Heye Materials
衡 业 新 材

衡业新材料科技（苏州）有限公司

Visible/Solar-blind Ultraviolet thin film sensors
可见光/太阳能盲的紫外线传感器

Applications 应用

UV exposure control for photolithographic processing 光刻过程中的 UV 检测

Monitor of UV initiated curing processes UV 治疗过程中的监控

Detection of UV leakage in industrial working environment 工业 UV 泄露探测

Ozone and pollutant monitors 臭氧和污染气体监测

Flame sensing (fire safety equipment) 火焰探测

Combustion control (industrial boilers) 燃烧过程控制

Laboratory research equipment for biological sciences and dermatology 生物科学和皮肤学仪器

Lamp and exposure control of UV sterilizers 紫外线消毒器的 UV 探测

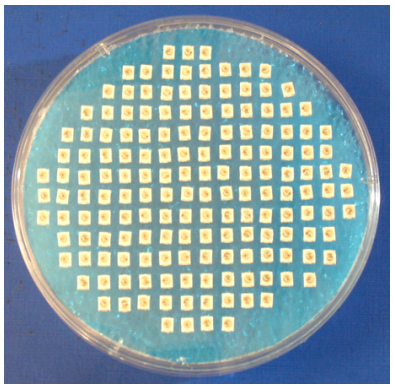
UV sensors for watches and personal monitor 手表、手机等物品的紫外传感

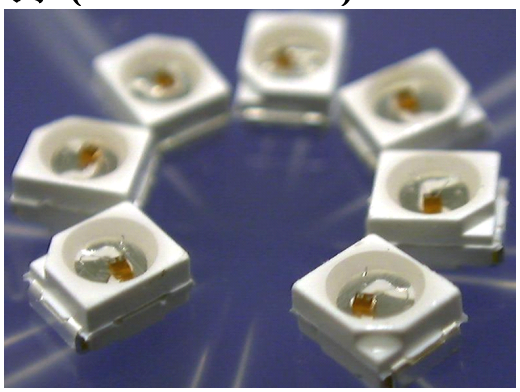
Features 特性

- Schottky-type photodiode 肖特基型的光电二极管
- Cutoff wavelength tunable 截止波长可以调节
- High responsivity 高响应精度
- High visible/solar rejection power 高可见光/太阳光反射能力
- Designed to operate in photovoltaic mode (no bias is required) 光伏运行模式
- Fast response time 快速反应时间
- Extremely low noise and high detectivity 极低噪声和高灵敏性

Compact Surface Mount Packaging
表面紧贴封装

Size 尺寸 (3.5 x 2.8 x 1.85 mm)





General Characteristics *(T_a= 25°C)*

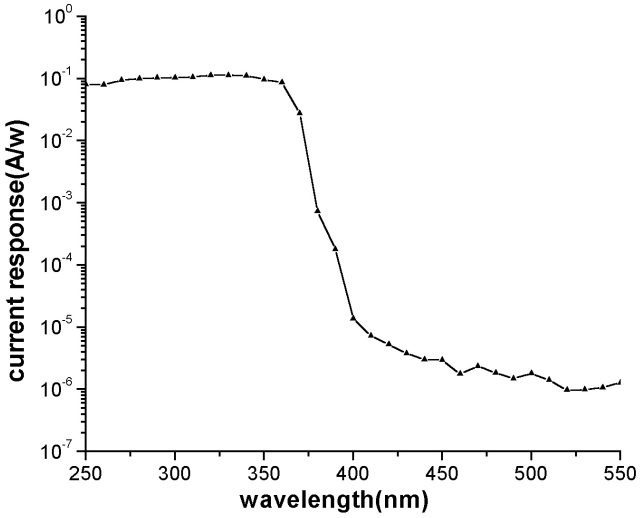
Parameter	Symbol	Typ. Value	Unit
Active area	A	0.04	mm^2
Saturation voltage	V_s	~ 1	V
Max. spectral sensitivity	S_{max}	100 – 130	$mA.W^{-1}$
Range of spectral sensitivity		200 - 400	nm
Max. cutoff wavelength	λcmax	400	nm
Max. cutoff wavelength	λcmin	270	nm
Visible rejection		$> 10^3$	
Operating temperature range	Topt	-20 - +80	^0C

主要特性 （测试温度=25 摄氏度）

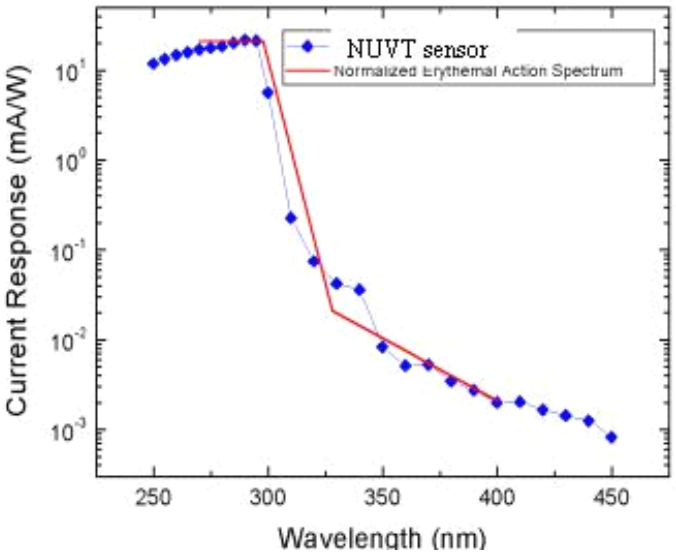
参数	符号	典型值	单位
作用面积	A	0.04	平方毫米
饱和电压	V_S	~ 1	伏
最大光谱敏感性	S_{max}	100 – 130	毫安/瓦
敏感光谱范围		200 - 400	纳米
最大截止波长	λc_{max}	400	纳米
最小截止波长	λc_{min}	270	纳米
可见光排除率		$> 10^3$	
工作温度	T_{opt}	-20 - +80	摄氏度

Spectral Response 光谱响应

(For a diode with λ_c ~ 370 nm, this is just an example. we can offer sensors with cutoff wavelength from 270 to 400 nm. 这是一个例子，对应λc ~370 nm 的二极管。我们产品的截止波长可调节，从 270 到 400 nm）



Good Matching with the Erythemal Action Spectrum
与红斑效应参照谱吻合

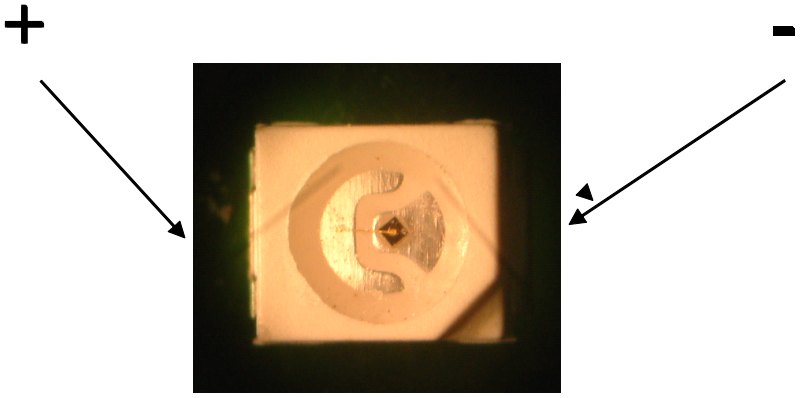


Other information 其它信息

1) The photocurrent output of the sensor illuminated by solar radiation with intensity at UVI = 10 is around 70 - 100nA. That is, if a load resistor of 1MΩ is used, the output photo-voltage is around 70 - 100 mV. The photocurrent output is linear with UVI variation. 强度为 UVI = 10 的太阳照射时，传感器的光电流输出为 70 – 100 nA. 如果使用 1MΩ的负载电阻，输出光电压是 70 - 100 mV. 输出的光电流与 UVI 指数成线性。

2) The temperature dependence of the output is around +1.5% per 10 ^{0}C. 输出电流的温度依赖性大约为每 10 ℃变化 1.5%。

3) Polarity 极性：



Application Circuit 工作电路图