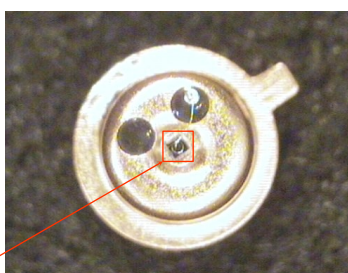
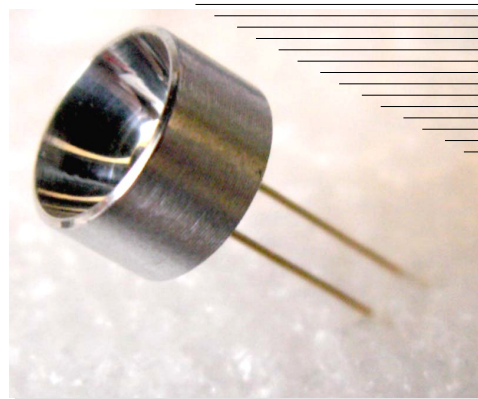


Features

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



Photodiode CHIP



Applications

- Environment measurements
- Fiber optics
- Laser detection
- Analytical instruments

Accessories (optional)

- [Amplifier AM-07M](#)

Description

Photodiode **PD18-03-PRW** is a model of [photodetector](#) for detection of radiation at room temperature in the Middle Infrared (Mid-IR) spectral range from 800 to 1800 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 **PD18-03-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: **PD18-03-PRW** can be used in optical pair with our [LED11...LED18](#).

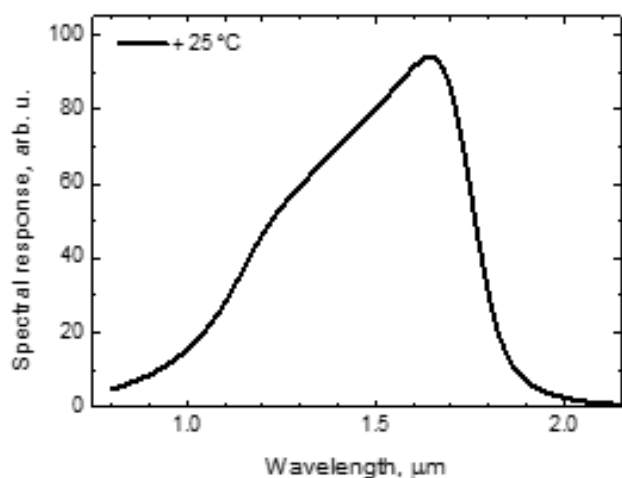
General characteristics

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	3.0	V
	Size	D	9.0	mm
		H	18.5	

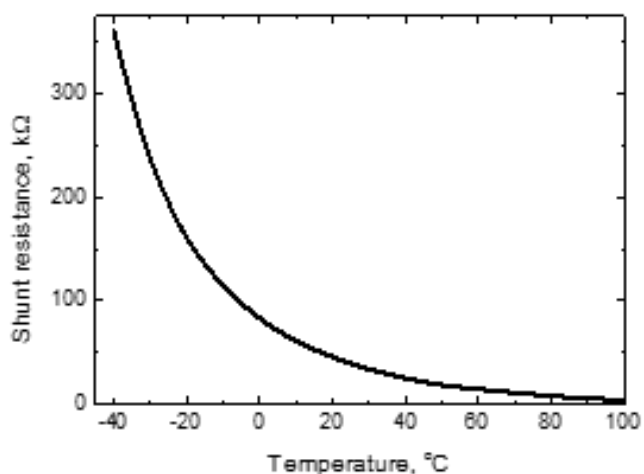
Electrical and optical characteristics

Parameter	Symbol	Condition $T \approx +20^\circ\text{C}$	Min.	Typ.	Max.	Unit
Cut-off wavelength	λ	at level 10%	1.78	1.80	1.85	μm
Peak sensitivity wavelength	λ_p	at level 90%	1.58 - 1.68			μm
Photo sensitivity	S	at λ_p	-	0.95-1.00	-	A/W
Detectivity	D^*	at λ_p	-	$(7-9) \cdot 10^{10}$	-	$\text{cm} \cdot \text{Hz}^{1/2} \cdot \text{W}^{-1}$
Dark current	I_d	$U = -0.2 \text{ V}$	-	1-3	-	μA
		$U = -0.5 \text{ V}$	-	2-6	-	
		$U = -1.0 \text{ V}$	-	3-8	-	
Capacitance	C	$U = 0 \text{ V}$ $f = 1 \text{ MHz}$	70	-	110	pF
Rise time	t_r	$U = 0 \text{ V}$ $R_L = 50 \Omega$	5	-	10	ns
Fall time	t_f					
Shunt resistance	R_0	$U_R \approx 10 \text{ mV}$		40-50		k Ω
Noise equivalent power	NEP	при λ_p	-	-	-	$\text{W} \cdot \text{Hz}^{-1/2}$

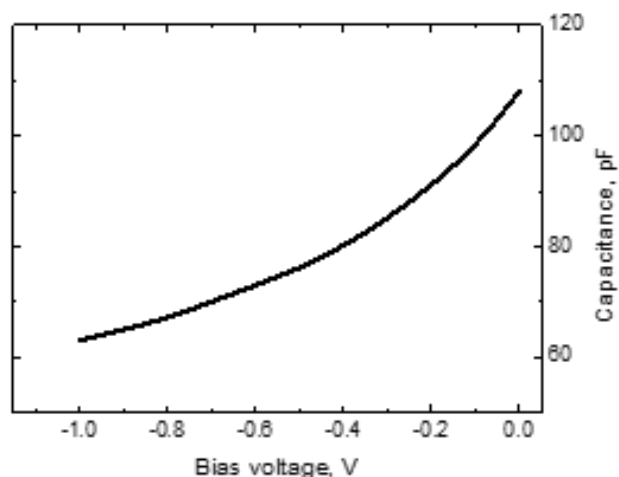
▼ Spectral response



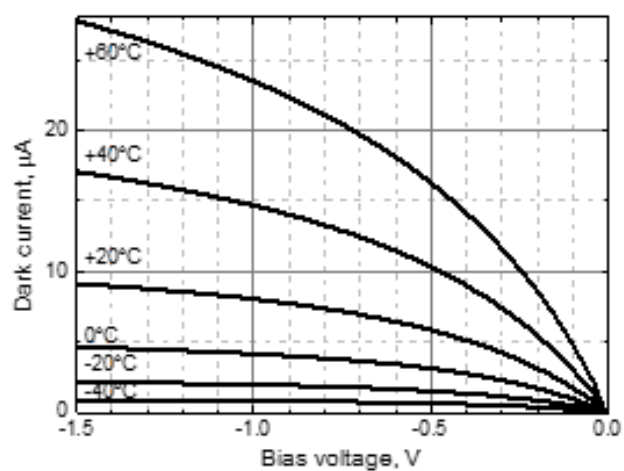
▼ Shunt resistance vs. element temperature



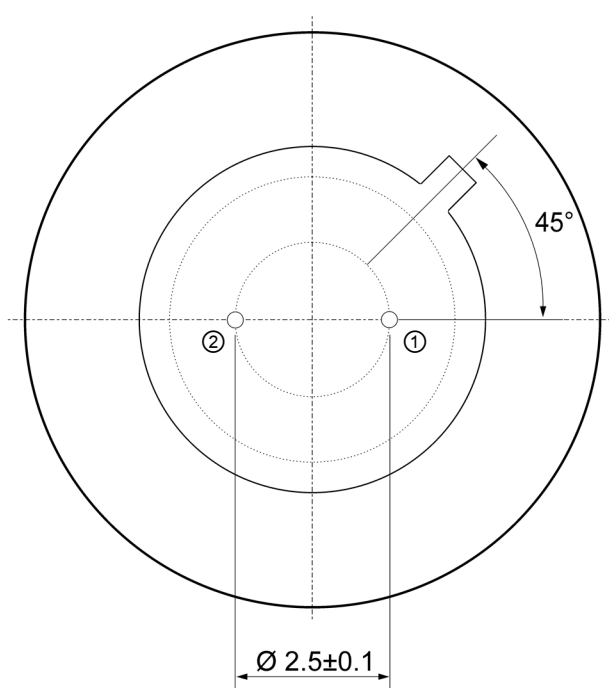
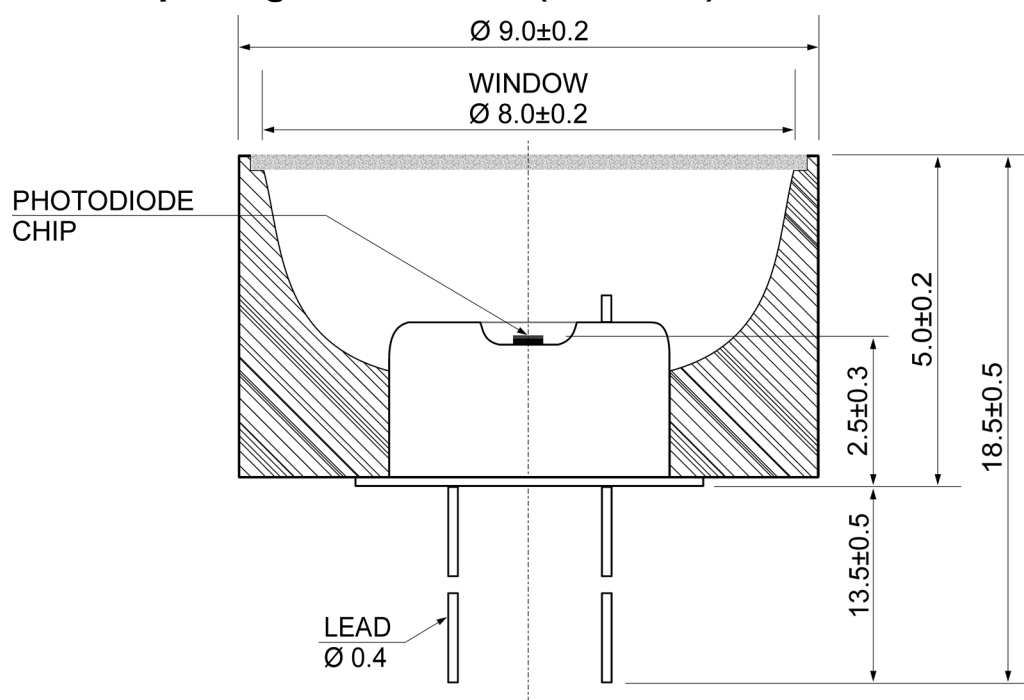
▼ Capacitance vs. bias voltage



Dark current vs. bias voltage



▼TO-18 package dimensions (unit: mm)



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

*Special order: the pin polarity can be changed.