

Spec. No.: HL5030-2PE64B

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# SPECIFICATION

Model Name: Detector

Model NO. : HL5030-2PE64B

Customer No.:

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## Detector

## HL5030-2PE64B

### ■Description

- The HL5030-2PE64B is a silicon PIN Photodiode has two active areas (Photodiodes) integrated in one chip

### ■Features

- Especially suitable for applications of 940nm.
- Short switching time

### ■Applications

- SPO2
- Optical module
- IR Remote controls of various equipment
- Automatic focusing of camera
- Sun sensor for the car air conditioner



Name	Model No.	Chip Size	Active Area	Package
Detector	HL5030-2PE64B	3.2mm×1.6mm	2.8mm×1.4mm	2-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 <sub>opr</sub>	-25~+85	℃	---
Storage Temperature	T <sub>Stg</sub>	-40~+100	℃	---
Soldering Temperature	TS01	≤260	℃	260℃ for 5 Seconds (260 度小于等于 5 秒)
Electrostatic Discharge Threshold (HBM)	ESD	4000	V	

## Detector

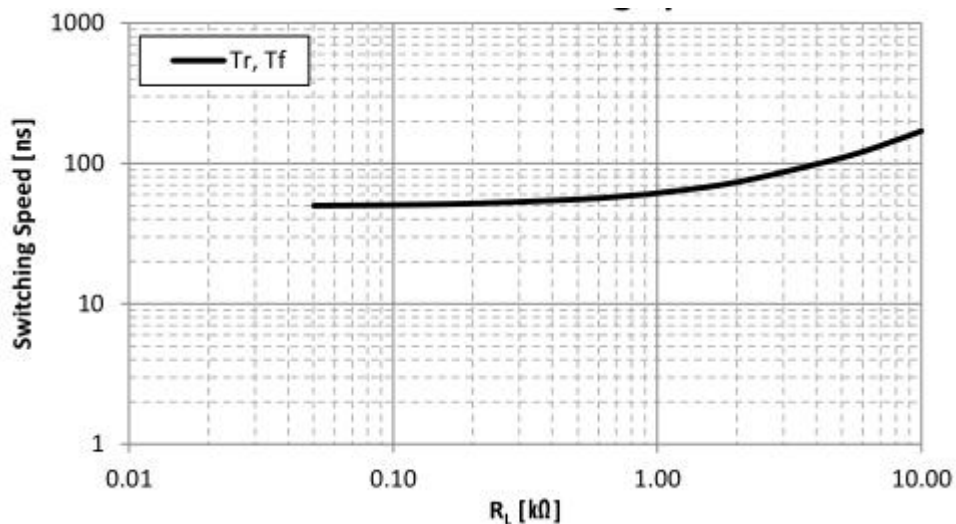
### HL5030-2PE64B

#### ■Electrical / Optical Characteristics at TA=25℃

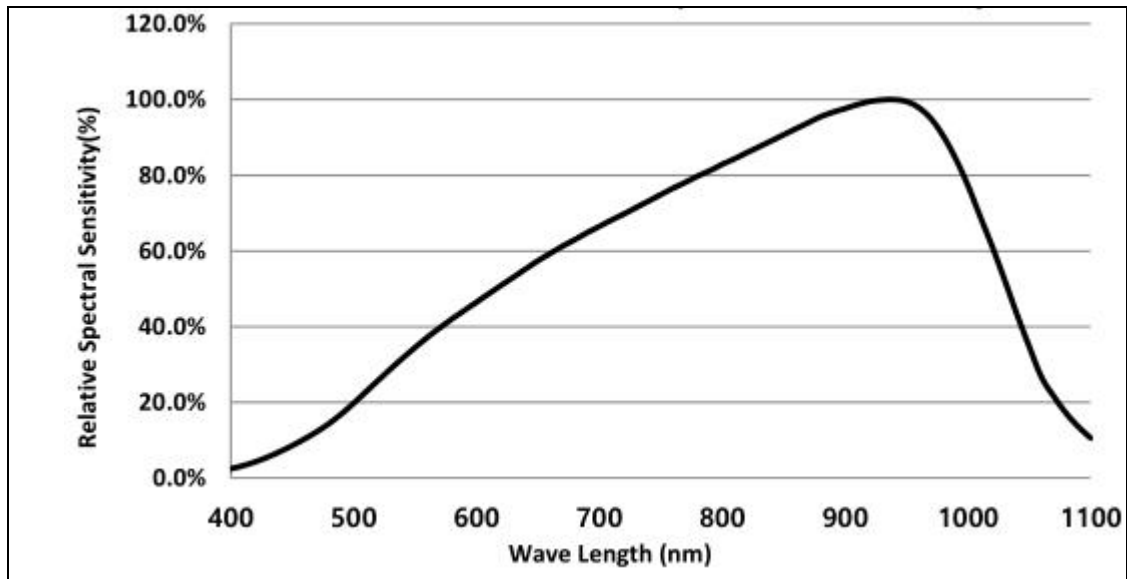
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Open Circuit Voltage	Vop	Note(1)	0.3	0.32		V
Short Circuit Current	Isc	Note(1)	16	20		uA
Spectrum Sensitivity	$\lambda$		430~1100			nm
Peak Sensing Wavelength	$\lambda_p$			940		nm
Forward Voltage	VF	I <sub>F</sub> =10mA	0.5		1.3	v
Dark Current	I <sub>D</sub>	V <sub>R</sub> =10V		5	10	nA
Reverse Breakdown Voltage	BVR	I <sub>R</sub> =10uA	30			V
Half Angle	$\Delta\theta$		-	±65	-	Deg.

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

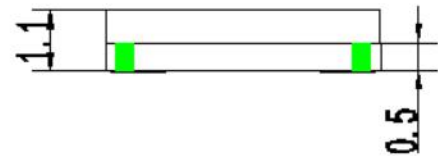
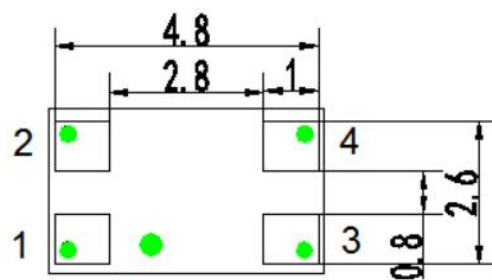
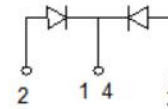
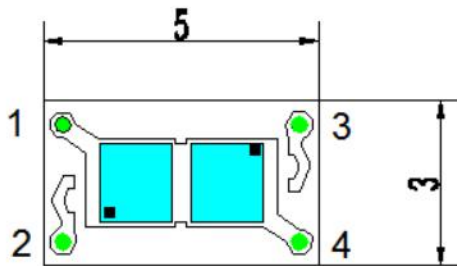
#### ■Switching Speed



### ■Relative Spectral Sensitivity

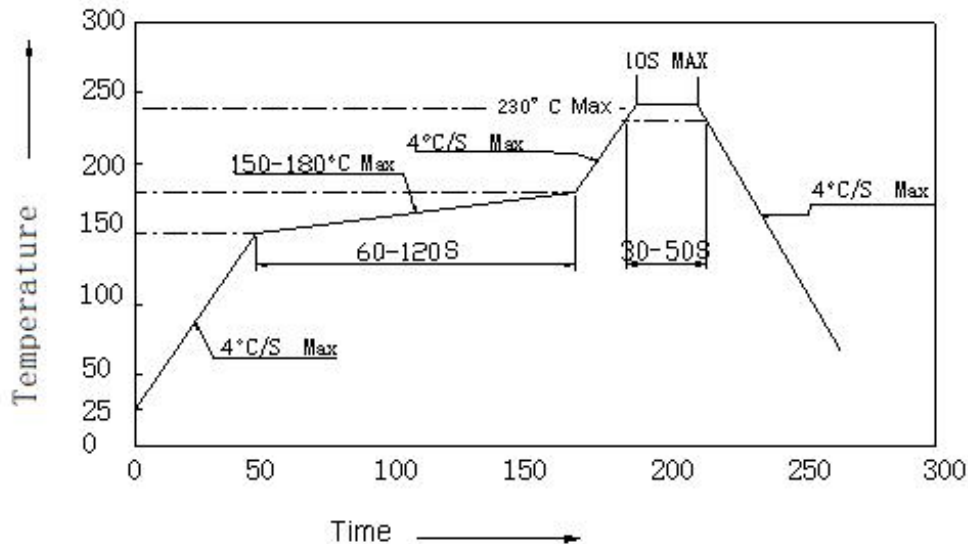


### ■Dimension:



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

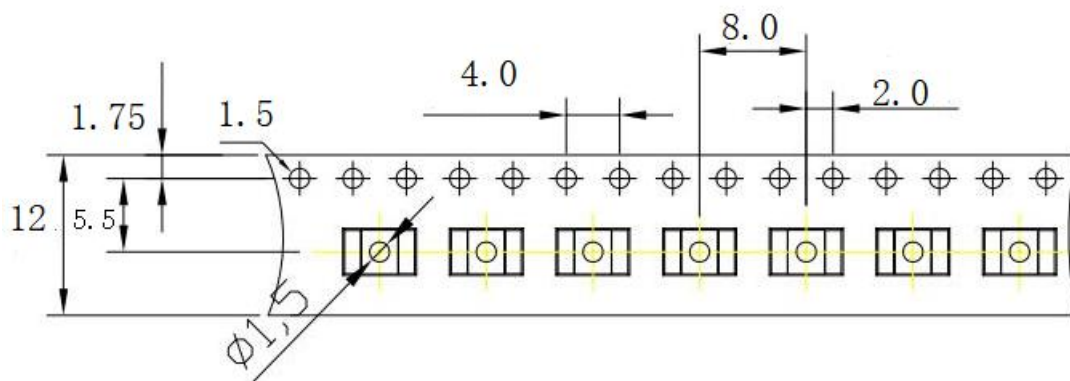
### ■ Reflow soldering profile for lead-free SMT process



#### NOTES:

1. We recommend the reflow temperature  $245^{\circ}\text{C}(\pm 5)$ . The maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
2. Don't cause stress too the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 time or less.

### ■ Tape Specifications (Units : mm) 1000PCS/REEL



### ■潮敏等级：LEVEL 2a

防潮等级	包装拆封后车间寿命	
	时间	条件
LEVEL1	无限制	$\leq 30^{\circ}\text{C}/85\%\text{RH}$
LEVEL2	1年	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL2a	4周	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL3	168小时	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL4	72小时	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL5	48小时	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL5a	24小时	$\leq 30^{\circ}\text{C}/60\%\text{RH}$
LEVEL6	取出即用	$\leq 30^{\circ}\text{C}/60\%\text{RH}$

### ■Reliability Test

#### 1.测试项目和结果:

类别	试验项目	参考标准	试验条件	持续时间	取样数	损坏数量
环境试验	温度循环	JEITA ED-4701 100 105	$-40^{\circ}\text{C} \rightarrow 25^{\circ}\text{C} \rightarrow 100^{\circ}\text{C} \rightarrow 25^{\circ}\text{C}$ 30 分钟 5 分钟 30 分钟 5 分钟	循环 100 回合	100	0/100
	冷热冲击	MIL-STD-202G	$-40^{\circ}\text{C} \longleftrightarrow 100^{\circ}\text{C}$ 15 分钟 15 分钟	循环 300 回合	100	0/100
	高湿热循环	JEITA ED-4701 200 203	$30^{\circ}\text{C} \longleftrightarrow 65^{\circ}\text{C}$ RH=90% 24 小时/1 回合	循环 50 回合	100	0/100
	高温储存	JEITA ED-4701 200 201	Ta=100°C	1000 小时	100	0/100
	低温储存	JEITA ED-4701 200 202	Ta=-40°C	1000 小时	100	0/100
	高温高湿储存	JEITA ED-4701 100 103	Ta=60°C RH=90%	1000 小时	100	0/100
寿命试验	常温寿命试验	--	Ta=25°C IF=20mA(R)	1000 小时	100	0/100
	高温高湿寿命试验	--	Ta=60°C RH=90% IF=20mA(R)	1000 小时	100	0/100
	低温寿命试验	--	Ta=-30°C IF=20mA(R)	1000 小时	100	0/100
破坏性试验	耐焊性	JEITA ED-4701 300 302	Tsld=260±5°C,10 秒离胶体 3mm 距离	焊接一次	20	0/20
	可焊性	JEITA ED-4701 300 303	Tsld=235±5°C,5 秒 使用助焊剂	焊接一次	20	0/20
静电	静电放电试验	JEITA ED-4701 300 304	人体放电模式 1000V	正反向各 3 次	10	0/10
机械试验	振动试验	JEITA ED-4701 400 403	20G 20-2000HZ 4 分钟 X,Y,Z 三个方向	每个方向循环 4 次	10	0/10
	跌落试验	--	75 厘米	3 次	10	0/10

### 2.判定标准:

项目	标示	测试条件	判定标准
正向电压	VF	IF=20mA	初始值±10%
反压电流	IR	VR=5V	≤10uA
可焊性	--	--	浸锡面积达 95%以上
振动试验	--	IF=20mA	没有死灯及明显损坏
跌落试验	--	IF=20mA	没有死灯及明显损坏

备注:RH:环境湿度; Ta:环境温度; Tslid:锡液温度; IF:正向电流; VR:反向电压

### ■ Storage and Soldering Condition

1. Do not open moisture proofs bag before the products are ready to use
2. Before opening the package, the LEDs should be kept at 30℃ or less and 90% RH or less.
3. The LEDs should be used within a year.
4. After opening the package, the LEDs should be kept at 30℃ or less and 70% RH or less.
5. The LEDs should be used within four weeks after opening the package.
6. 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. Baking treatment: 60±5℃ for 24 hours.
7. When soldering, do not put stress on the LEDs during heating.
8. After soldering, do not warp the circuit board
9. Each terminal is to go to the tip of soldering iron temperature less than 260℃ for 5 seconds within once in less than the soldering iron capacity 25W. Leave tow 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.