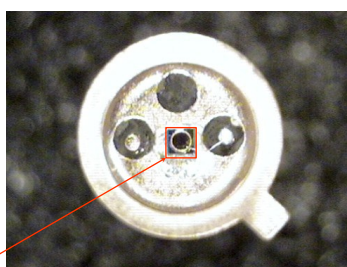


Features

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



Photodiode CHIP

Description

Photodiode **PD36-05-PR** 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.

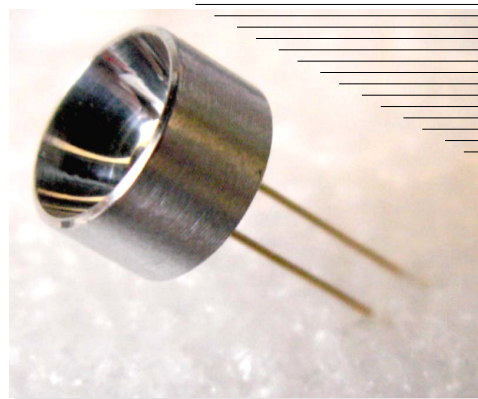
Photodiode chip is disposed inside the standard 5.5 mm TO-18F package with parabolic reflector (**PR**).

Diameter of the photosensitive area of **PD36-05-PR** is 500 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: **PD36-05-PR** can be used in optical pair with our [LED29...LED36](#) and [LD290...LD360](#).

General characteristics

Package	Parameter	Symbol	Value	Unit
TO-18F with PR	Sensitive area diameter	d	0.5	mm
	Weight	m	0.65	g
	Operating temperature	T _{opr}	-200...+60	°C
	Window material		no	
	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
		H	18.5	



Applications

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

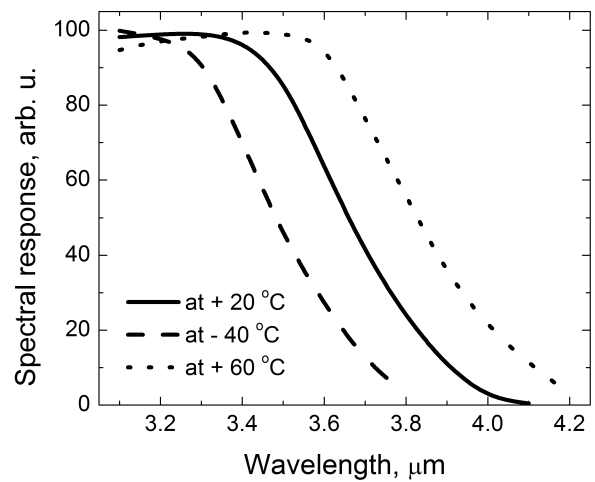
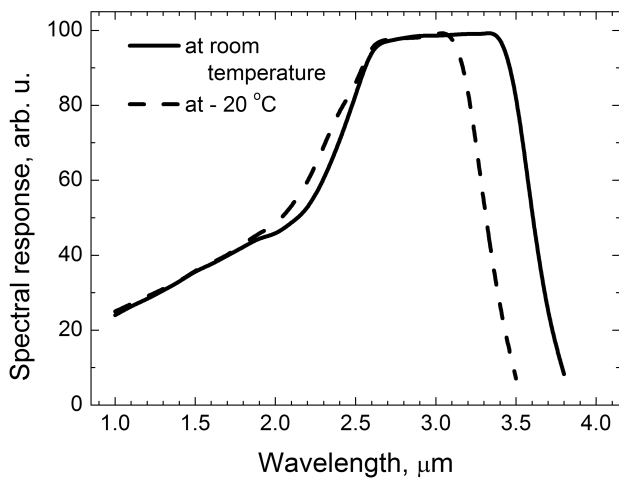
Accessories (optional)

- [Amplifier AM-07M](#)

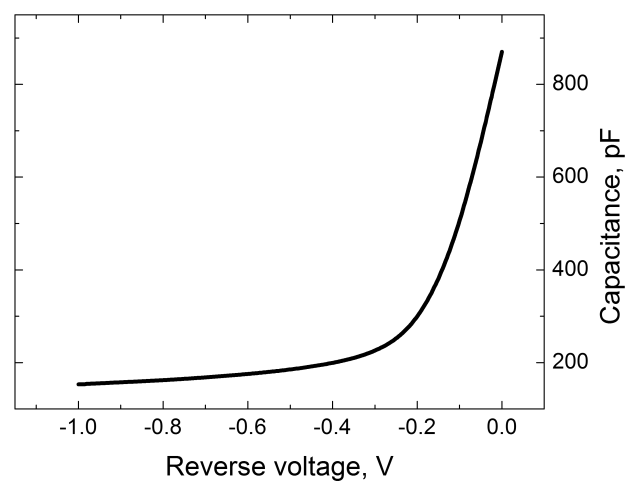
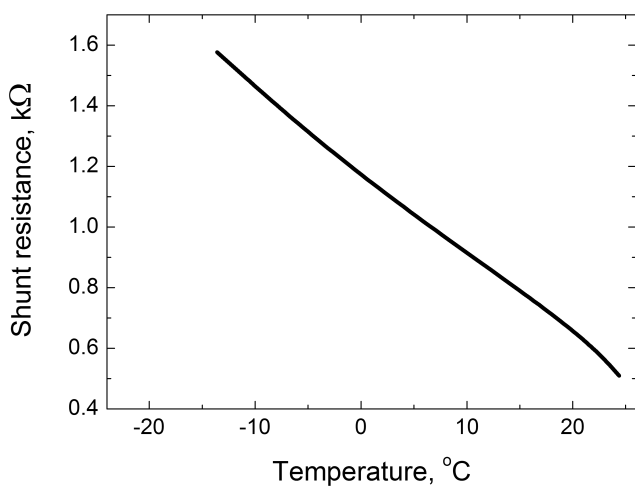
▼ Electrical and optical characteristics

Parameter	Symbol	Condition $T \approx +20^\circ\text{C}$	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	$V = -0.2 \text{ V}$	200	350	600	μA
		$V = -0.4 \text{ V}$	450	600	800	
		$V = -0.6 \text{ V}$	700	900	1100	
Capacitance	C	$V = 0 \text{ V}$, $f = 1 \text{ MHz}$	500	900	1300	pF
Rise time	t_r	$V = 0 \text{ V}$, $R_L = 50 \Omega$ $V = -0.5 \text{ V}$	45 10	100 15	140 20	ns
Fall time	t_f					
Shunt resistance	R_0	$V \approx -10 \text{ mV}$	80	200	700	Ω
Noise equivalent power	NEP	at D^*	$3.0 \cdot 10^{-11}$	$2.2 \cdot 10^{-11}$	$1.5 \cdot 10^{-11}$	$\text{W} \cdot \text{Hz}^{-1/2}$

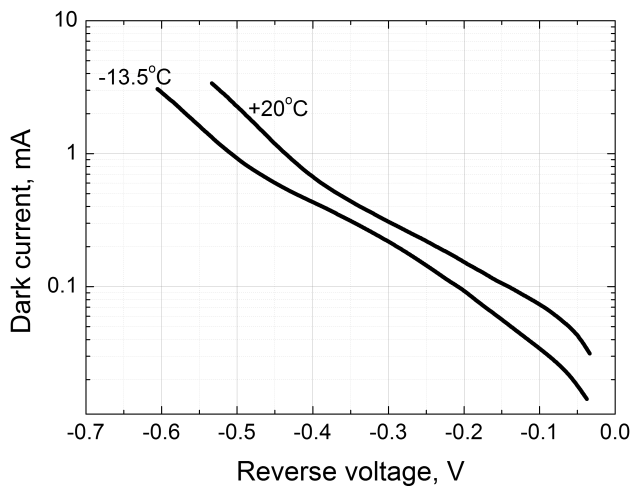
▾ Spectral response



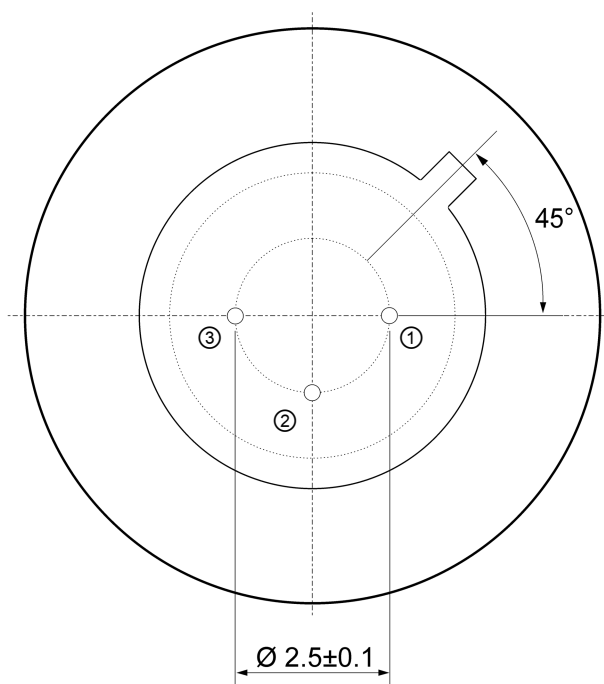
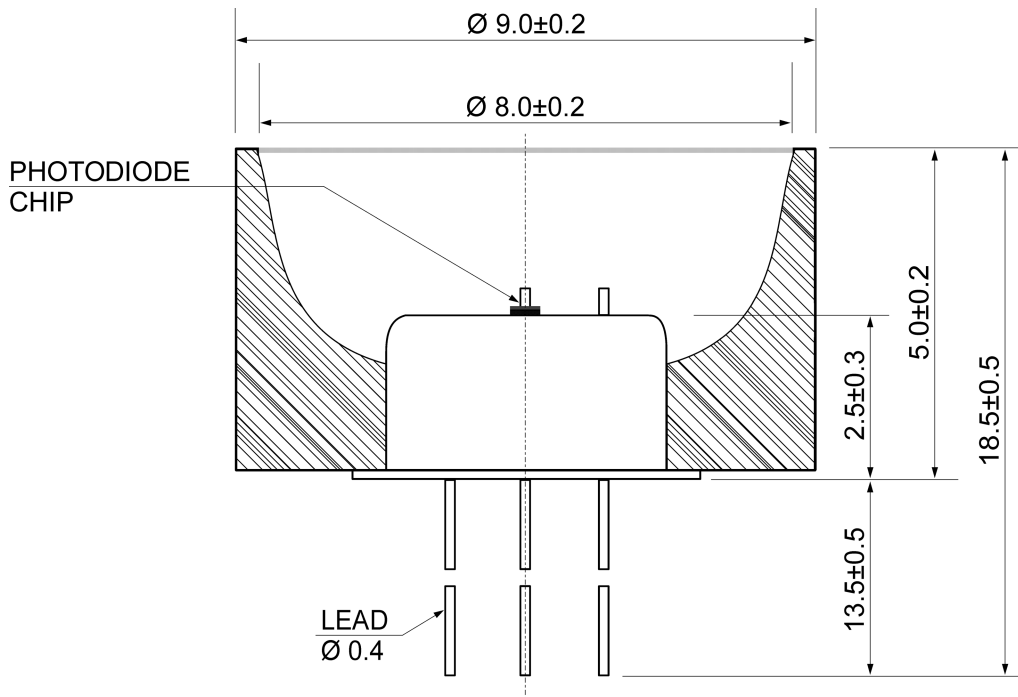
▾ Shunt resistance vs. element temperature ▾ Capacitance vs. reverse voltage



▼ Dark current vs. reverse voltage



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



Pin	Description
①	Detector (anode)*
②	Not applicable
③	Detector (cathode)*

*Special order: the pin polarity can be changed.