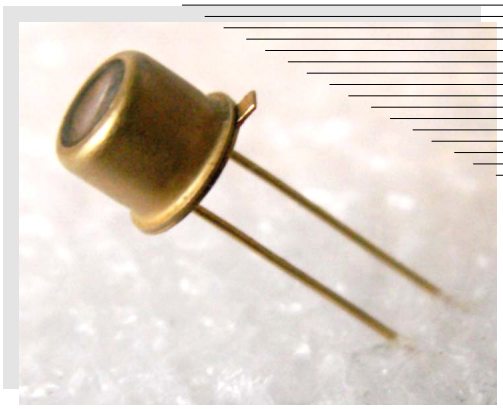
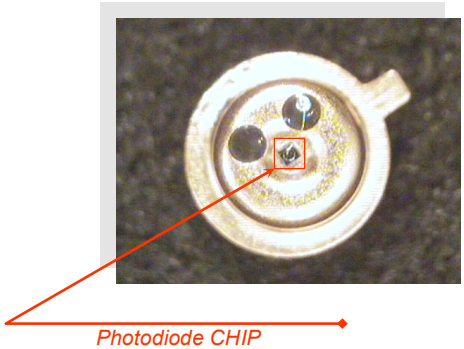
Mid Infrared
IBSG
Optoelectronics



ORIGINAL PRODUCT 100% GUARANTEE

Features

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



Applications

- **Invironment measurements**
- **Gas analysis (CH_4, CO, CO_2)**
- **Infared spectrophotometry**
- **Laser detection**
- **Analytical instruments**

Accessories (optional)

- **Amplifier AM-07M**

Description

Photodiode **PD48-03** is a model of photodetector for detection of radiation in the Middle Infrared (Mid -IR) spectral range from 2500 to 4800 nm.

Photodiode chip is disposed inside the standard 5.5 mm TO-18 package.

Diameter of the photosensitive area of **PD48-03** is 300 µm. High speed of response makes it possible for detection of modulated radiation of laser diodes (LDs) and light-emitting diodes (LEDs).

Related products: **PD48-03** can be used in optical pair with our **LED37**, **LED38**, **LED39**, **LED41**, **LED43**, **LED46**.

General characteristics

Package	Parameter	Symbol	Value	Unit
TO-18	Sensitive area diameter	d	0.3	mm
	Weight	m	0.26	g
	Operating temperature	T_{opr}	− 10…+ 40	°C
	Window material	NO		
	Cooling	NO		
	Soldering temperature	T_s	230	°C
	Storage temperature	T_{stg}	− 20…+ 50	°C
	Maximum reverse bias voltage	V_b	− 0.5	V
	Size	D	5.5	mm
		H	17.7	

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Electrical and optical characteristics

Parameter	Symbol	Element temperature			Unit
		0 °C	20 °C	40 °C	
Spectral sensitivity range (at level 10%)	λ	-	2.5 – 4.8	-	µm
Peak sensitivity wavelength (at level 90%)	λ_p	-	4.3 – 4.6	-	µm
Photo sensitivity (at λ_P)	S	-	0.6 – 0.8	-	A/W
Detectivity (at λ_p)	D*	-	$[5 – 8]\cdot10^8$	-	$cm\cdot Hz^{½}\cdot W^{-1}$
Dark current (V = – 0.1 V)	I_d	0.4 – 0.6	0.6 – 1.0	≥ 1	mA
Rise time	t_r	-	10 – 20	-	ns
Terminal capacitance (V = – 0.1 V)	C	-	25 – 50	-	pF
Shunt resistance	R_0	800 – 1600	100 – 500	-	Ω
Noise equivalent power (at λ_P)	NEP	-	-	-	$W\cdot Hz^{-½}$

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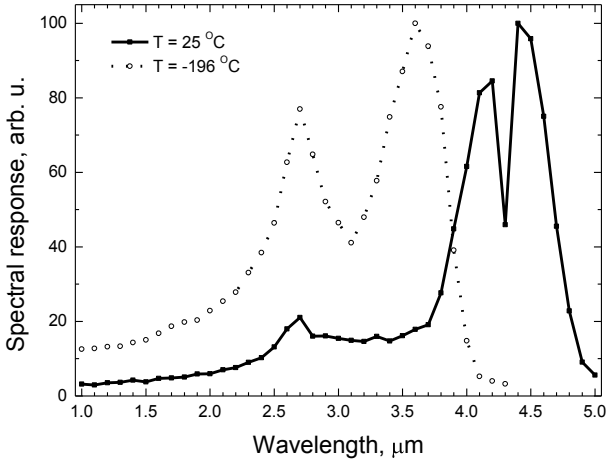
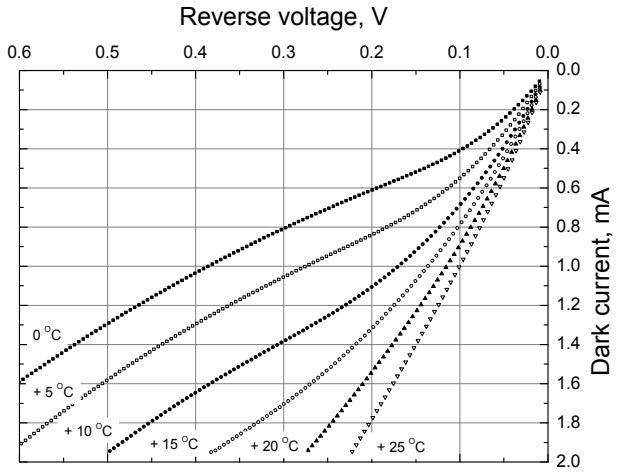
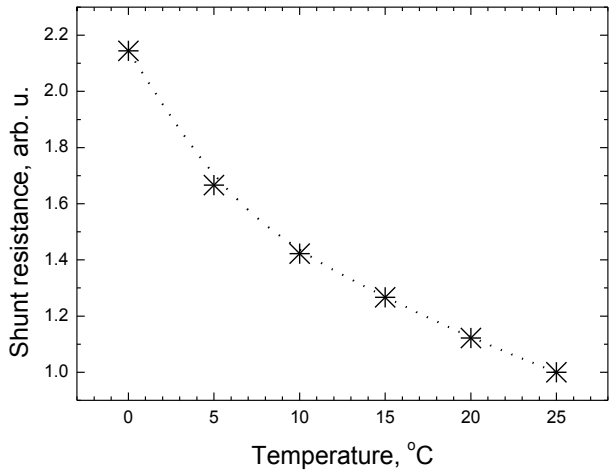
Spectral response



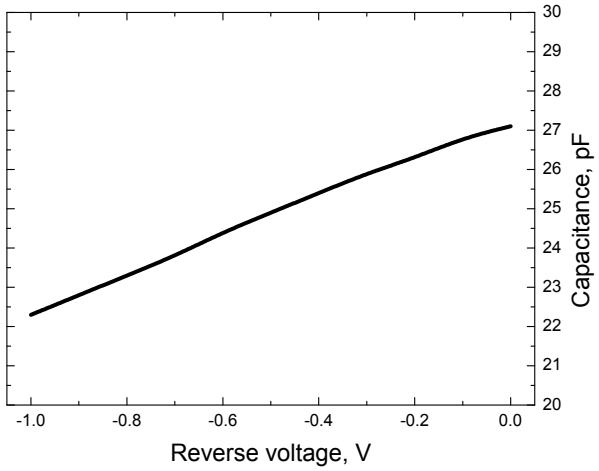
Dark current vs. reverse voltage



Shunt resistance vs. element temperature



Capacitance vs. reverse voltage



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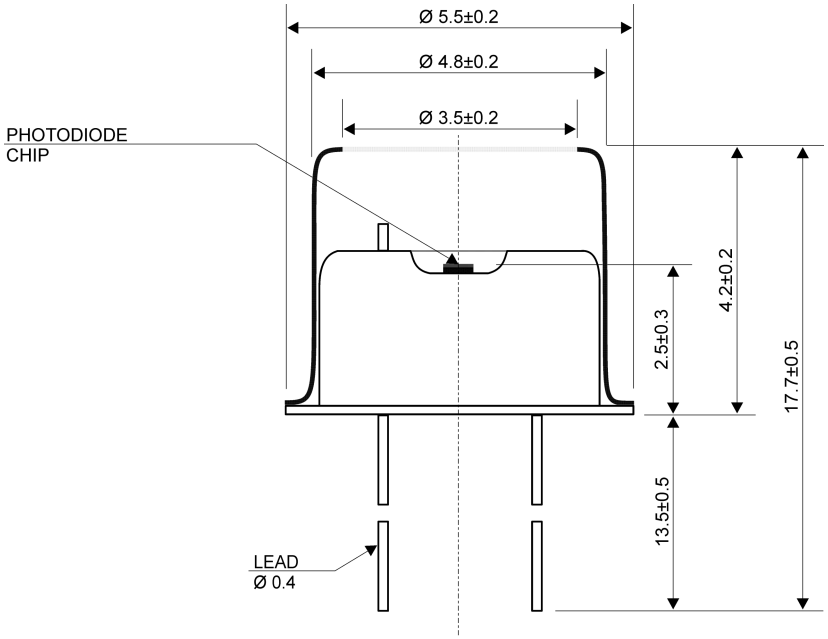
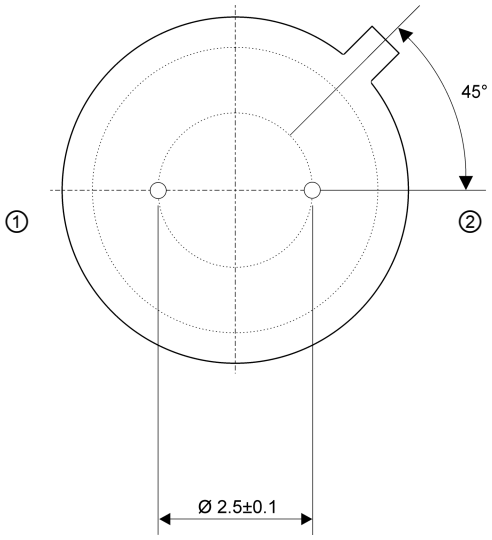
TO-18 package dimensions (unit: mm)





① PD − / PD +

② PD + / PD −