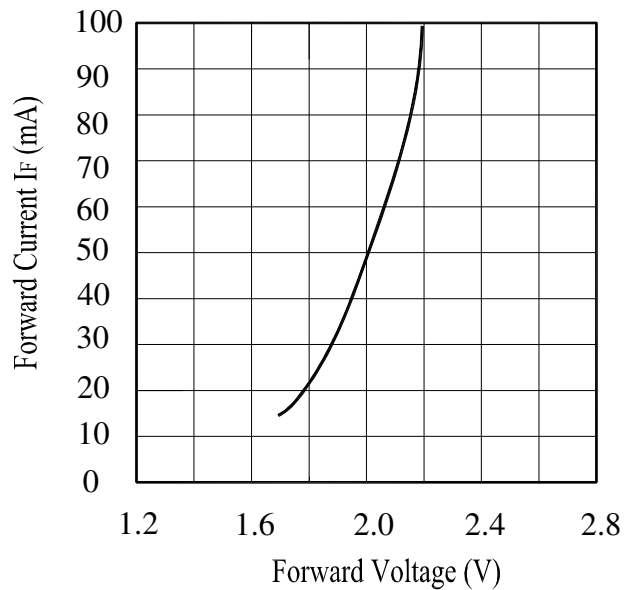
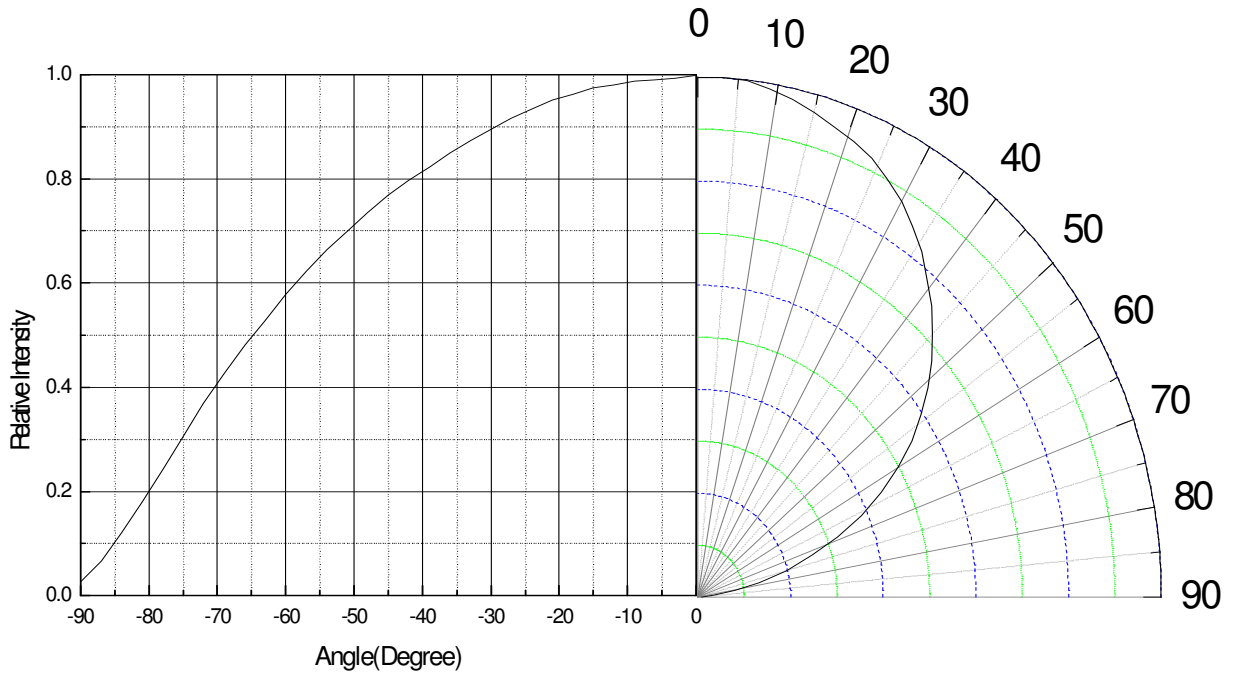


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Radiant Intensity vs. Angular Displacement



Precautions For Use

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30°C or less and 70%RH or less.

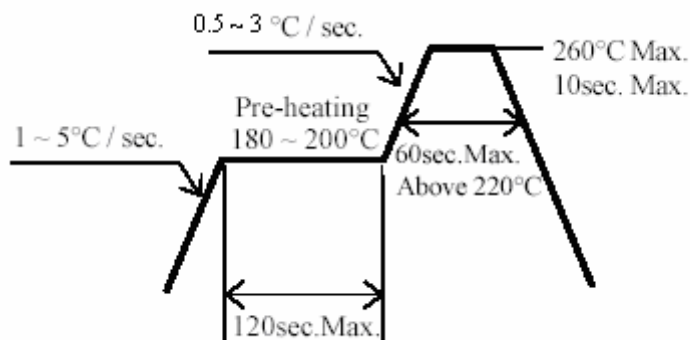
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5°C for 48 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



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

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

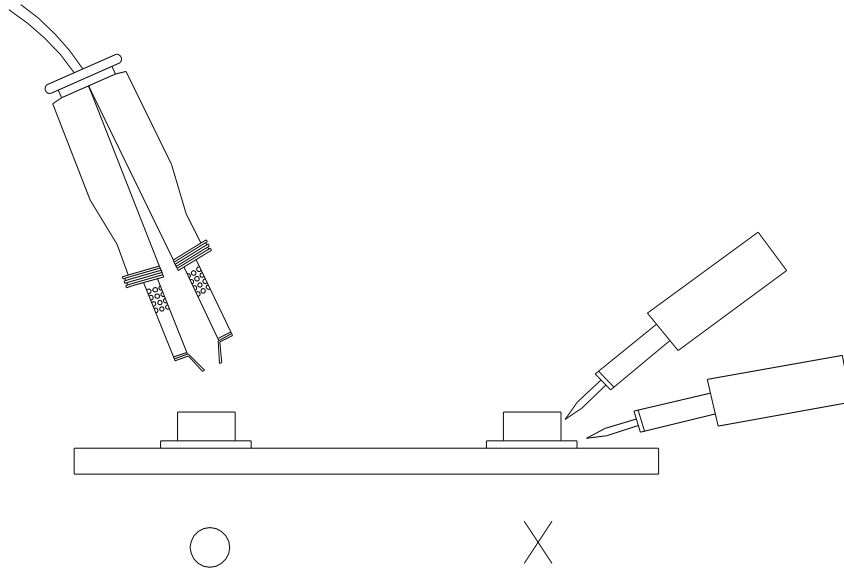
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5.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 beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Reliability Test Item And Condition

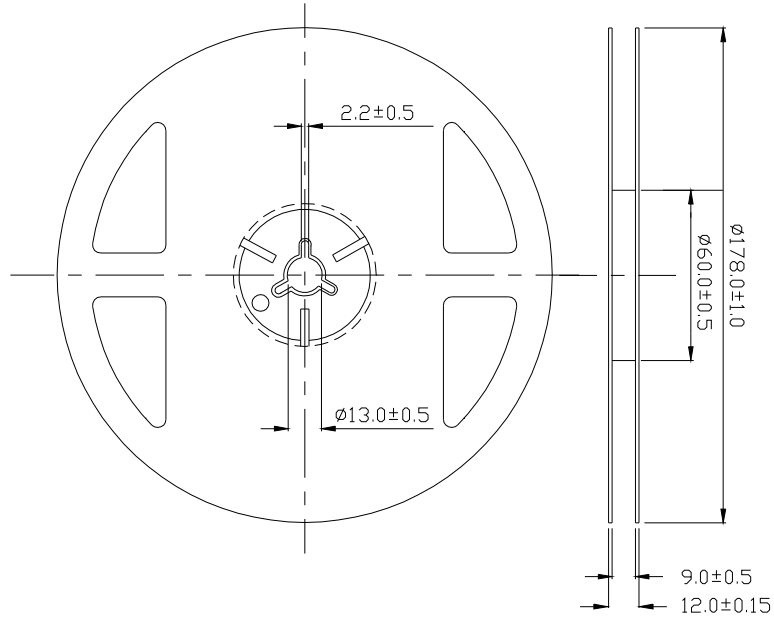
The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

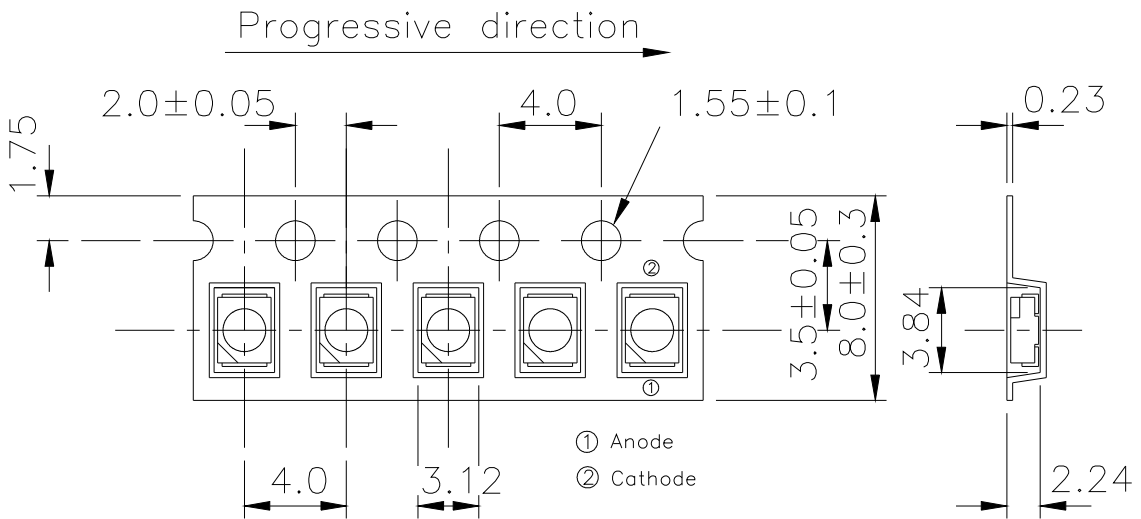
LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP. : 260°C±5°C 10secs	6Mins	22pcs	$I_R \geq U \times 2$ $I_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : 100°C 15mins ↑ 5mins ↓ L : -40°C 15mins	50Cycles	22pcs		0/1
3	Thermal Shock	H : +100°C 5mins ↑ 10secs ↓ L : -10°C 5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs		0/1
6	DC Operating Life	$I_F = 20mA$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

Package Dimensions



Taping Dimensions



TOLERANCES UNLESS DIMENSION ± 0.1
 ANGLE ± 0.5
 UNIT: mm

Unit: mm

Packing Quantity Specification

- 1.2000Pcs/1Volume , 1Volume/1Bag
- 2.10Boxes/1Carton

Label Form Specification



- CPN: Customer's Production Number
- P/N : Production Number
- QTY: Packing Quantity
- CAT: Ranks
- HUE: Peak Wavelength
- REF: Reference
- LOT No: Lot Number
- MADE IN TAIWAN: Production Place

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
3. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

EVERLIGHT ELECTRONICS CO., LTD.
Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936
Fax: 886-2267-6244, 2267-6189, 2267-6306
<http://www.everlight.com>