

Spec. No.: 660/905/940

Issued Date: 2022-10-11

# SPECIFICATION

Model Name: Multi Emitters 660/905/940

Model NO. : HL5060-4P010B

Customer No.:

Prepared by: Wengxin

Approved by: Xie Zong Wu

Customer approved by: \_\_\_\_\_



Add: 7F, Bldg B, JinKe Industrial Park WuHe Road, LongHua District,  
Shenzhen, Guangdong Prov., China PostCode: 518110

Tel: 86-0755-28147404

Fax: 86-0755-28149249

E-mail: [xwjma@163.com](mailto:xwjma@163.com)

<http://www.szwhaley.com/>

# Multi Emitters

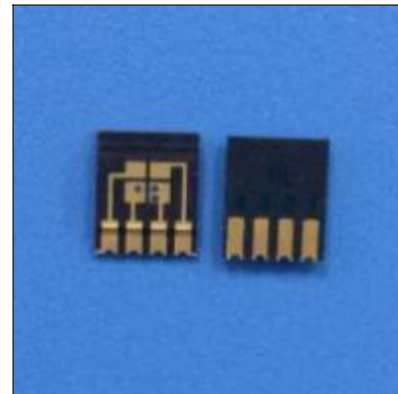
## HL5060-4P010B (660/905/940)

### ■Features

- Lead frame molded packages
- Two and three or four leads designs
- Bi-wavelengths or triple wavelengths LEDs
- Matching detector response

### ■Applications

- SPO2
- Blood analysis
- Medical instrumentation
- Radiometric instruments



Name	Model	RED	IR	IR	Package
Multi Emitters	HL5060-4P010B	660 nm	905nm	940nm	4-Pin, COB

### ■Absolute Maximum Ratings

(Ta= 25°C)

Parameter	Symbol	Max.	Unit	Note
Power Dissipation	P <sub>d</sub>	60	mW	---
Forward Current	I <sub>F</sub>	20	mA	---
Peak Forward Current	I <sub>FP</sub>	100	mA	1/10 Duty cycle, 0.1ms pulse width
Reverse Voltage	V <sub>R</sub>	5	V	---
Operating Temperature	T <sub>opr</sub>	-25~+85	°C	---
Storage Temperature	T <sub>Stg</sub>	-40~+100	°C	---
Soldering Temperature	T <sub>S01</sub>	260	°C	260°C for 3 Seconds

### ■Electrical/Optical Characteristics

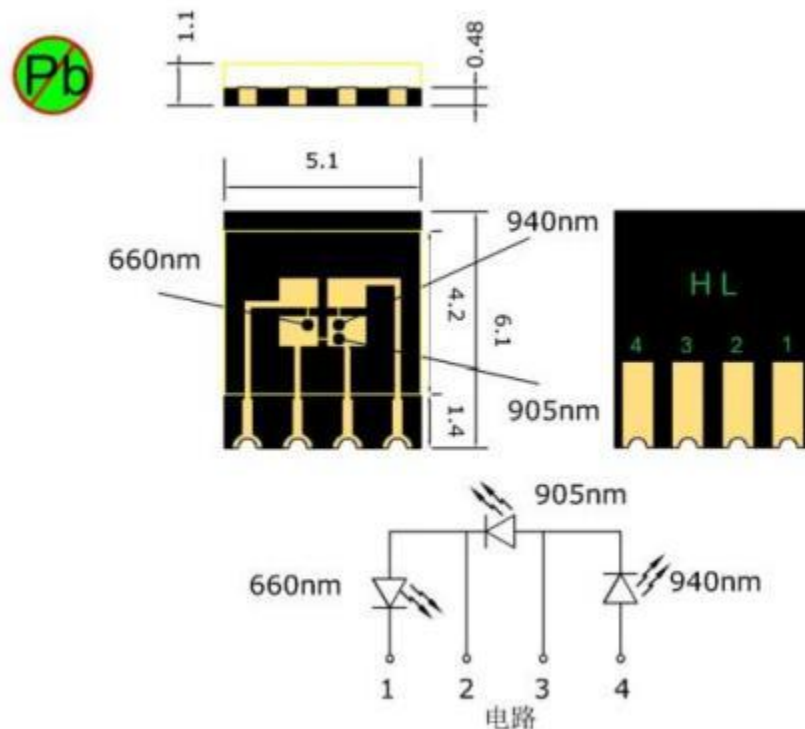
(Ta= 25°C)

Parameter	Symbol	Min.			Typ.			Max.			Units	Test Conditions
		660	905	940	660	905	940	660	905	940		
Forward Voltage	V <sub>F</sub>	--	--	--	1.95	1.4	1.3	2.4	1.75	1.45	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	--	--	--	--	--	--	10	10	10	uA	V <sub>R</sub> =5V
Radiant Power	P <sub>o</sub>	4	1.5	1.7	9	2	2	11	4.0	3.0	mW	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	--	--	--	660	895	940	--	--	--	nm	I <sub>F</sub> =20mA
Spectral Line Half-width	Δλ	--	--	--	20	70	50	--	--	--	nm	I <sub>F</sub> =20mA

## Multi Emitters

HL5060-4P010B (660/905/940)

### ■ Dimension:



**Notes:** 1.All dimensions are in millimeters

2. Tolerances unless dimensions  $\pm 0.1\text{mm}$

### ■ Storage and Soldering Condition

Please read the following notes before using the product: 使用本产品前请阅读以下说明:

#### 1. Over-current-proof 过电流保护

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

客户必须用电阻器保护; 否则微小的电压变化会引起较大的电流变化 (将会发生烧坏)。

#### 2. Storage 储存

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

2.2 在产品准备使用前不要打开防潮袋

2.3 Before opening the package, the LEDs should be kept at 30°C or less and 85% RH or less. 打开包装前, LED 应保持在 30°C 以下或小于 85%湿度

2.4 The LEDs should be used within a year. 未拆包的 LED 应在一年内使用.

2.5 After opening the package, the LEDs should be kept at 30°C or less and 65% RH or less. 打开包装后, LED 应保持温度 30°C 以下或湿度小于等于 65%。

2.6 The LEDs should be used within 4 weeks after opening the package. 打开包装后,LED 应在 4 周内使用 If the moisture adsorbent material (silica gel) has fabled away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. 如果干燥剂挥发完或 LED 已经超过存储时间, 应采用下列条件进行烘烤处理。

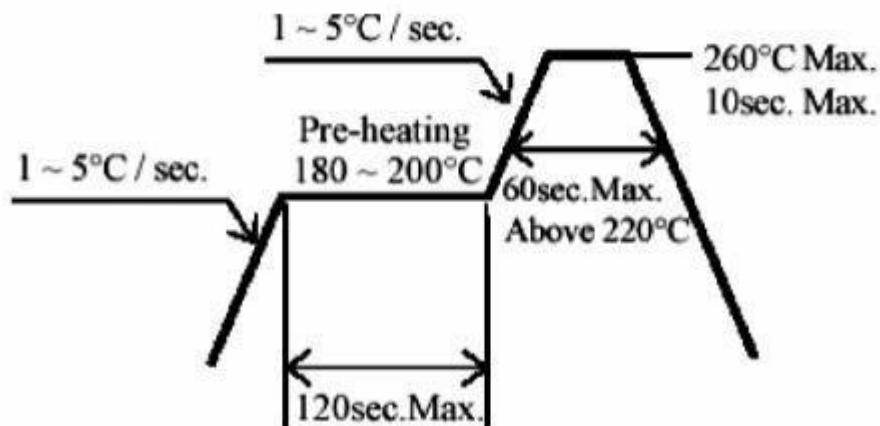
Baking treatment: 65 $\pm$ 5°C for 24 hours. 烘烤处理 65 $\pm$ 5°C 24 小时

#### 3. Soldering Condition 焊接条件

## Multi Emitters

### HL5060-4P010B (660/905/940)

#### 3.1 Pb-free solder temperature profile 无铅焊料温度分布



3.2 When soldering, do not put stress on the LEDs during heating. 焊接时，加热期间不要对接压 LED.

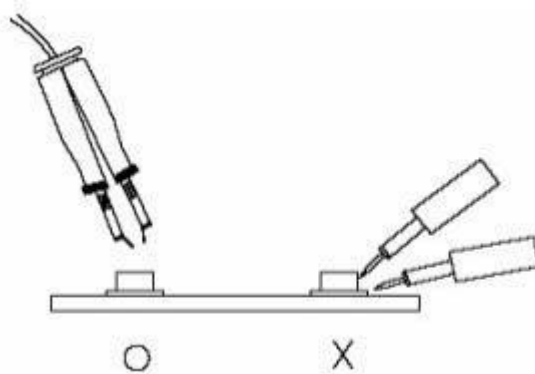
3.3 After soldering, do not warp the circuit board. 焊接后，不要扭曲电路板

#### 4. Soldering Iron 烙铁焊接

Each terminal is to go to the tip of soldering iron temperature less than 310°C for 2 seconds. 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. 烙铁温度小于 310°C，焊接时间少于 2 秒，留出两秒以上的间隔，对每个端子进行焊接。请小心焊接，因为产品的损坏通常在手焊时开始。

#### 5. Repairing 返工

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. LED 已焊接完成后不应返工。当必须要返工时，应使用双头烙铁（如下图）。应事先确认 LED 的特性是否会因修复而损坏或不会被损坏。



## Multi Emitters

**HL5060-4P010B (660/905/940)**

### 修订记录

项次	日期	内 容	版本号
1	2019- 10-24	新发行	Ver.01
2	2022- 10- 11	修订存储及焊接条件	Ver.02