

# 400-1100nm Silicon Amplified Photodetector (DC-5MHz)



## ● Product Description

The InGaAS photodetector is a fixed-gain photodetector with a rated bandwidth, used to detect optical signals. The optical signal is input from the photoelectric sensor sensing surface and output in the form of voltage through the BNC. This product can measure optical signals in the wavelength range of 800nm to 1700nm. For specific performance parameter data, please refer to the appendix table. The photodetector housing has a mounting hole with a British 1/4"-20 thread, which can be easily installed and fixed. The housing also comes with two different sizes of threaded rings,

which are suitable for industrial applications and scientific research applications respectively, and can be easily adapted to external optical components such as filters, attenuators, lenses, FC fiber adapters, etc. The product includes a plastic dust cover. For specific installation, please refer to Chapter 3. Each photodetector is equipped with a DC linear power supply with an output of  $\pm 9V$ . The input rated voltage of the DC power supply is 220VAC/50HZ.

## ● Product features

Low noise, less than  $\pm 1mV$ 、 Small overshoot, overshoot voltage less than 2.5%、 Gain stability: gain error less than 1%、 Dark bias voltage output noise: less than 1mV (rms)

## ● Part Number

MP-PDAM005B-Si

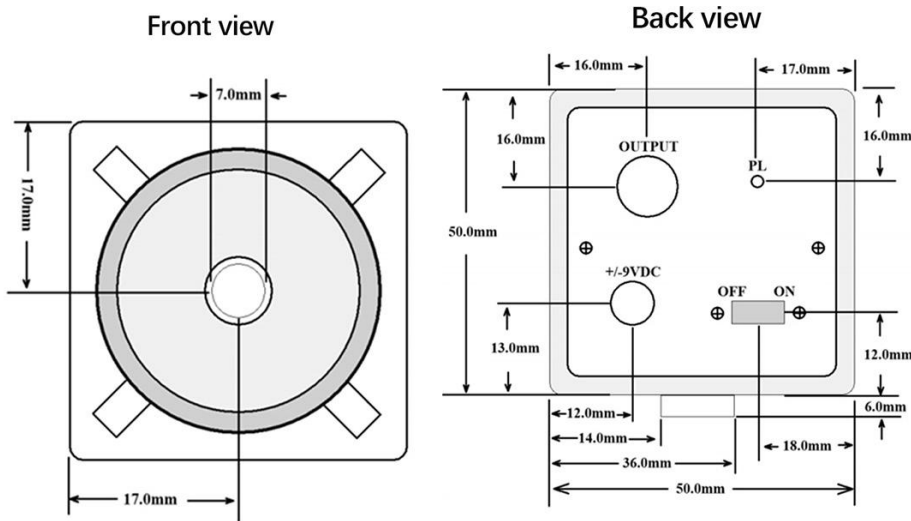
## ● Application area

Display panel inspection、 LED lighting flicker analysis、 Toy lamp flicker frequency and power measurement、 Gas analysis

● **Core parameters**

Active Area	Wavelength	Bandwidth
2.5mm*2.5mm	400-1100nm	5MHz

● **Dimension Drawing**



Bottom mounting hole diagram

## ● General Parameters



### Parameter

PN#	MP-PDAM005B-Si	MP-PDAM36 A5B6G-SI	MP-PDAM20A6B4G-InGa As
Electrical characteristics			
Input voltage	±9VDC, 60mA	± 9VDG 100m A	±9VDC. 100mA
Probe	Silicon PIN	Silicon PIN	InGaAs PIN
Photosensitive surface	2.65mm * 2.6 5mm	3.6mm * 3 .6mm	Diameters@2 mm
			800 nm - 1700 n



<b>Wavelength</b>	400 nm - 1100 nm	320 nm - 1100 nm	m (Optional Extended 2600nm)
<b>Peak response</b>	0.62A/W @850 nm	0.6 A/W @ 960nm	0.9 A/W@ 1550nm
	43.6mV/uW @ 850nm	1 mV/nW @960nm	9mV/uW@ 1550nm
<b>Saturated optical power</b>	113pW@ 850nm (Hi-Z)	6uW @960 nm (Hi-Z)	660 uW@ 1550nm (Hi-Z)
<b>Bandwidth</b>	DC - 5MHz	DC - 200kHz	DC - 5MHz
<b>NEP</b>	7.2 pW/4HZ <sup>1/2</sup>	2.2 pW/HZ <sup>1/2</sup>	64.5 pW/HZ <sup>1/2</sup>
<b>Output noise (RMS)</b>	700 uV	1 mV · typ	1.3 mV .typ
<b>Dark current bias (MAX)</b>	±5 mV	± 1 mV	±5 mV
<b>Rising edge/falling edge (10%-90%)</b>	65 ns	1.7 us	68ns
<b>Output voltage</b>			
<b>Hi-Z</b>	0- 5V (Hi-Z)	0-6V (Hi-Z)	0-6V (Hi-Z)
<b>500</b>	0 · 2.5V (50	0 · 25V (	0 · 25V (50ohm)



	ohm)	50ohm)	
<b>Gain multiple</b>			
<b>Hi-Z</b>	67.5 kV/A	1.68 MV/A	10 kV/A
<b>500</b>	33.8 kV/A	0.84 MV/A	5kV/A
<b>Gain accuracy (typ)</b>	± 1%	± 1%	± 1%
<b>Other parameters</b>			
	Toggle switch	Toggle switch	Toggle switch
<b>Output interface</b>	BNC	BNC	BNC
<b>Dimensions</b>	53*50*50mm	53*50*50mm	53*50*50mm
<b>Weight</b>	150g	150g	150g
<b>Operating temperature</b>	10-50deg	10-50deg	10-50deg
<b>Storage temperature</b>	• 25 °C - 70 ° C	-25 ° C - 70 °C	-25 °C - 70 °C

**Silicon-based photodetector, with amplifier, fixed gain, model reference**

PN#	Wavelength	Bandwidth	Rising time	Gain		RMS Noise	NEP	Sensing area	Operating temp	Power supply
				Hi-Z load	50Ω load					

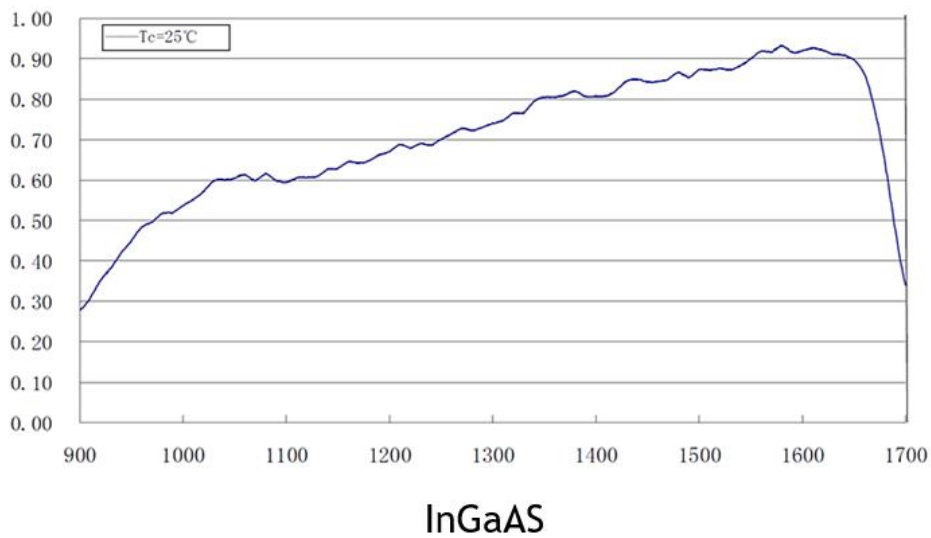
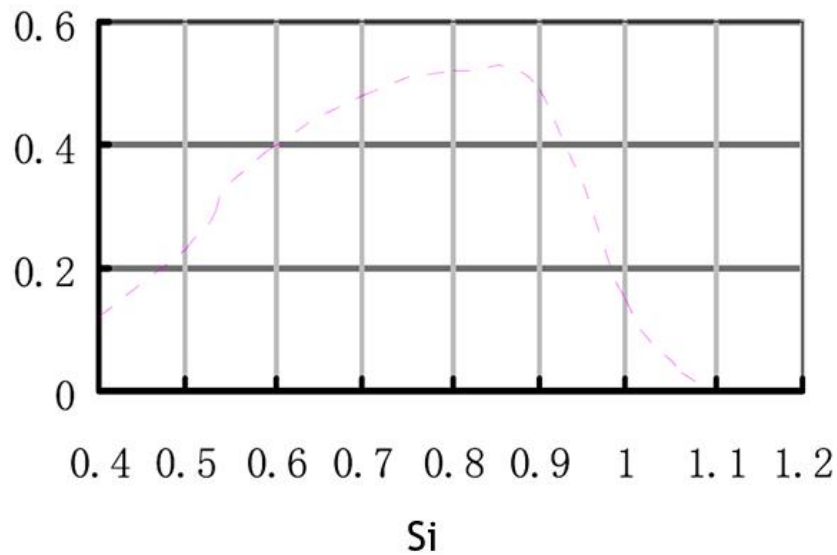


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MP-PD A12A8 B4 G-VIS	400 - 1100 nm	DC -140 M Hz	2.5 n S	1* 1 0 <sup>4</sup> V/ A	5* 1 0 <sup>3</sup> k V/A	850 μV .t yp	2* 1 0 <sup>-11</sup> W / √ HZ	1.2m m* 1.2 mm	10-50 °C	Include d( ± 9V)
MP-PD A12A7 B4 G-VIS	400 - 1100 nm	DC-5 0MH z	7 nS	5* 1 0 <sup>4</sup> V/ A	2.5* 10 <sup>4</sup> k V/A	800 μV .t yp	6.3* 10 <sup>-1</sup> <sup>2</sup> W/ √ HZ	1.2m m* 1.2 mm	10-50 °C	Include d ( ± 9V)
MP-PD A25A6 B4 G-VIS	400 - 1100n m	DC -5M Hz	68 nS	1* 1 0 <sup>5</sup> V/ A	5* 1 0 <sup>4</sup> V / A	700 μV .t yp	5.3* 10 <sup>-1</sup> <sup>2</sup> W/ √ HZ	2.5m m*2.5 mm	10-50 °C	Include d ( ± 9V)
MP-PD A36A5 B6 G-VIS	320 - 1100 nm	DC-2 00K HZ	1.7 μ S	1.68 * 10 <sup>6</sup> V/A	8.4* 10 <sup>5</sup> V/A	1mV .br/>typ	2.2* 10 <sup>-1</sup> <sup>2</sup> W/ √ HZ	3.6m m*3.6 mm	10-50 °C	Include d ( ± 9V)

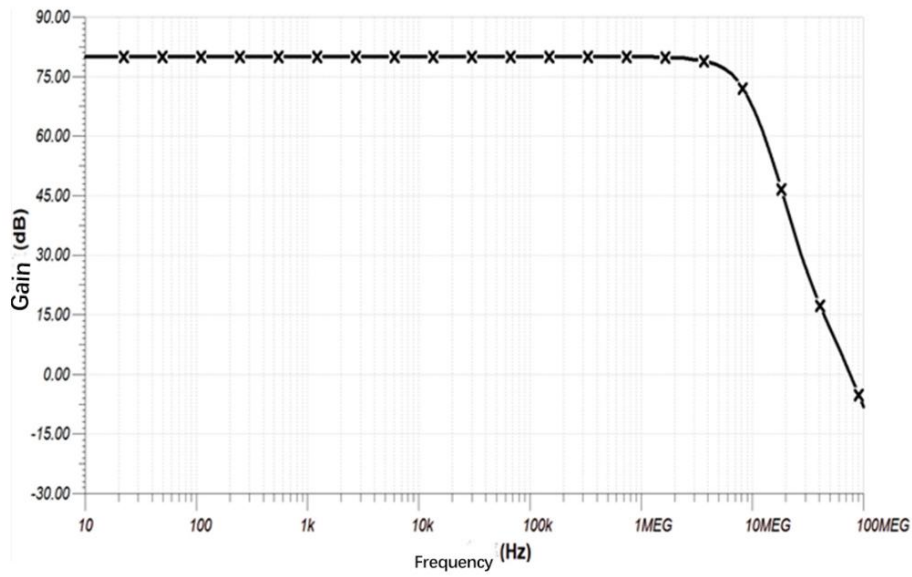


MP-PD	400 -	DC-		1*		1.5	1.8*			
A25A4	1100	20K	18	10 <sup>8</sup>	—	mV.	10 <sup>-1</sup>	2.5m	10-50	Include
B8	nm	HZ	μS	V/A		typ	<sup>3</sup> W/√	m*2.5	°C	d ( ±
G-VIS							HZ	mm		9V)

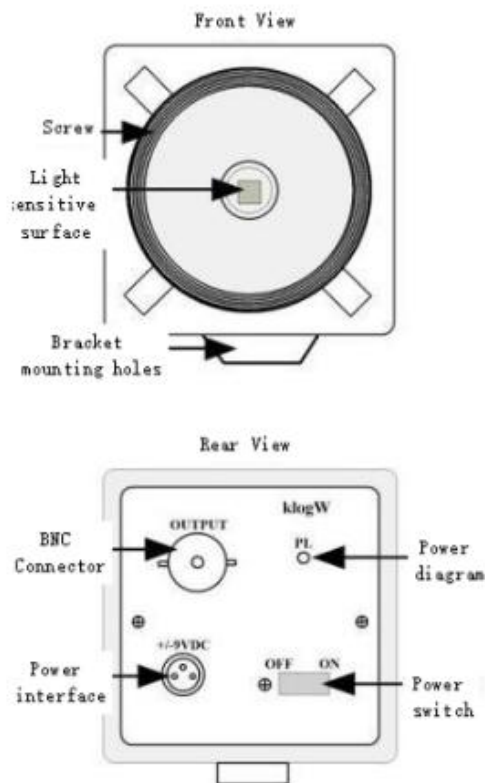
### Spectral sensitivity



## AC transfer characteristics



## Appearance and installation



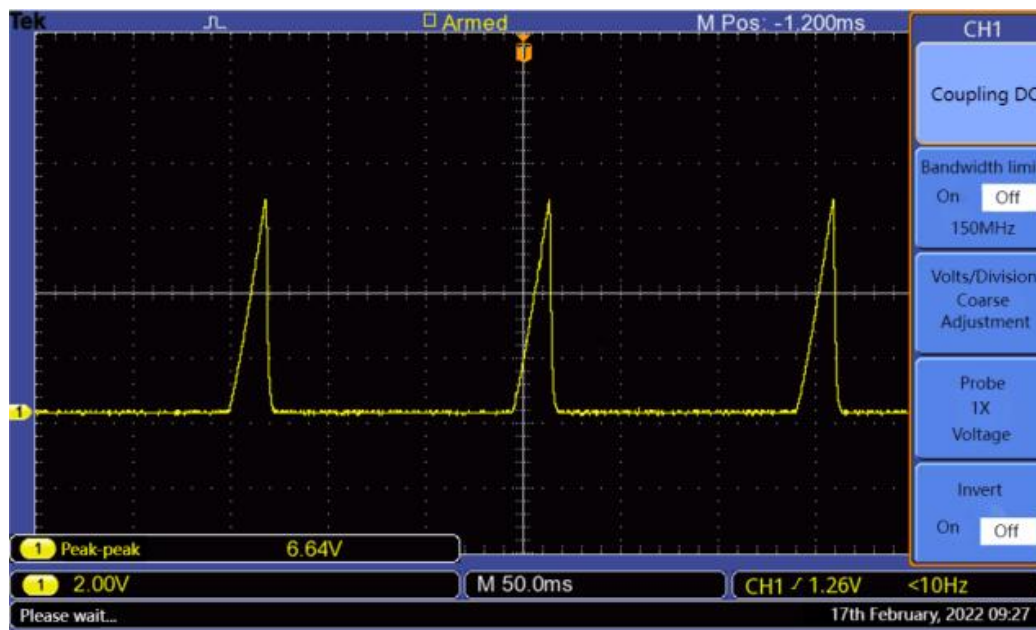
## Test Cases:

Test light source:

PN: MP-DFB-9672.4-B-A81-PA

Test conditions : 25°C 、 Laser current sweep 15-23mA , The detector output is as

follows:



This detector has high detection accuracy at 972nm and can detect weak light (tens of microwatts).