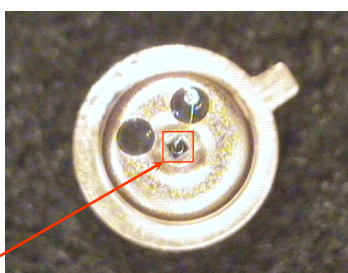


Features

- High reliability
- Superior linearity
- Easy-to-use detector/amplifier modules are also available
- Parabolic reflector



Photodiode CHIP

Description

Photodiode **PD36-03-PRW** is a model of [photodetector](#) for detection of radiation at room temperature in the Middle Infrared (Mid-IR) spectral range from 1500 to 3800 nm.

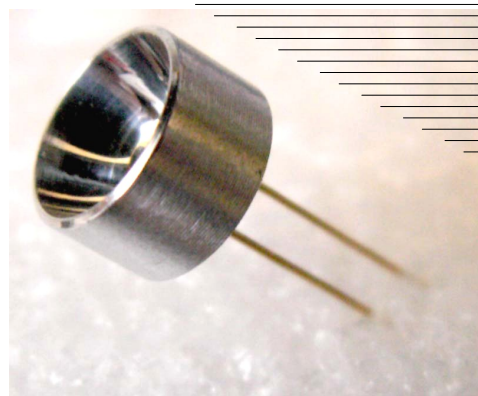
Photodiode chip is disposed inside the standard 5.5 mm TO-18 package with parabolic reflector (**PR**) and window (**W**).

Diameter of the photosensitive area of **PD36-03-PRW** is 300 μm . High speed of response makes it possible for detection of modulated radiation of laser diodes (LDs) and light-emitting diodes (LEDs). **PR** allows to increase detectivity of the photodiode by a factor of 10 in the case of parallel beam of radiation.

Related products: **PD36-03-PRW** can be used in optical pair with our [LED29...LED36](#) and [LD290...LD360](#).

General characteristics

Package	Parameter	Symbol	Value	Unit
TO-18 with PR W	Sensitive area diameter	d	0.3	mm
	Weight	m	0.65	g
	Operating temperature	T _{opr}	- 200...+ 60	°C
	Window material		sapphire glass	
	Soldering temperature	T _s	+ 230	°C
	Storage temperature	T _{stg}	- 55...+ 70	°C
	Maximum reverse bias voltage	V	- 1.0	V
	Size	D	9.0	mm
		H	18.5	



Applications

- Environment measurements
- Infrared spectrophotometry
- Laser detection
- Analytical instruments

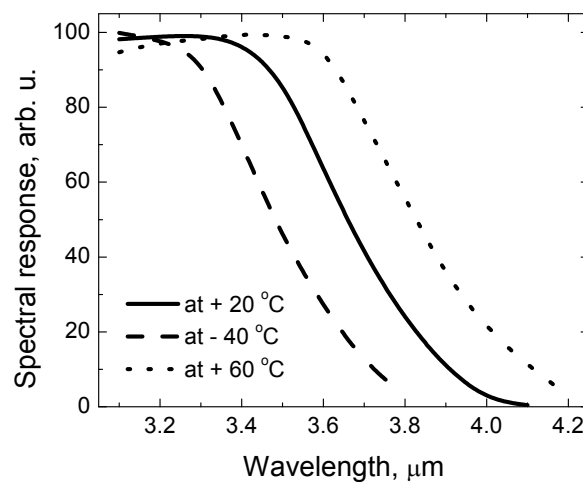
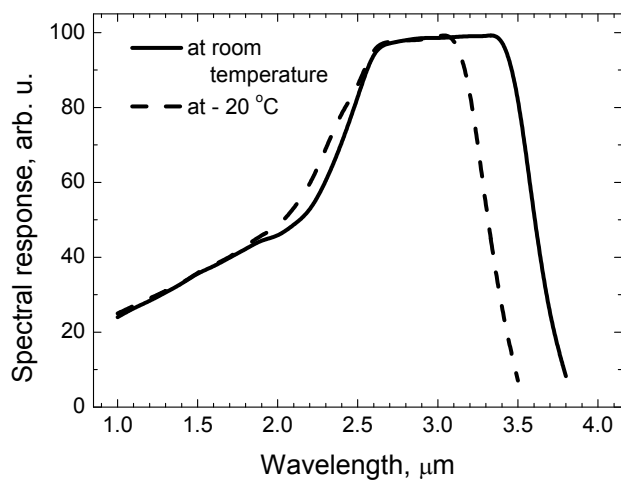
Accessories (optional)

- [Amplifier AM-07M](#)

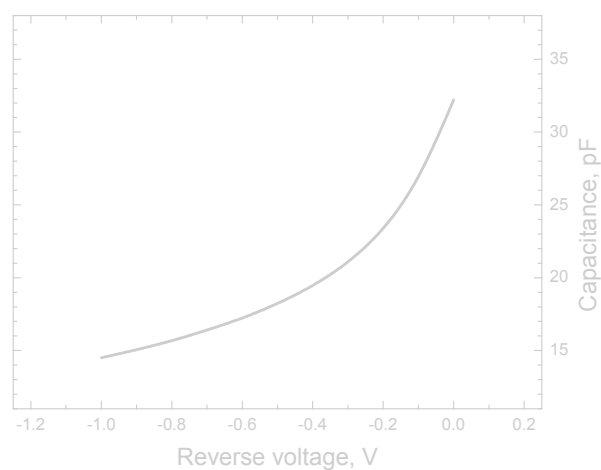
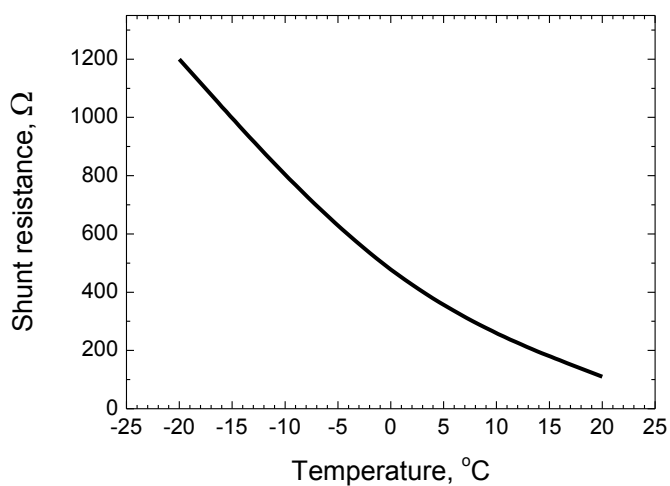
▼ Electrical and optical characteristics

Parameter	Symbol	Condition $T \approx + 20\text{ }^{\circ}\text{C}$	Min.	Typ.	Max.	Unit
Cut-off wavelength	λ	at level 10%	3.60	3.80	3.85	μm
Peak sensitivity wavelength	λ_p	at level 90%	2.55 - 3.45			μm
Photo sensitivity	S	at λ_p	1.0	1.1	1.2	A/W
Detectivity	D^*	at λ_p	$3 \cdot 10^9$	$4 \cdot 10^9$	$6 \cdot 10^9$	$\text{cm} \cdot \text{Hz}^{1/2} \cdot \text{W}^{-1}$
Dark current	I_d	$V = - 0.2\text{ V}$	150	250	350	μA
		$V = - 0.4\text{ V}$	200	400	500	
		$V = - 0.6\text{ V}$	300	600	800	
Capacitance	C	$V = 0\text{ V}$, $f = 1\text{ MHz}$	100	400	1000	pF
Rise time	t_r	$V = 0\text{ V}$, $R_L = 50\text{ }\Omega$ $V = - 0.5\text{ V}$	20 10	50 10	120 20	ns
Fall time	t_f					
Shunt resistance	R_0	$V \approx - 10\text{ mV}$	100	300	1200	Ω
Noise equivalent power	NEP	at λ_p	$1.8 \cdot 10^{-11}$	$1.3 \cdot 10^{-11}$	$8.9 \cdot 10^{-12}$	$\text{W} \cdot \text{Hz}^{-1/2}$

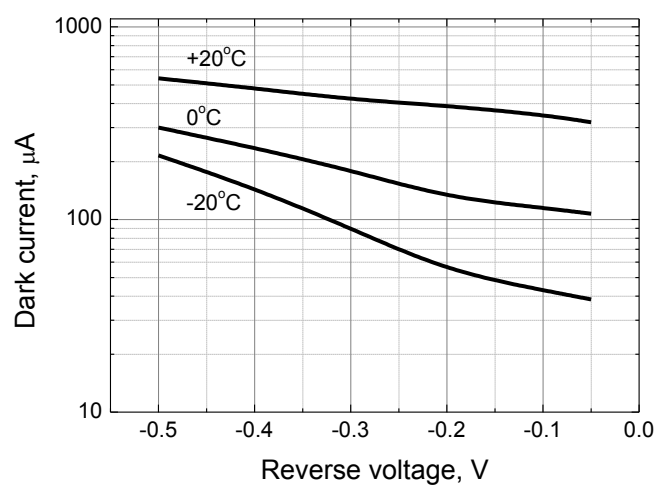
▼ Spectral response



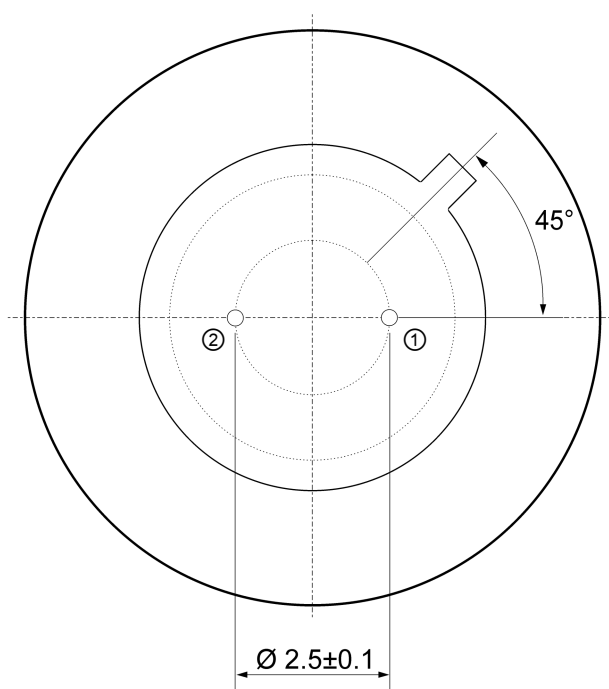
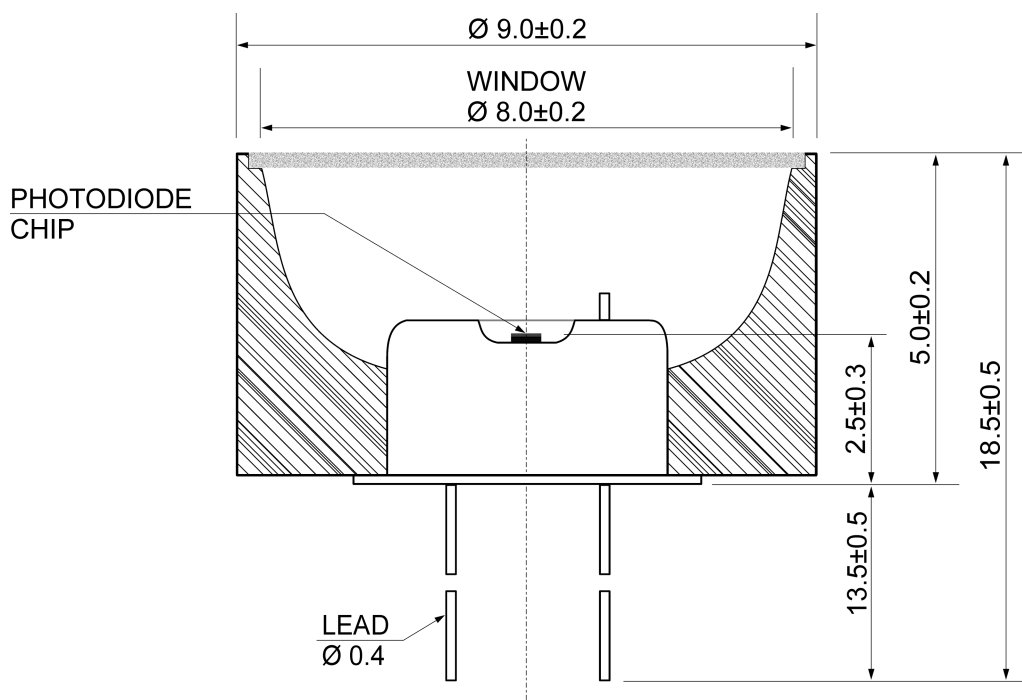
▼ Shunt resistance vs. element temperature ▼ Capacitance vs. reverse voltage



▀ Dark current vs. reverse voltage



▼ TO-18 package with PR & W dimensions (unit: mm)



Pin	Description
①	Detector (anode)*
②	Detector (cathode)*

*Special order: the pin polarity can be changed.