

## Lms24PD-03-TEM

Device parameters	Symbol	Value	Units
Sensitive area size	d	0.3	mm
Reverse voltage	$V_r$	1.0	V
Operating/ storage temperature	$T_{opr}/ T_{stg}$	+5..+90*	$^{\circ}\text{C}$
Soldering temperature (can be applied for not more than 5 secs)	$T_{sol}$	+180	$^{\circ}\text{C}$



\*Photodiode design for different storage/operating temperature range can be considered under request.

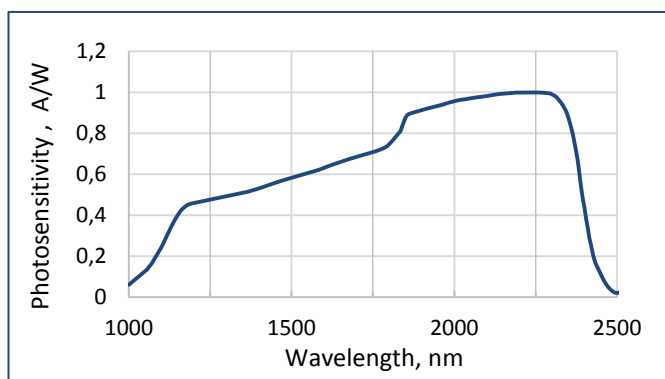
All parameters refer to photodiode operation at ambient temperature 25 $^{\circ}\text{C}$  unless otherwise stated.

Photodiode parameters	Conditions	Symbol	Value	Units
Cut-off wavelength (at 10% level) <sup>1</sup>	-	$\lambda_{cut}$	2.42 - 2.43	$\mu\text{m}$
Max. sensitivity range (at 80% level) <sup>1</sup>	-	$\lambda_p$	1.85 - 2.30	$\mu\text{m}$
Dark current (typical/ maximal) <sup>2</sup>	$V_r = 1 \text{ V}$	$I_d$	typ 30 / max 60	$\mu\text{A}$
Shunt resistance (minimal/ typical) <sup>2</sup>	$V_r = 10 \text{ mV}$	$R_{sh}$	min 5 / typ 10	$\text{k}\Omega$
Capacitance (typical/ maximal) <sup>1</sup>	$V_r = 10 \text{ mV}$	C	typ 160 / max 200	pF
Photosensitivity (minimal/ typical) <sup>2</sup>	$\lambda = 2.2 \mu\text{m}$	S	min 0.9 / typ 1.1	A/W
Noise equivalent power (typical/ maximal) <sup>2</sup>	$\lambda = 2.2 \mu\text{m}$	NEP	typ $1.2 \cdot 10^{-12}$ / max $2.6 \cdot 10^{-12}$	$\text{W}/\text{Hz}^{1/2}$
Detectivity (minimal/ typical) <sup>2</sup>	$\lambda = 2.2 \mu\text{m}$	$D^*$	min $1.2 \cdot 10^{10}$ / typ $2.6 \cdot 10^{10}$	$\text{cm}^2 \cdot \text{Hz}^{1/2} \cdot \text{W}^{-1}$

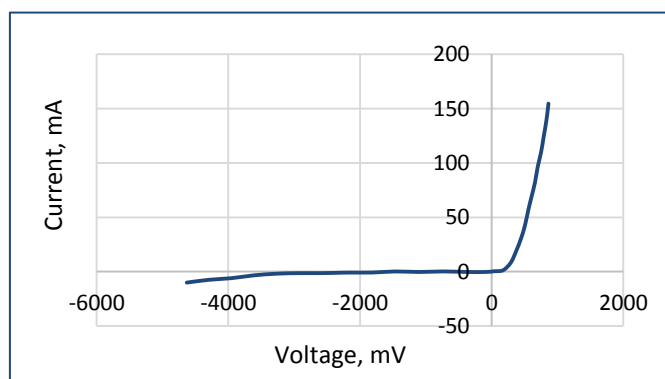
<sup>1</sup> Parameter tested for representative sampling.

<sup>2</sup> Parameter tested for each device.

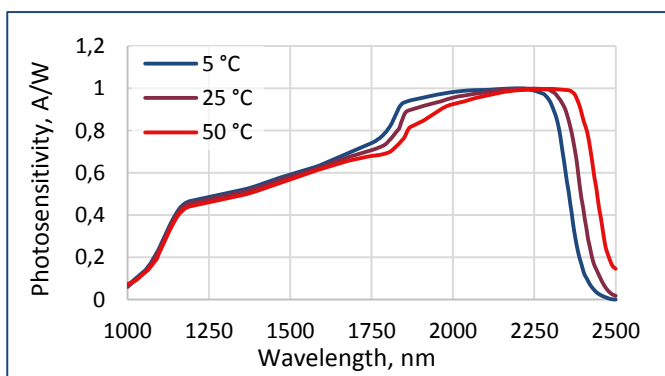
Typical spectral response



Typical current-voltage characteristic



Temperature shift of spectral response

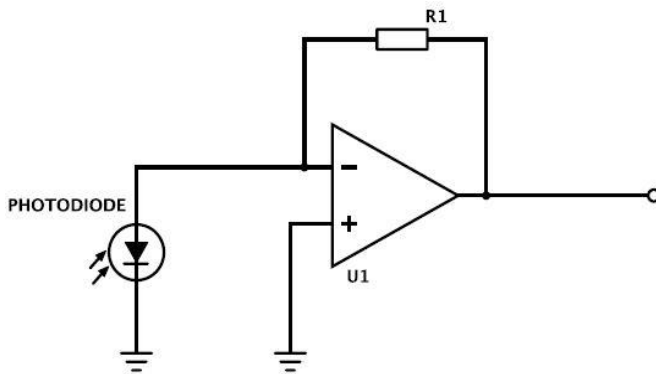


Packages*	Model
TO-18 with a cap without a glass window	Lms24PD-03
TO-18 with a parabolic reflector without a glass window	Lms24PD-03-R
TO-18 with a parabolic reflector with a glass window	Lms24PD-03-RW
TO-5 with a built-in thermocooler and thermoresistor, covered by a cap with a glass window	Lms24PD-03-TEM
TO-5 with a built-in thermocooler and thermoresistor, covered by a parabolic reflector with a glass window	Lms24PD-03-TEM-R
PD with a built-in preamplifier; TO-18 with a parabolic reflector without a window in an aluminum tube	Lms24PD-03-R-PA
PD with a built-in preamplifier; TO-18 with a parabolic reflector with a window in an aluminum tube	Lms24PD-03-RW-PA

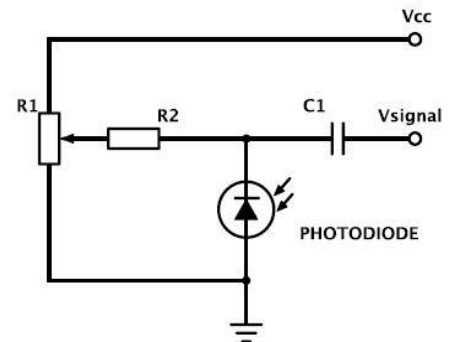
\*Standard photodiode packaging is non-hermetical, so that condensation during device operation and storage must be prevented.

### Recommended modes of PD operation

#### PD used as a current source (photovoltaic mode)



#### PD used in a photoconductive mode (under reverse bias)



We recommend using **photovoltaic mode**, when PD is used under no reverse bias.  
Use photoconductive mode (mode with reverse bias) with caution.

### IMPORTANT CAUTIONS:

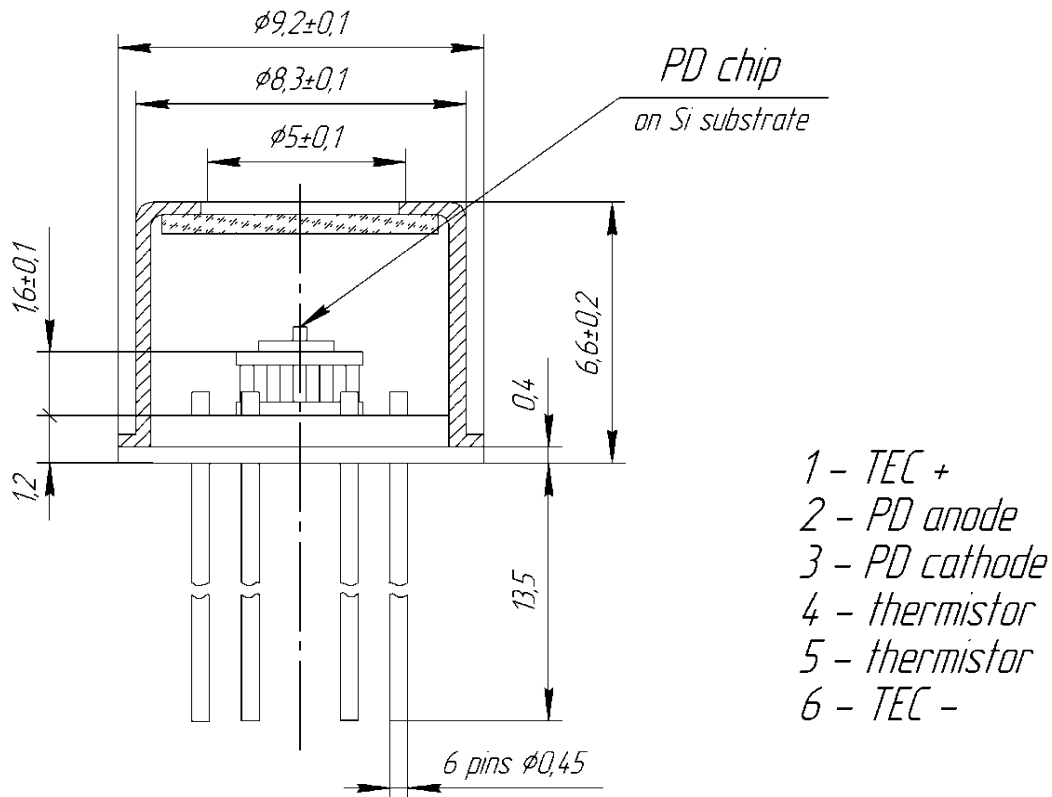
- please check your connection circuit before turning on the PD;
- please mind the PD polarity: PD anode is marked with a RED dot;
- please do not connect the PD to the multimeter.

### Related products:

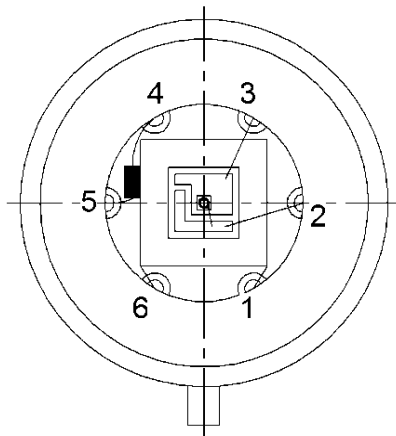
- **Light emitting diodes (LEDs)** - sources of IR radiation;
- **PAb preamplifier** - amplifies photocurrent generated by a PD and converts it into a voltage signal;
- **SDM synchronous detector** - enables synchronous operation of a PD coupled with a preamplifier and an LED coupled with a driver; performs conversion of an output PD preamplifier signal into DC voltage signal.

Technical Drawing

Lms24PD-03-TEM



TOP VIEW



BOTTOM VIEW

