

PD610 Amplified Photodetector

1. Overview

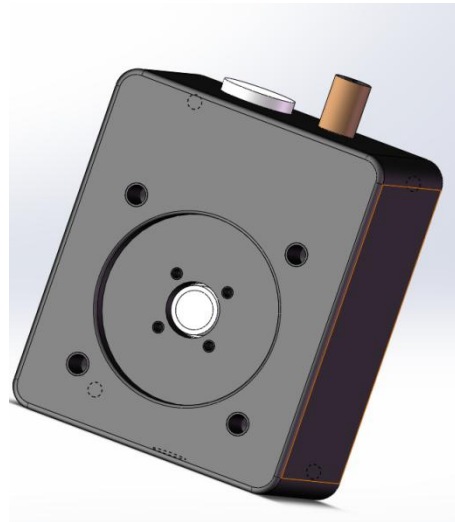
The PD610 is a photodetector with amplification circuitry for free-space optical systems. The unit includes a photodiode, transimpedance amplifier, and RF connector packaged in an aluminum housing. SMA connectors are used at the output to reduce size and maximize frequency response, and the product model covers a wide range of bandwidths. The detectors are available in two spectral ranges, 400-1000nm and 1000-1700nm.

2. Features

- Covers wavelength range of 400-1700nm
- Bandwidth from kHz to GHz
- Low noise
- SMA output connector

3. Applications

- Detecting weak light signals
- Detection of laser pulses
- Scientific experiments
- Analyzers



4. Specifications

Items	PD610A-70k	PD610A-500k
Materials	Si	
Wavelength	320-1100nm	
Photosensitive diameter	3.2x3.2mm	
Responsivity	0.6A/W @940nm	
Bandwidth	DC-70kHz	DC-500kHz
Rise time	5us	0.7us
Gain ^a	0.9x10 ⁶ V/W	0.9x10 ⁵ V/W
Saturated Optical power	5.4uw	52uw
Maximum output amplitude ^a	5V	5V
Output bias voltage ^a	10mV	10mV
Noise voltage ^a	5mV	3mV
NEP	1.7pW/√ Hz	3.5pW/√ Hz

Items	PD610A-500M	PD610A-1G
Materials	Si	
Wavelength	400-1000nm	
Photosensitive diameter	200um	
Responsivity	0.5A/W @850nm	
Bandwidth ^b	DC-500MHz	DC-1GHz
Rise time ^b	800ps	400ps
Gain ^a	600V/W	340V/W
Saturated Optical power	6.2dBm (4.2mw)	7dBm (5mw)
Maximum output amplitude ^a	2.5V	1.7V
Noise voltage ^b	5mV	5mV
NEP	100.3pW/√ Hz	156.6pW/√ Hz

Items	PD610C-50k	PD610C-200k
Materials	InGaAs	
Wavelength	1000-1700nm	
Photosensitive diameter	2x2mm	
Responsivity	0.9A/W @1550nm	
Bandwidth	DC-50kHz	DC-200kHz
Rise time	7us	1.8us
Gain ^a	1.0x10 ⁶ V/W	1.0x10 ⁵ V/W
Saturated Optical power	5uw	50uw
Maximum output amplitude ^a	5V	5V
Output bias voltage ^a	10mV	10mV
Noise voltage ^a	3mV	2mV
NEP	0.9pW/√ Hz	2.4pW/√ Hz

Items	PD610C-500M	PD610C-1G
Materials	InGaAs	
Wavelength	1000-1700nm	
Photosensitive diameter	70um	
Responsivity	0.9A/W @1550nm	
Bandwidth	DC-500MHz	DC-1GHz

Rise time	800ps	400ps
Gain ^a	1100V/W	610V/W
Saturated Optical power	3.6dBm (2.3mw)	6dBm (4mw)
Maximum output amplitude ^a	2.5V	2.5V
Noise voltage ^a	4mV	4mV
NEP	41.7pW/√Hz	85.6pW/√Hz

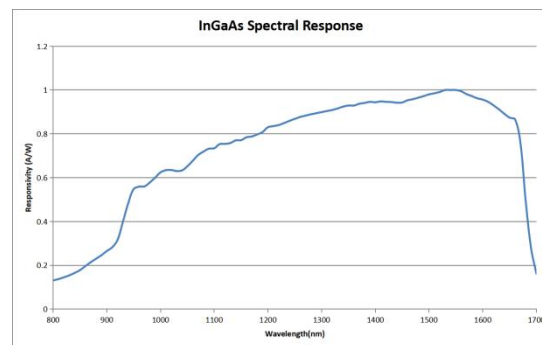
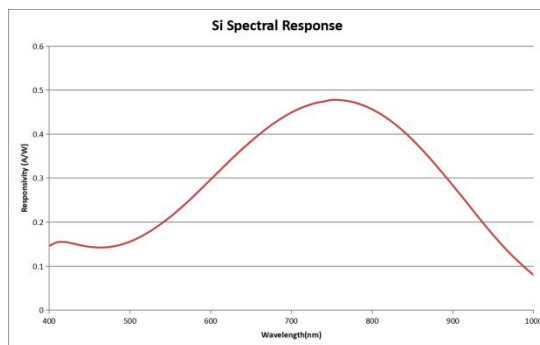
Params	Detector Common Parameters
Operating voltage	9-12V
Operating Current	<200mA
Output Impedance	50Ω
Output coupling mode	DC
Output connector	SMA female
Operating temperature	-20~65°C
Storage temperature	-40~85°C

Remarks:

a For high resistance loads

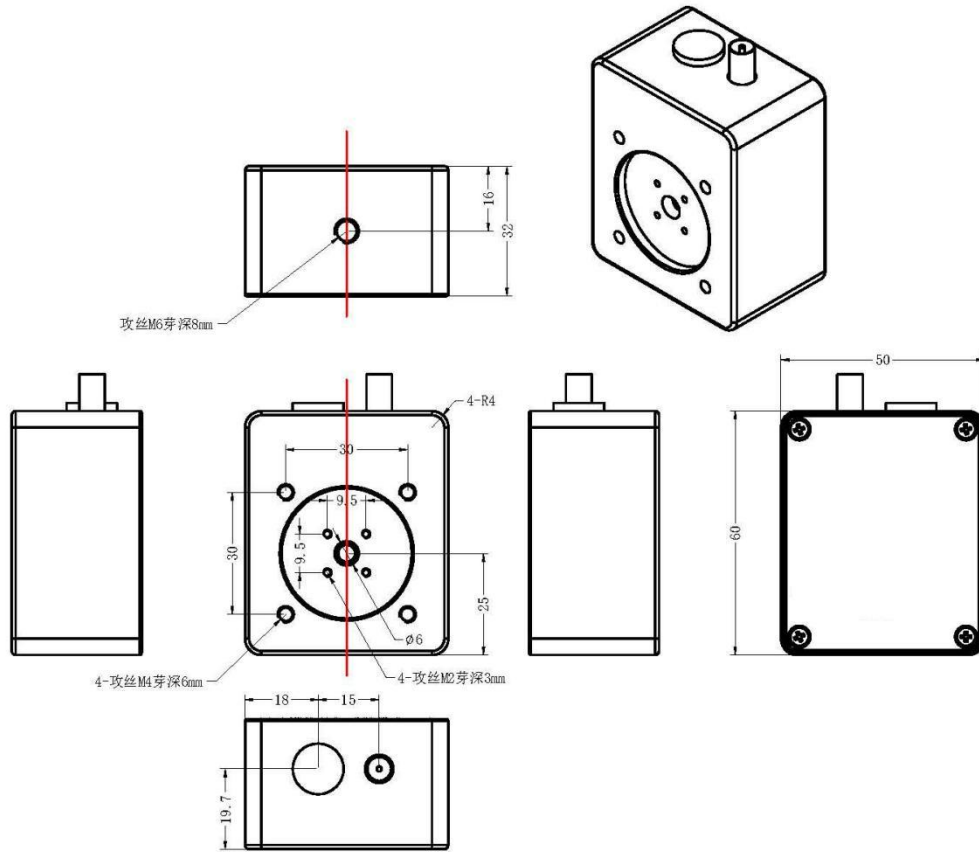
b For 50Ω loads

5. Response curve



Note: Response curves are typical values for reference only.

6. Mechanical dimensions



7. Shipping list

Item	Name of material	num	unit	note
1	photodetector	1	pcs	
2	power adapter	1	pcs	12V
3	SMA to BNC RF Cable	1	pcs	