



## 0.8mm Height Flat Top Infrared LED

MODEL NO : HIR19-21C/L11

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### ■ Features :

- High radiant intensity
- Peak wavelength  $\lambda_p=850\text{nm}$
- View angle  $145^\circ$
- High reliability
- Small double-end package

### ■ Description :

- HIR19-21C/L11 is an infrared emitting diode in a miniature plastic SMD package. Its flat window provides a wide aperture, making it ideal for use with external optics.

### ■ Applications :

- PCB mounted infrared sensor
- Infrared source in tactile keyboard
- IR diode in low space application
- Infrared applied system
- Floppy disk drive

PART NO.	CHIP	LENS COLOR
	MATERIAL	
HIR	GaAlAs	Water Clear

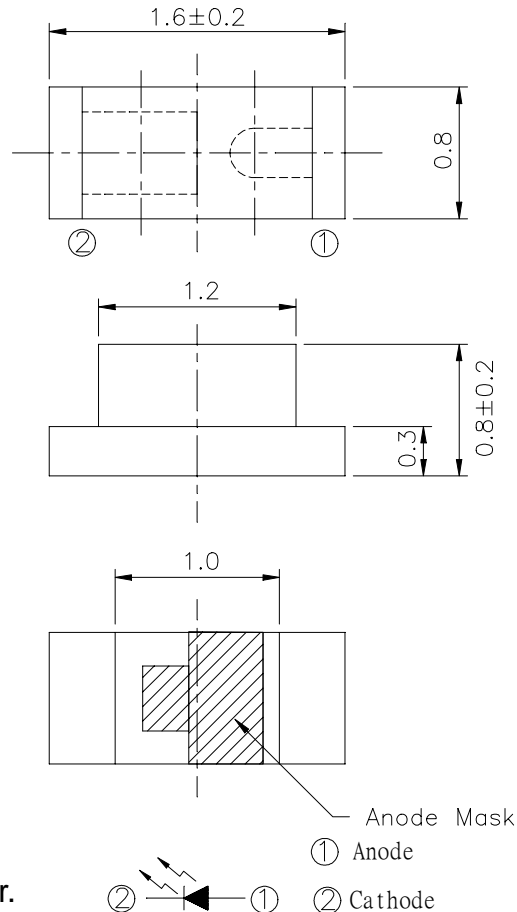
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### Package Dimensions :



### Notes :

1. All dimensions are in millimeter.
2. General tolerance:  $\pm 0.1$  mm
3. Lens color : Water Clear.
4. Above specification may be changed without notice. EVERLIGHT will reserve authority On material change for above specification.
5. 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.
6. When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERIGHT 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.



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### ■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit	Notice
Continuous Forward Current	$I_F$	65	mA	
Peak Forward Current Pulse width=100 $\mu$ s, Duty cycle=1%	$I_{FP}$	1.0	A	
Reverse Voltage	$V_R$	5	V	
Operating Temperature	Topr	-25 to+85	°C	
Storage Temperature	Tstg	-40 to+85	°C	
Soldering Temperature	Tsol	260	°C	
Power Dissipation at(or below) 25°C Free Air Temperature	Pd	130	mW	

### ■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	$E_e$	0.2	0.8	---	mW/sr	$I_F=20\text{mA}$
		---	3.5	---		$I_F=100\text{mA}, t_p=100\ \mu\text{s}, t_p/T=0.01$
		---	45	---		$I_F=1\text{A}, t_p=100\ \mu\text{s}, t_p/T=0.01$
Peak Wavelength	$\lambda_p$	---	850	---	nm	$I_F=20\text{mA}$
Spectral Bandwidth	$\Delta\lambda$	---	45	---	nm	$I_F=20\text{mA}$
Forward Voltage	$V_F$	---	1.45	1.65	V	$I_F=20\text{mA}$
		---	1.80	2.40		$I_F=100\text{mA}, t_p=100\ \mu\text{s}, t_p/T=0.01$
		---	4.10	5.25		$I_F=1\text{A}, t_p=100\ \mu\text{s}, t_p/T=0.01$
Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$
View Angle	$2\theta_{1/2}$	---	145	---	deg	$I_F=20\text{mA}$



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### ■ Typical Electrical/Optical/Characteristics Curves

Fig. 1 Forward Current vs. Ambient Temperature

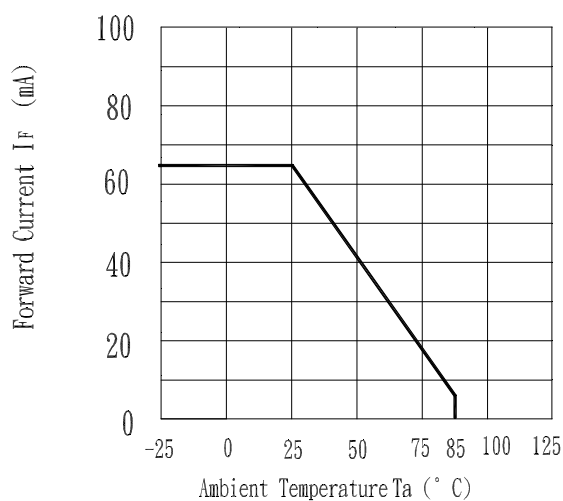


Fig. 2 Spectral Distribution

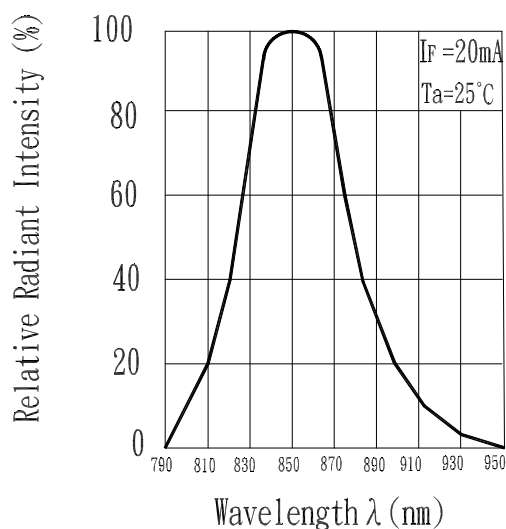


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

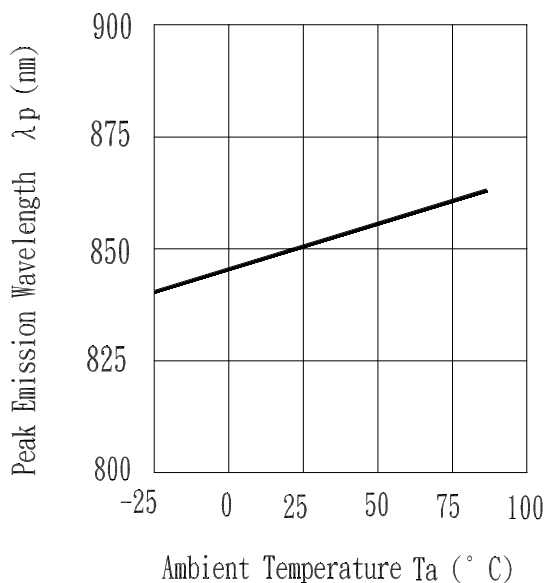
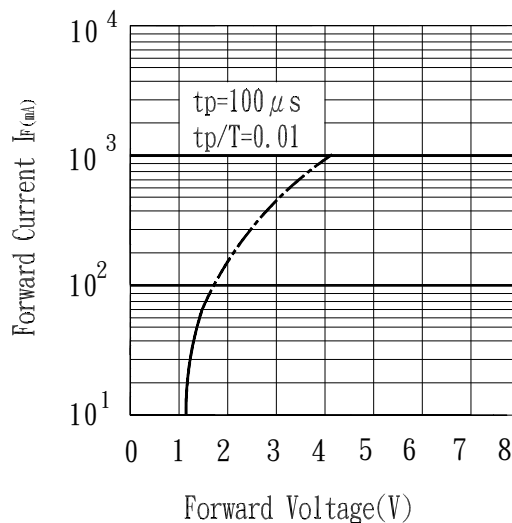


Fig. 4 Forward Current vs. Forward Voltage





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Fig. 5 Relative Intensity vs. Forward Current

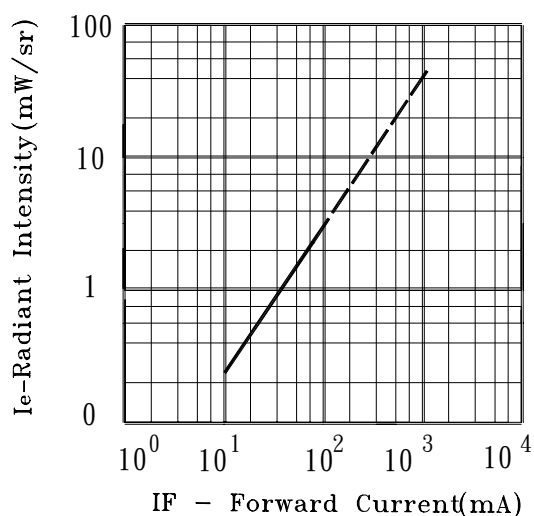


Fig. 6 Relative Radiant Intensity vs. Angular Displacement

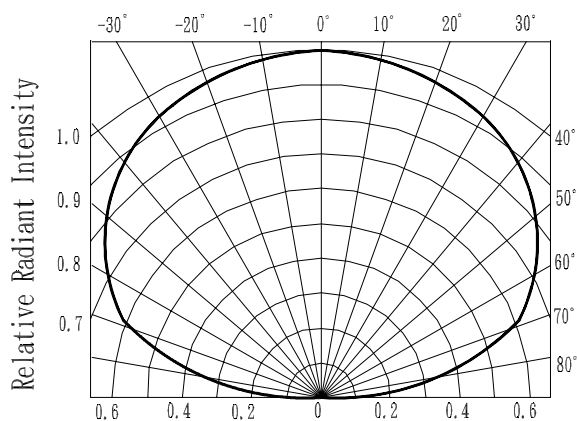


Fig. 7 Relative Intensity vs. Ambient Temperature ( $^\circ\text{C}$ )

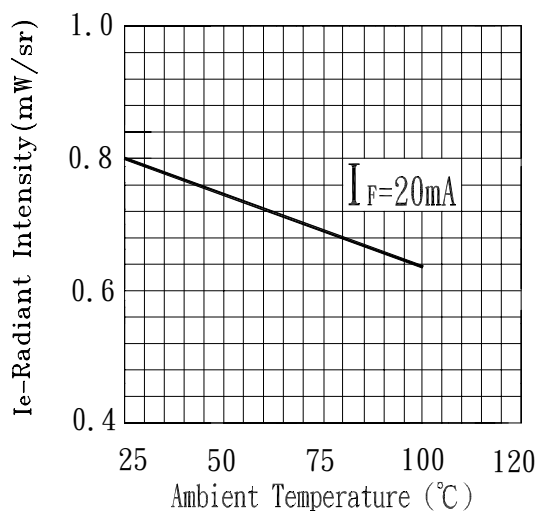
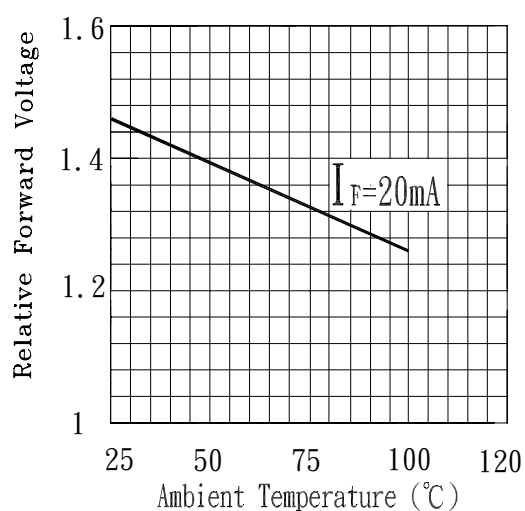


Fig. 8 Forward Current vs. Ambient Temperature ( $^\circ\text{C}$ )





# EVERLIGHT ELECTRONICS CO., LTD.

DEVICE NUMBER : DIH-192-027      REV : 1.1  
 ECN : \_\_\_\_\_      PAGE : 6/8

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### ■ 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 Size	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP : 240°C ± 5 °C 5 secs	6 mins	22 pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C      30 mins  L : -55°C      30 mins	50 cycles	22 pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$	0/1
3	Thermal Shock	H : +100°C      5 mins  L : -10°C      5 mins	50 cycles	22 pcs	U :Upper specification limit L :Lower specification limit	0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 pcs		0/1
6	DC Operating Life	$I_F=20mA$	1000 hrs	22 pcs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 pcs		0/1



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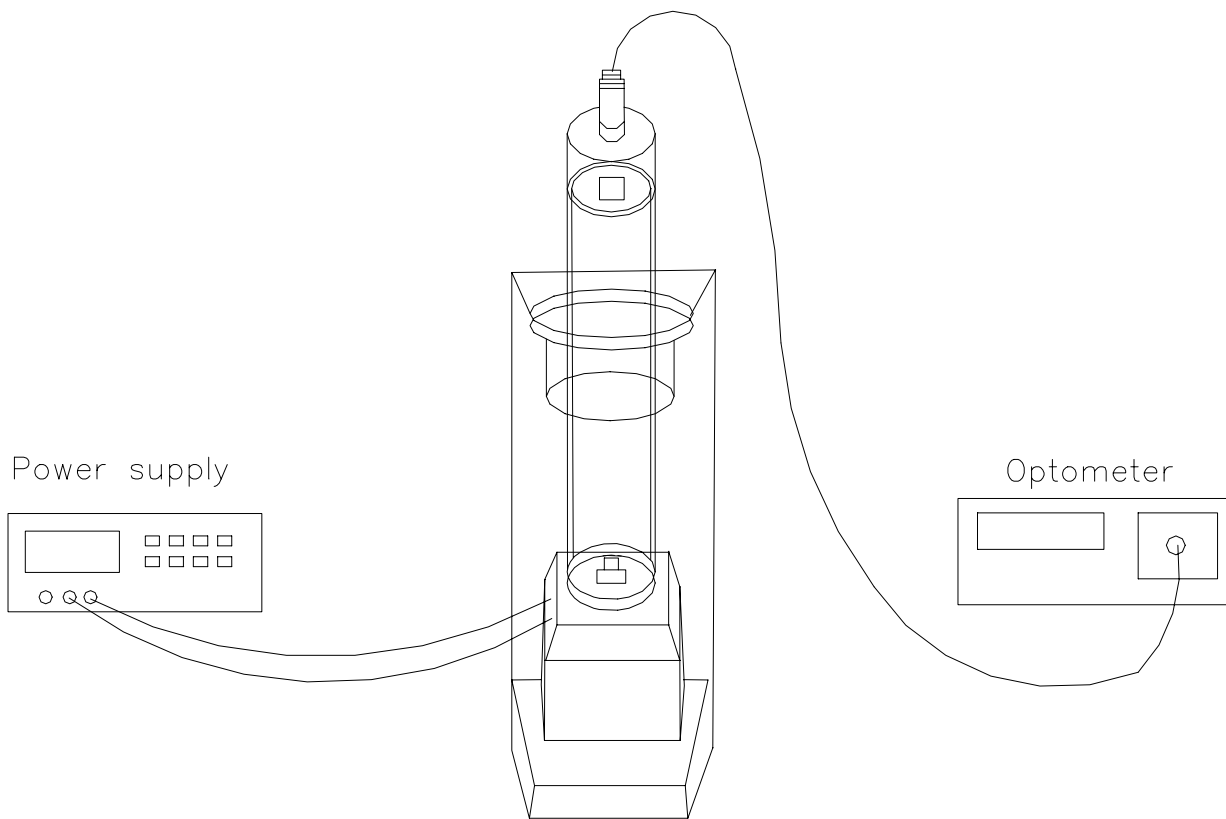
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■ **Test Method For Power :**

Condition :  $I_f=20$  mA

Test Item : Radiant Intensity

Unit : mW/sr

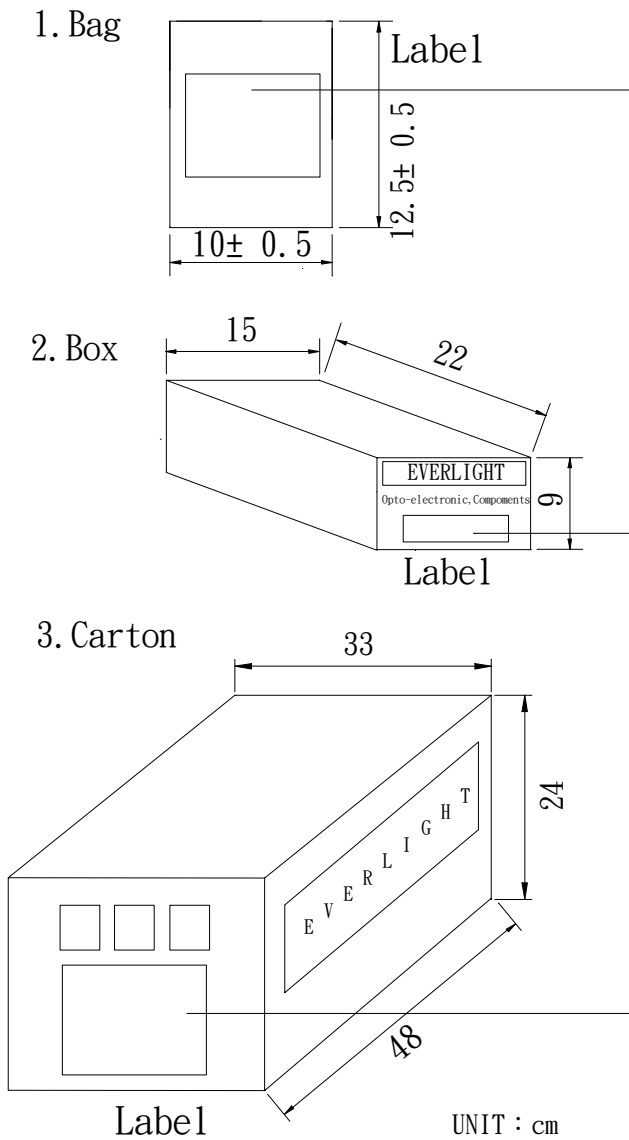




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**■ Packing Specifications**



CPN:  
P/N:  
HIR19-21C/L11

QTY:                    CAT:  
                              HUE:  
                              REF:

LOT NO:

MADE IN TAIWAN

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

**■ Packing Quantity Specification**

- 1.1000 Pcs/1Bag , 20 Bags/1Box
- 2.10Boxes/1Carton