

Spec. No.: H5060-3PM20B

Issued Date: 2023-06-30

SPECIFICATION

Model Name: Full-wave Band Detector

Model NO. : HL5060-3PM20B

Customer No.:

Prepared by: Cai Yemin

Approved by: Xie Zong Wu

Customer approved by: _____



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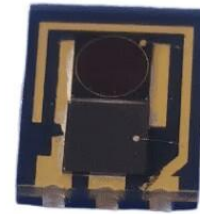
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Detector

HL5060-3PM20B

■Features

- Full-wave range of response400~1700nm.
- Short switching time
- Inductive far-infrared receiver tube
- Low dark current
- Low operating bias voltage



■Applications

- SPO2
- IR Remote controls of various equipment
- Back facet laser power monitoring

Model No.	Active Area		Package
	PD	MPD	
HL5060-3PM20B	2.3*2.3mm	2000umound optical window	3-Pin, COB

■Absolute Maximum Ratings at Ta=25℃

Parameter 参数	symbol 符号	Max.最大值	unit 单位	Note 备注
Operating Temperature	T _{opr}	-25~+85	℃	---
Storage Temperature	T _{Stg}	-40~+100	℃	---
Soldering Temperature	T _{S01}	≤260	℃	260℃ for 5 Seconds (260 度小于等于 5 秒)
Reverse Voltage	V _R	-20	V	
Forward Current	I _F	10	mA	
Reverse Current	I _R	5	mA	
Optical Power	P _{in}	10	mW	

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HL5060-3PM20B

■Electrical / Optical Characteristics at TA=25℃ (PD)

Parameter(参数)	Symbol	Min.	Typ.	Max.	Unit s	Test Conditions
	符号	最小值	规格值	最大值	单位	测试条件
正向电压 Forward Voltage	V_F	0.5	--	1.3	V	IF=20mA,H=0
反向击穿 Reverse Breakdown Voltage	V_{BR}	35	--	--	V	IR=100uA,H=0
反向暗电流 Reverse Dark Current	I_D	--	--	20	nA	VR=10V,H=0
亮电流 Light current	I_L	--	135	--	uA	VR=5V,H as 1mw/cm2@940nm
峰波 Peak Sensing Wavelength	λ_p	--	940	--	nm	--
光谱响应范围 Spectral Bandwidth	$\Lambda_{0.5}$	400	--	1100	nm	--
电容 Junction Capacitance	C_J	--	5	--	pF	VR=3V,H=0,F=1MHz

Note(1):Parallel Light of 1000lux illumination is applied by a tungsten lamp of 2856k

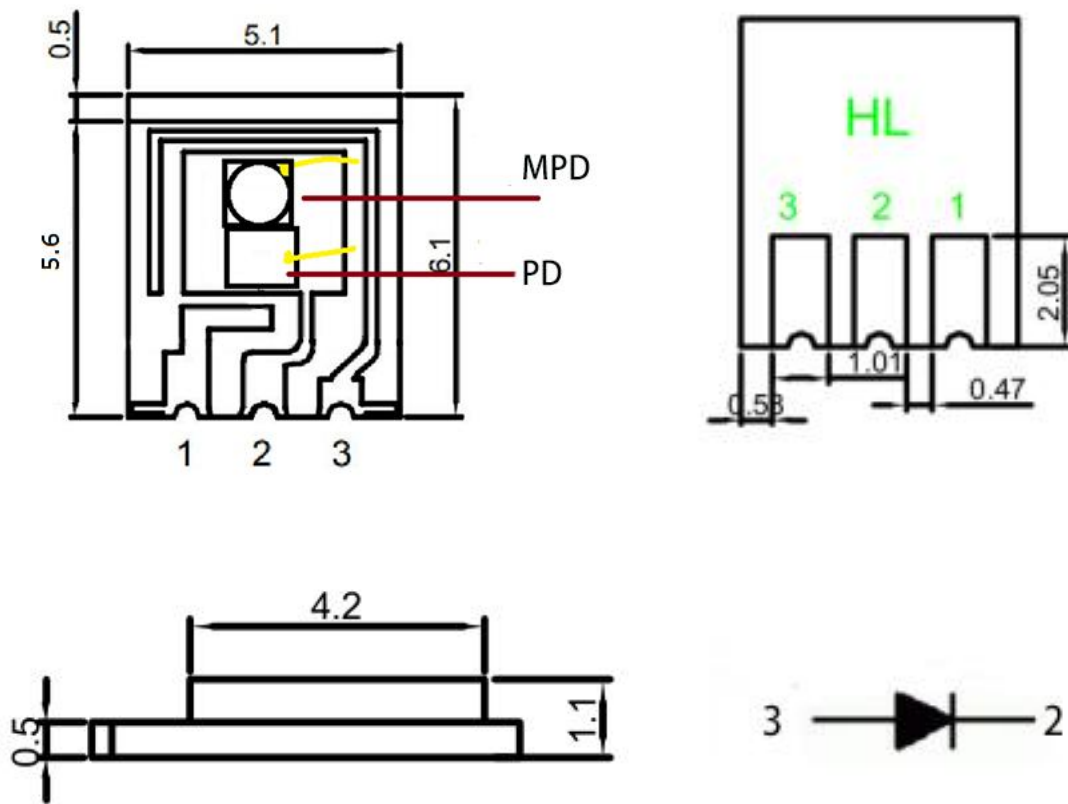
■Electrical / Optical Characteristics at TA=25℃ (MPD)

Parameter(参数)	Symbol	Min.	Typ.	Max.	Units	Test Conditions
	符号	最小值	规格值	最大值	单位	测试条件
光谱响应范围 Response Spectrum	λ	900	--	1700	nm	
正向电压 Forward voltage	V_F	0.3	0.4	0.8	V	1mA
暗电流 Dark Curent	I_d	-	-2	-20	nA	-5V
反向击穿 Reverse Breakdown Voltage	V_{BR}	-20	-38	-60	V	-10μA
响应度 Responsivity	Re	0.9	1.0	-	A/W	$\lambda = 1310\text{nm}$
		0.95	1.05	-		$\lambda = 1550\text{nm}$
电容 Capacitance	C_j	-	200	240	pF	-5V, 1MHz
线性响应范围 Linear response range	LRR	-20	-	7	dBm	1550nm,0V, 5%
等效噪声功率 NEP	NEP		3×10^{-14}		W/Hz ^{1/2}	-5V,1550nm

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■Dimension:

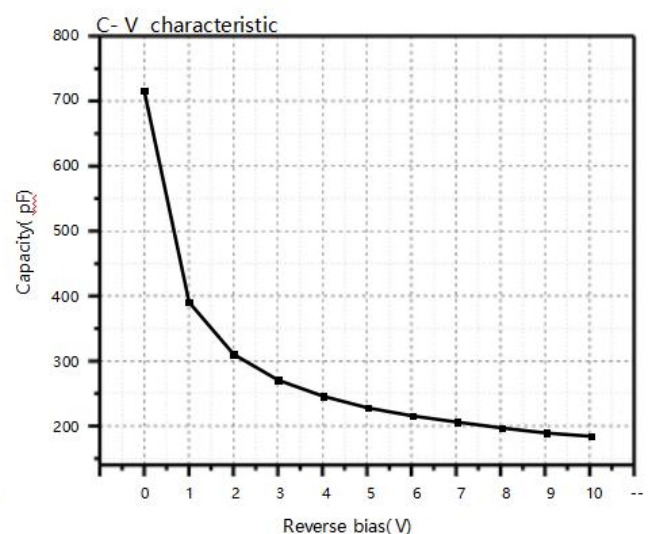
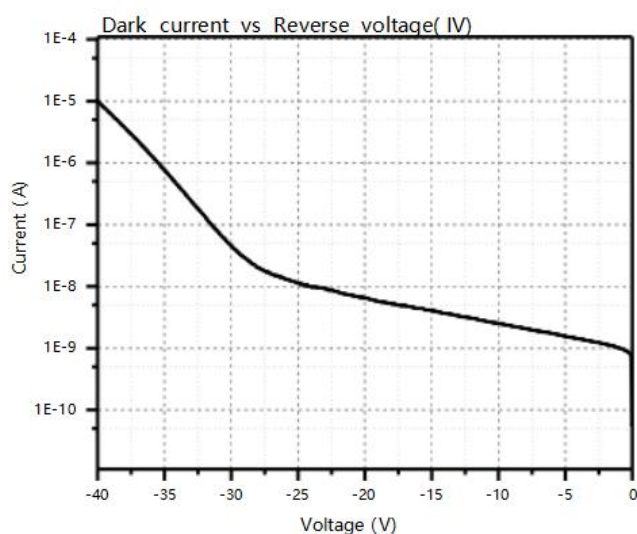
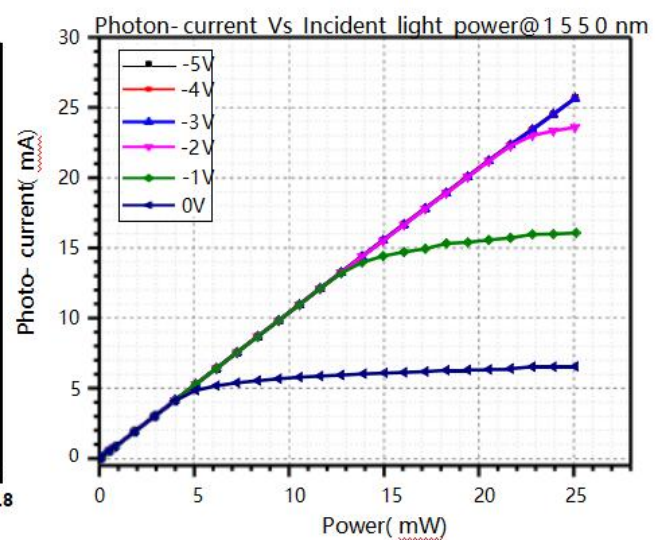
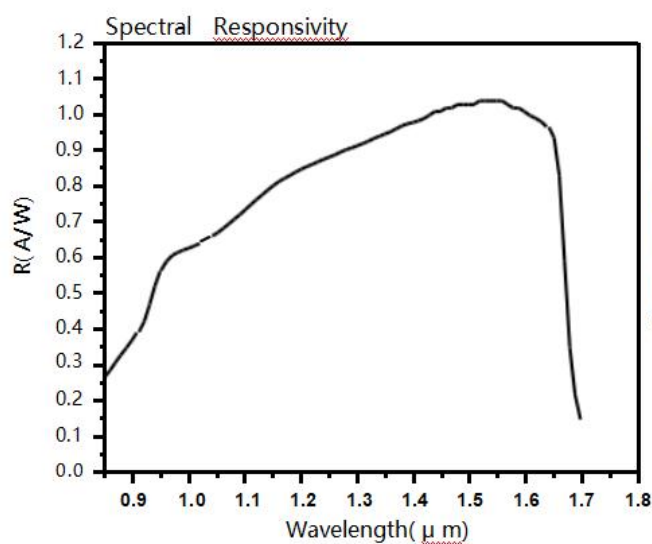
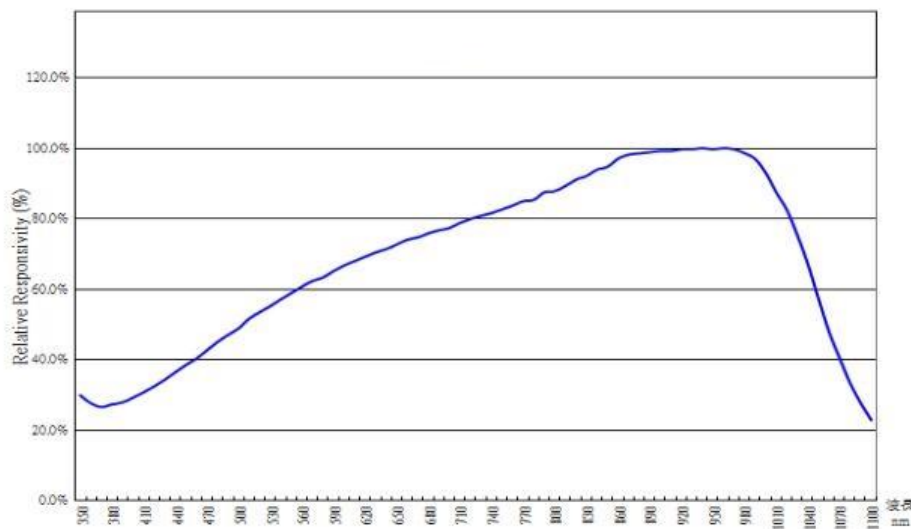


- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions $\pm 0.1\text{mm}$

Detector

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■ 响应度与波长相关性分析/Responsivity(Re) Vs. Wavelength Analysis
测试条件 Test conduction: $V_R=5V$



■ 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。

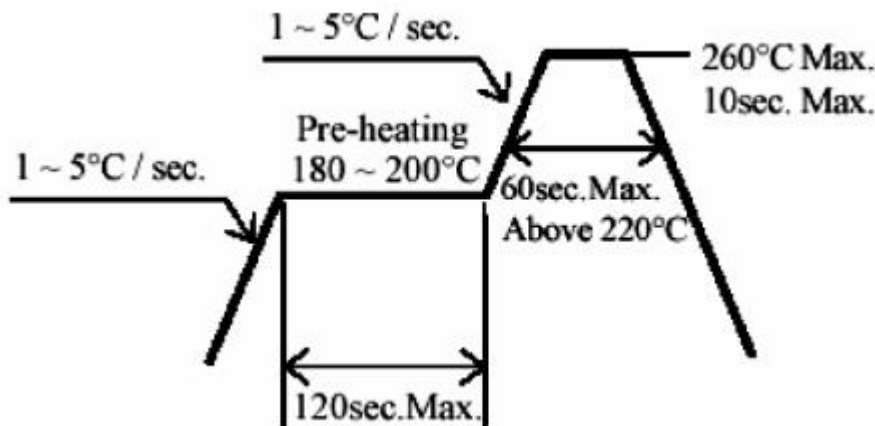
2.5 After opening the package, the LEDs should be kept at 30°C or less and 65% RH or less. 打开包装后，LED 应保持在温度 30°C 以下或湿度小于等于 65%。

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±5°C for 24 hours. 烘烤处理 65±5°C 24 小时

3. Soldering Condition 焊接条件

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，加热期间不要对按压 LED.

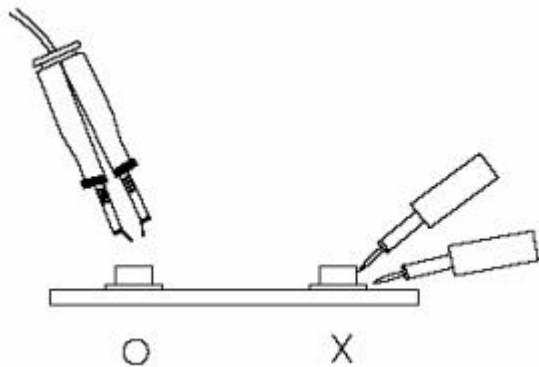
3.3 After soldering, do not warp the circuit board. 焊接后，不要扭曲电路板

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。



修订记录

项次	日期	内 容	版本号
1	2023-06-30	新发行	Ver.01