

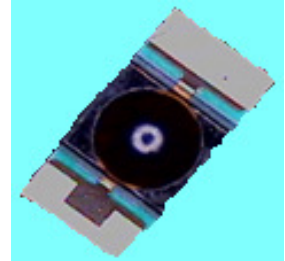
## Technical Data Sheet

### 1.6mm Round Subminiature Chip LED

#### HIR26-21B/L423/CT

#### Features

- Small double-end package
- Low forward voltage
- Good spectral matching to Si photo detector
- Package in 8mm tape on 7" diameter reel.
- Pb free
- The product itself will remain within RoHS compliant version.



#### Descriptions

- HIR26-21B/L423/CT 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

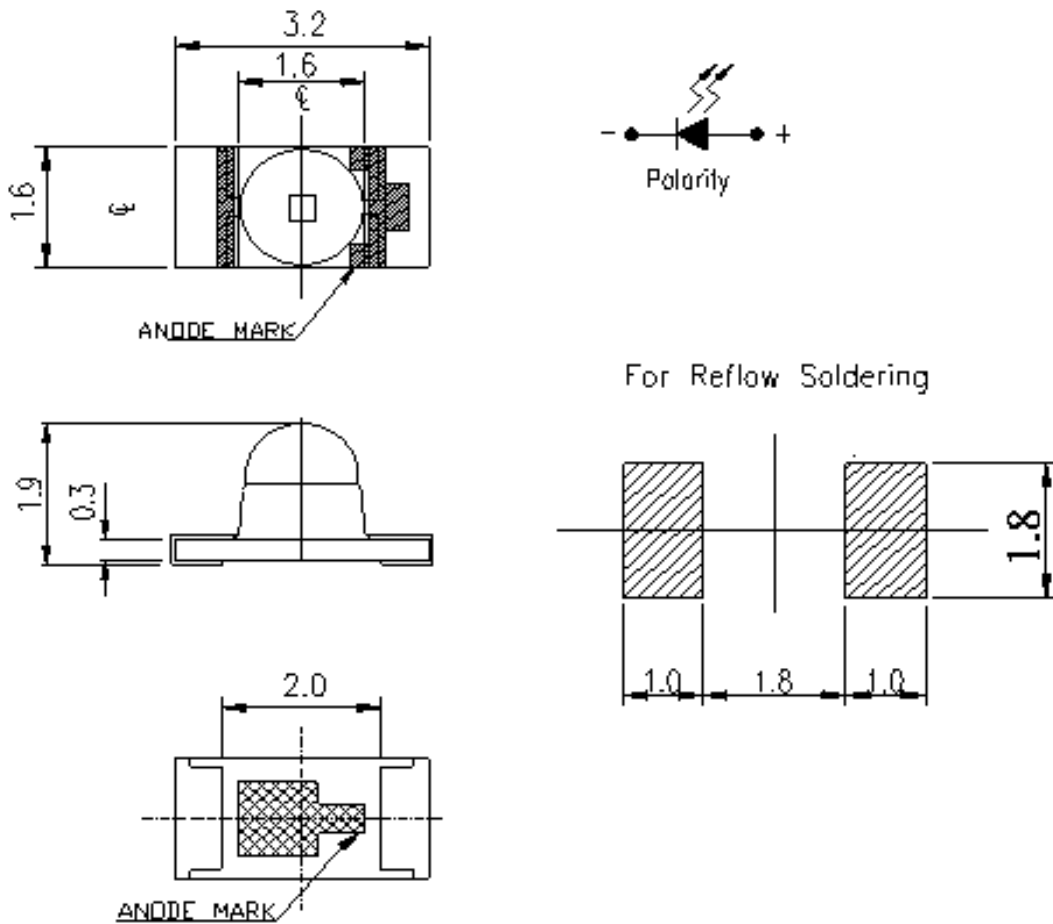
#### Applications

- PCB mounted infrared sensor
- Infrared remote control units with high power requirement
- Scanner
- Infrared applied system

#### Device Selection Guide

Part No.	Chip	Resin Color
	Material	
HIR	GaAlAs	Black

### Package Dimensions



- Notes:**
1. All dimensions are in millimeters
  2. Tolerances unless dimensions  $\pm 0.1$  mm

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I <sub>F</sub>	50	mA
Peak Forward Current *1	I <sub>FP</sub>	500	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Soldering Temperature *2	T <sub>sol</sub>	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	P <sub>d</sub>	130	mW

**Notes:** \*1:I<sub>FP</sub> Conditions--Pulse Width ≤ 100 μs and Duty ≤ 1%.

\*2:Soldering time ≤ 5 seconds.

### Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Radiant Intensity	I <sub>e</sub>	I <sub>F</sub> =20mA	10	20	--	mW /sr
		I <sub>F</sub> =70mA Pulse Width=100 μs	--	75	--	
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> =20mA	--	850	--	nm
Spectral Bandwidth	Δλ	I <sub>F</sub> =20mA	--	30	--	nm
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	1.20	1.45	1.70	V
		I <sub>F</sub> =70mA Pulse Width=100 μs	1.40	1.60	2.00	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	--	--	10	μA
View Angle	2θ 1/2	I <sub>F</sub> =20mA	--	20	--	deg

### Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

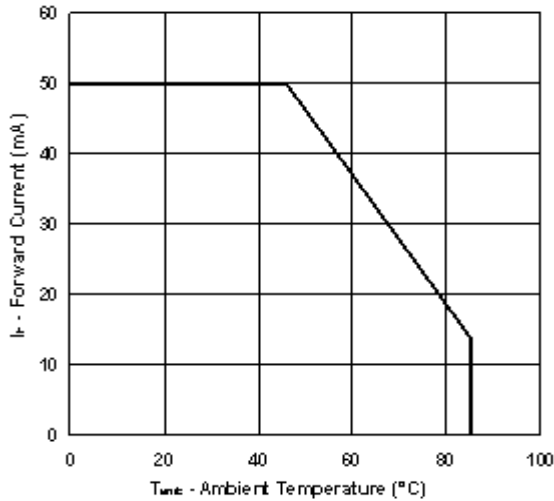


Fig.2 Spectral Distribution

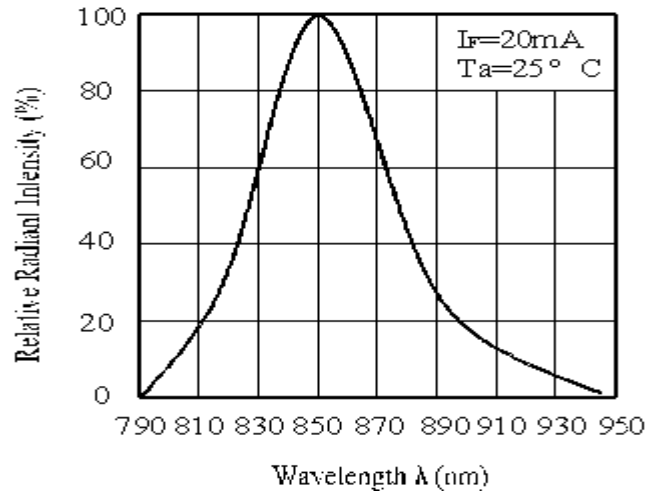


Fig.3 Peak Emission Wavelength Ambient Temperature

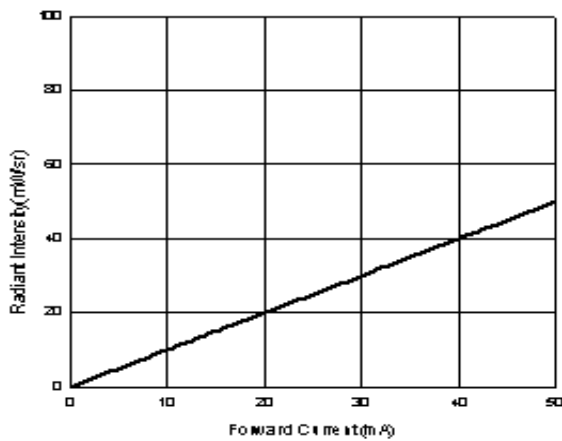
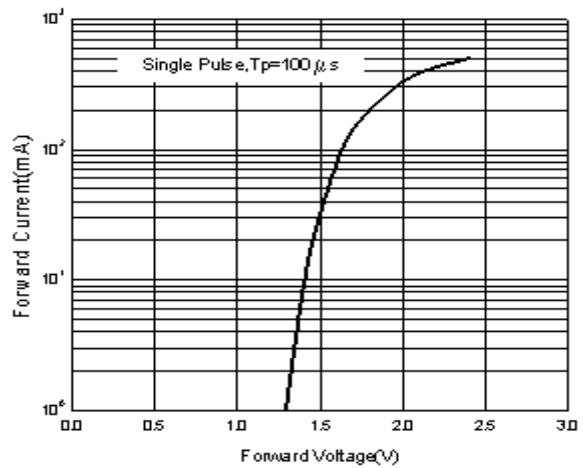
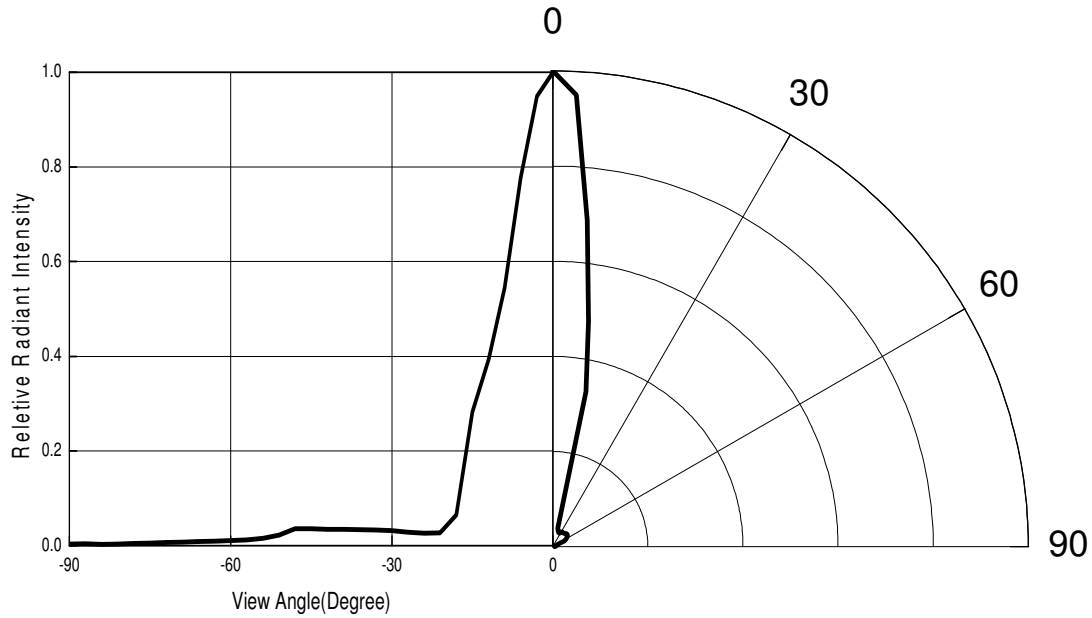


Fig.4 Forward Current vs. Forward Voltage



### 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 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less.

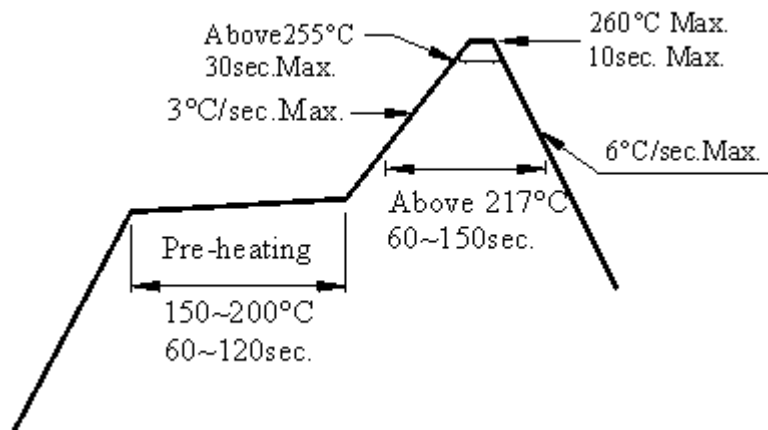
If unused LEDs remain, it should be stored in moisture proof packages.

2.4 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 24 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.

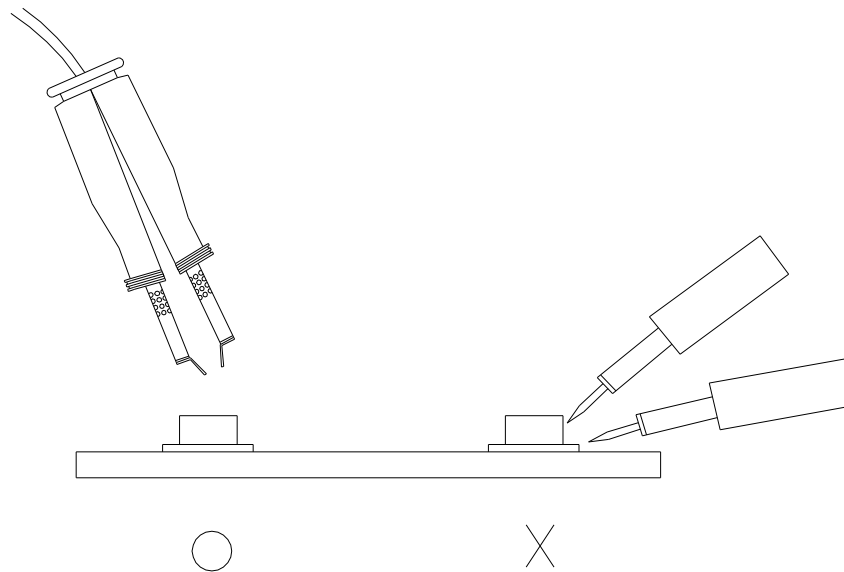
3.4 After soldering, do not warp the circuit board.

### 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.

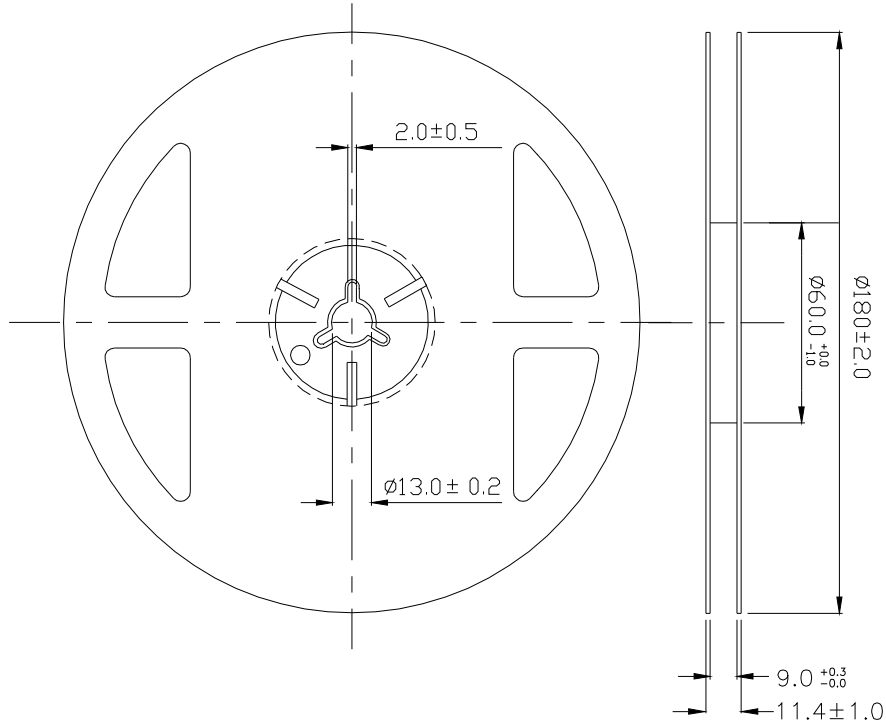
Confidence level : 90%

LTPD : 10%

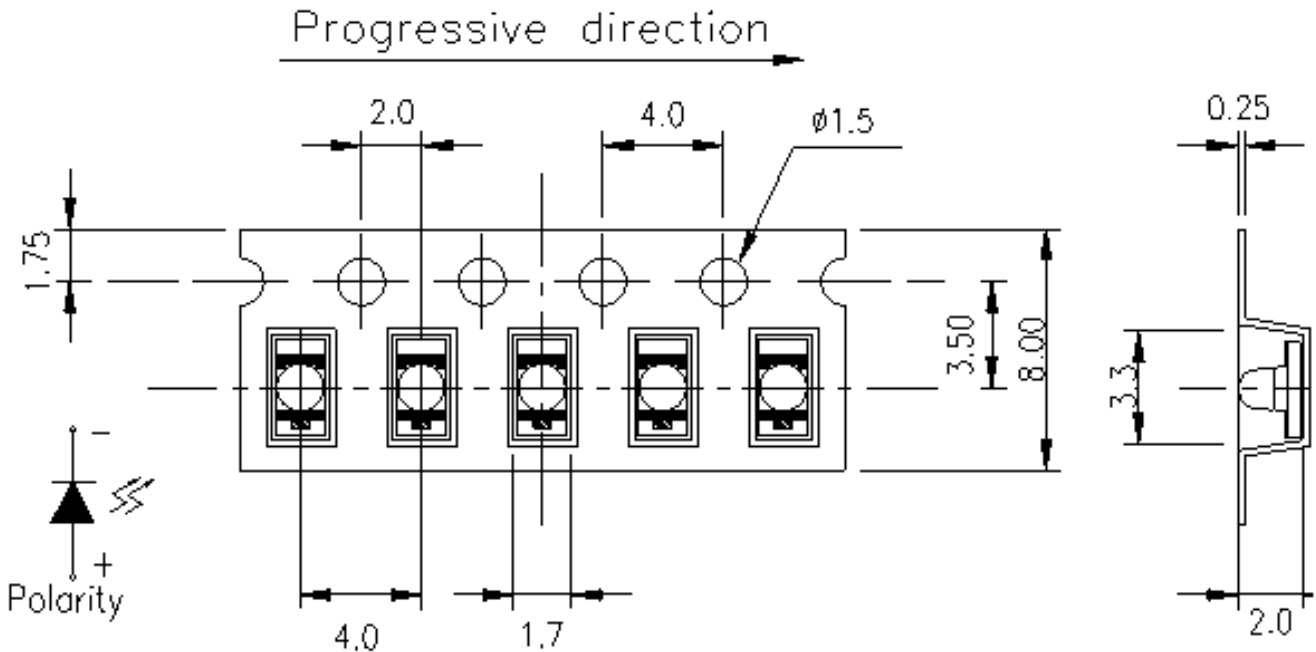
NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW Soldering	TEMP. : 260°C±5°C Max:10 secs	6Mins	22pcs	$I_R \geq U \times 2$ $I_E \leq L \times 0.8$ $V_F \geq U \times 1.2$  U : Upper Specification Limit  L : Lower Specification Limit	0/1
2	Temperature Cycle	H : +100°C    15mins ↓                    5mins L : -40°C    15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H :+100°C    5mins ↓                    10secs L :-10°C    5mins	300Cycles	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	$I_F=20mA/25^\circ C$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1



### Reel Dimensions



### Carrier Tape Dimensions: Loaded quantity 1500 PCS per reel :



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Unit = mm

### Label Form Specification

The diagram shows a rectangular label form with the following elements:

- Top left: A circle containing the letters "Pb".
- Top center: A rectangular box containing the word "EVERLIGHT".
- Top right: An empty circle.
- Below "EVERLIGHT": The text "CPN : XXXXXXXXXXXXXXXX" followed by a barcode and "XXXXXXXXXXXXX".
- Below the first barcode: The text "QTY : XXX" followed by a barcode.
- Below the second barcode: The text "LOT NO : XXXXXXXXXXXX" followed by a barcode.
- Below the third barcode: The text "Reference : XXXXXXXX" followed by a barcode.
- Bottom center: The text "MADE IN TAIWAN".
- Right side: A rectangular box containing the text "RoHS".
- Bottom right: The text "CAT : XXX", "HUE : XXX", and "REF : XXX".

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

EF: 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.

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