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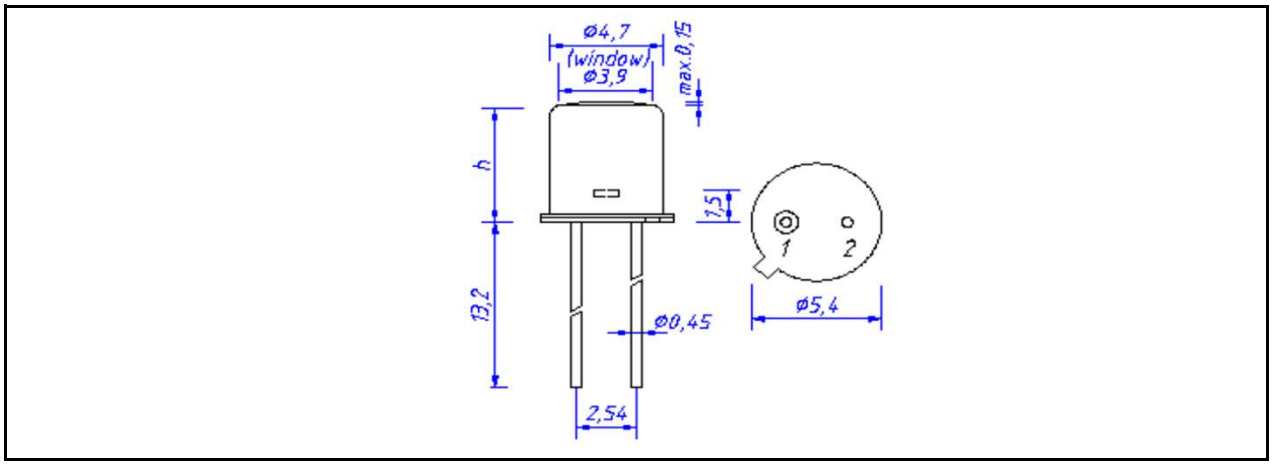
Data Sheet

UV photodiode EOPD-280-0-0.3-1

Rev. 06, 2017

Radiation	Type	Technology	Case
ultraviolet	UV-glass	SiC	TO-52



1 - anode, 2 - cathode + case, h=3.7 mm

Description:

Highly reliable low cost SiC photodiode with high spectral sensitivity in the UV range (210 nm - 355 nm), mounted in hermetically sealed TO-52 package with UV-glass window

Characteristics:

- optional with insulated mounting of the photodiode
- high temperature option for operating up to 150°C
- RoHS and WEE compliant

Applications:

- universal measurements in the UV range
- sterilization lamp monitoring
- flame monitoring

Maximum Ratings

T_{amb}= 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Active area size	A	0.365 x 0.365	mm^2
Active area	A	0.1	mm^2
Reverse voltage	V_R	20	V
Operating temperature range	T_{amb}	-40 to +125	°C
Storage temperature range	T_{stg}	-40 to +125	°C
Soldering temperature, 3 s	T_{sol}	260	°C

RoHS COMPLIANT Pb Pb-Free

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Data Sheet

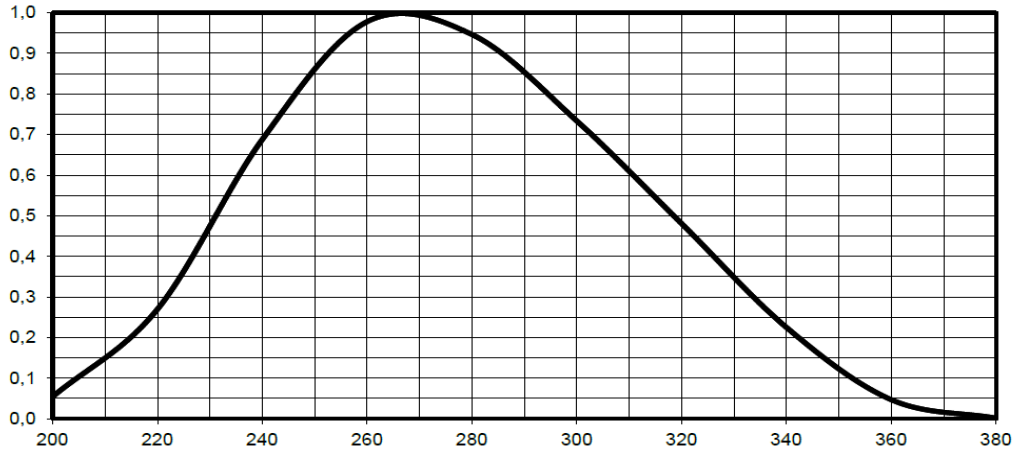
UV photodiode EOPD-280-0-0.3-1

Optical and Electrical Characteristics

T_{amb}= 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Dark current	V_R=1 V	I_D		10		fA
Peak sensitivity wavelength	V_R=0 V	λ_p		265		nm
Responsivity at λ_P	V_R=0 V	S_λ		0.18		A/W
Responsivity at λ=254 nm	V_R=0 V	S_λ		0.16		A/W
Sensitivity range at 0.1 S_{max}	V_R=0 V	λ_{min}, λ_{max}	210		355	nm
Junction capacitance	V_R=0 V	C_J		30		pF
Acceptance angle	V_R=0 V	φ		±40		deg

Relative spectral sensitivity



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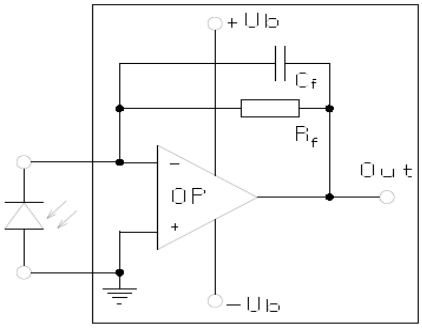
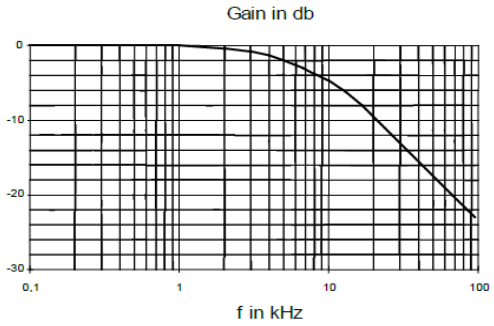
Data Sheet

UV photodiode **EOPD-280-0-0.3-1** Rev. 06, 2017

application example





The application example shows a typical circuit R_f is responsible fort he gain oft he circuit Cf compensates thereverse junction capacitance of the photodiode and the input capacitance of the OP-amp. The exact value of C_f depends on R_f, used OP-amp and capacitance of the circuit. A typical value is 1pF.
The chart shows dependence of amplitude of the application circuit with OP-amp = AD795, R_f = 10 MΩ and C_f = 1pF.

Art. Nr. 141 005

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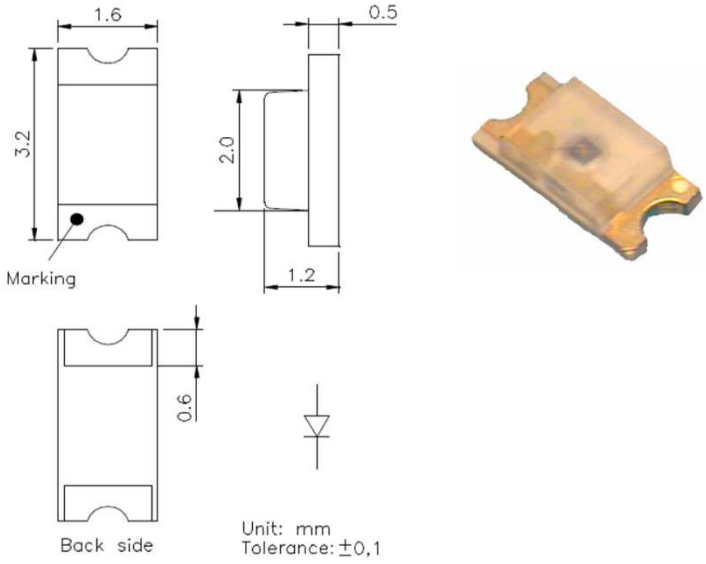
Data Sheet

Selective photodiode EOPD-525-1-0.9-1

Rev. 02, 2017

Wavelength range	Type	Case
green	GaP	SMD 3216



All sizes in mm

Description:

Narrow bandwidth and high spectral sensitivity in the green visible range (500…600 nm), compact design in SMD package with lens allows for easy circuit board mounting and assembling of arrays.

Applications:

Alarm systems, light barriers, daylight sensors, for nearly Vλ matched detectors.

Maximum Ratings

T_{amb}= 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Active area	A	0.73	mm^2
Temparature coefficient of I_D	TC(I_D)	5	%/K
Temparature coefficient of I_{PH}	TC(I_{PH})	0.25	%/K
Temparature coefficient of λ_C	TC(λ_C)	0.15	nm/K
Operating temperature range	T_{amb}	-20 to +85	°C
Storage temperature range	T_{stg}	-40 to +100	°C

RoHS COMPLIANT Pb Pb-Free

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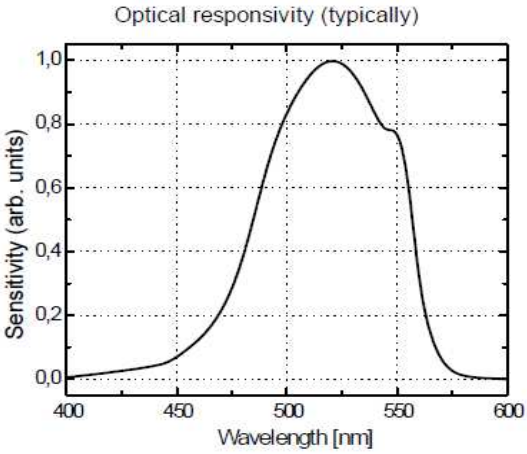
Data Sheet

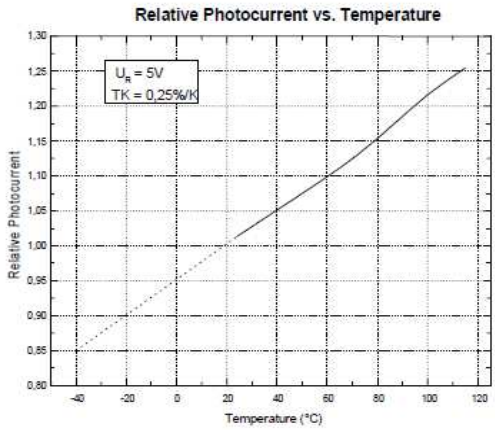
Selective photodiode **EOPD-525-1-0.9-1** Rev. 02, 2017

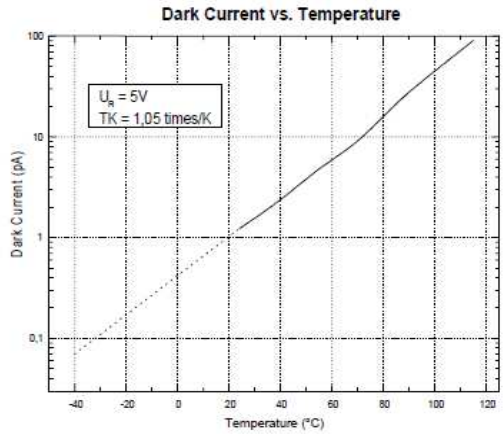
Optical and Electrical Characteristics

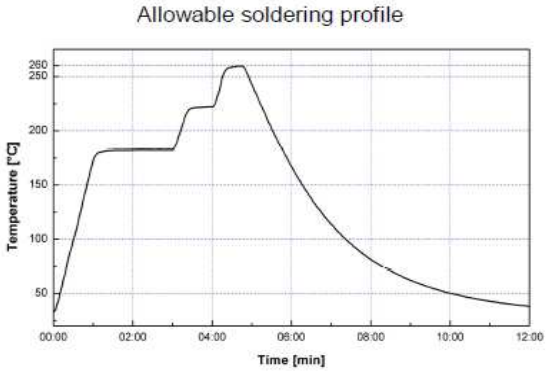
T_{amb}= 23°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Dark current	V_R=5 V	I_D		5	30	pA
Peak sensitivity wavelength	V_R=0 V	λ_p		525		nm
Responsivity at λ_p	V_R=0 V	S_λ		0.3		A/W
Sensitivity range at 1%	V_R=0 V	λ_{min}, λ_{max}	410		580	nm
Spectral bandwidth at 50%	V_R=0 V	$\Delta\lambda_{0,5}$		70		nm
Junction capacitance	V_R=0 V	C_J		100		pF
Switching times (R_L=50 Ω)	V_R=1 V	t_r; t_f		35		ns









Art. No. 142 005

RoHS COMPLIANT Pb-Free

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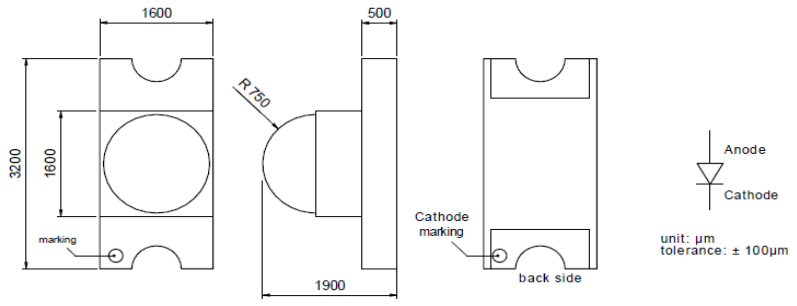
Data Sheet

Selective photodiode EOPD-525-1-0.9-2

Rev. 02, 2017

Wavelength range	Type	Case
green	GaP	SMD 3216 with lens



Description:

Narrow bandwidth and high spectral sensitivity in the green visible range (500…600 nm), compact design in SMD package with lens allows for easy circuit board mounting and assembling of arrays.

Applications

Alarm systems, light barriers, daylight sensors, for nearly V_λ matched detectors.

All sizes in mm

Maximum Ratings

T_{amb}= 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Active area	A	0.73	mm^2
Temparature coefficient of I_D	$TC(I_D)$	4.7	%/K
Temparature coefficient of I_{PH}	$TC(I_{PH})$	0.25	%/K
Temparature coefficient of λ_C	$TC(\lambda_C)$	0.15	nm/K
Operating temperature range	T_{amb}	-40 to +85	°C
Storage temperature range	T_{stg}	-40 to +100	°C

Optical and Electrical Characteristics

T_{amb}= 23°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Dark current	V_R=5 V	I_D		5	30	pA
Peak sensitivity wavelength	V_R=0 V	λ_p		525		nm
Responsivity at λ_p	V_R=0 V	S_λ	0.15	0.3		A/W
Sensitivity range at 1%	V_R=0 V	λ_{min}, λ_{max}	410		580	nm
Spectral bandwidth at 50%	V_R=0 V	$\Delta\lambda_{0,5}$		70		nm
Junction capacitance	V_R=0 V	C_J		100		pF
Switching times (R_L=50 Ω)	V_R=1 V	t_r; t_f		35		ns

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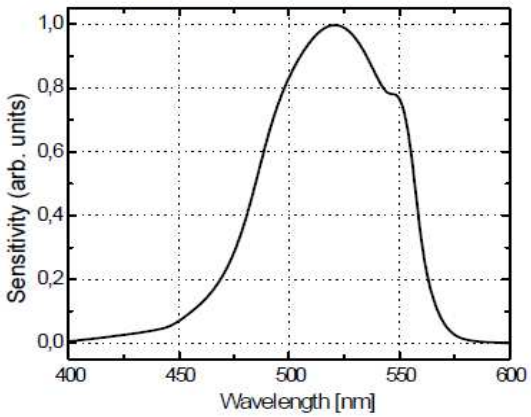
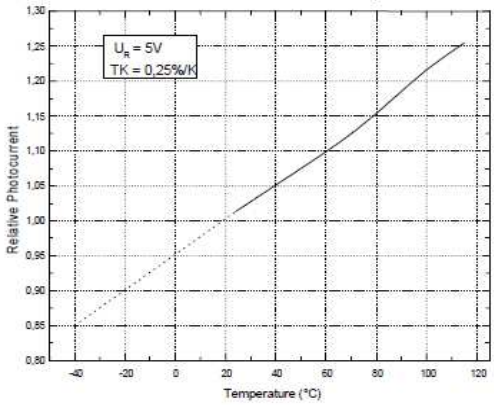
Data Sheet

Selective photodiode **EOPD-525-1-0.9-2** Rev. 02, 2017

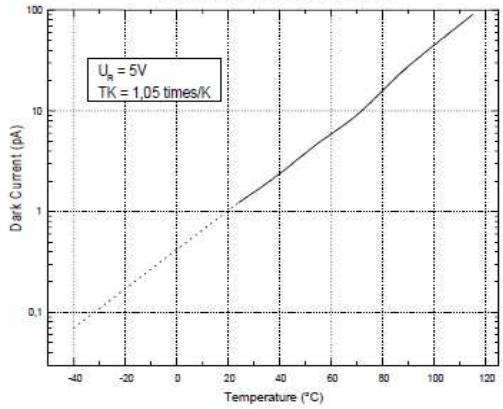
Optical responsivity (typically)



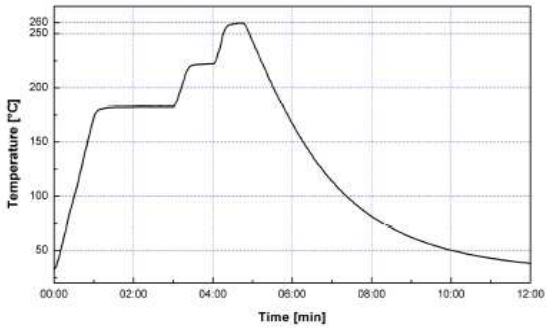
Relative Photocurrent vs. Temperature



Dark Current vs. Temperature



Allowable soldering profile



Art. No. 142 010

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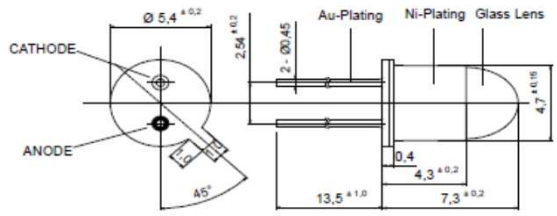
EPIGAP OPTRONIC GMBH

Product Data Sheet

PD IR **EOPD-880-0-0.5** Rev. 01 aus 2011

Radiation	Type	Case
infrared		TO46 with lens



Description:

Selective photodiode mounted in hermetically sealed TO-46 package. Narrow bandwith and high spectral sensitivity in the infrared range (810 … 950 nm)
Applications
alarm systems, light barriers, spectral sensors, optical communication

Maximum Ratings

T_{amb}= 25℃, unless otherwise specified

Parameter	Symbol	Value	Unit
Active area/ Effective active area	A/ A_{eff}	0.17	mm^2
Temperature coefficient of I_D	$T_C(I_D)$	5	%/ K
Temperature coefficient of S_λ at λ_p	$T_C(S_\lambda)$	0.25	%/ K
Operating temperature range	T_{amb}	-30 to +100	℃
Soldering temperature (t≤3s, 3mm from case)	T_{sld}	260	℃
Storage temperature range	T_{stg}	-40 to +125	℃
Acceptance angle at 50% S_λ	φ	6	deg.

Optical and Electrical Characteristics

T_{amb}= 25℃, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Breakdown voltage [1)]	I_R=10µA	V_R	5			V
Dark current	V_R=1V	I_D		1.0	2.5	nA
Responsivity at λ_P	V_R=0V	S_λ		0.3		A/W
Peak sensitivity wavelength [1)]	V_R=0V	λ_p		890		nm
Sensitivity range at 10%	V_R=0V	λ_{min}, λ_{max}	800		960	nm
Spectral bandwidth at 50%	V_R=0V	$\Delta\lambda_{0.5}$		115		nm
Noise equivalent power	λ = 880 nm	NEP		$8x10^{-15}$		$WHz^{1/2}$
Dark resistance	V_R=10 mV	R_D	20	100		GΩ
Switching time (R_L = 50 Ω)	V_R=1V	t_r, t_f		170		ns
Junction capacitance	V_R=1V	C_J		75		pF

[1)] for information only

Note: All measurements carried out with EPIGAP equipment

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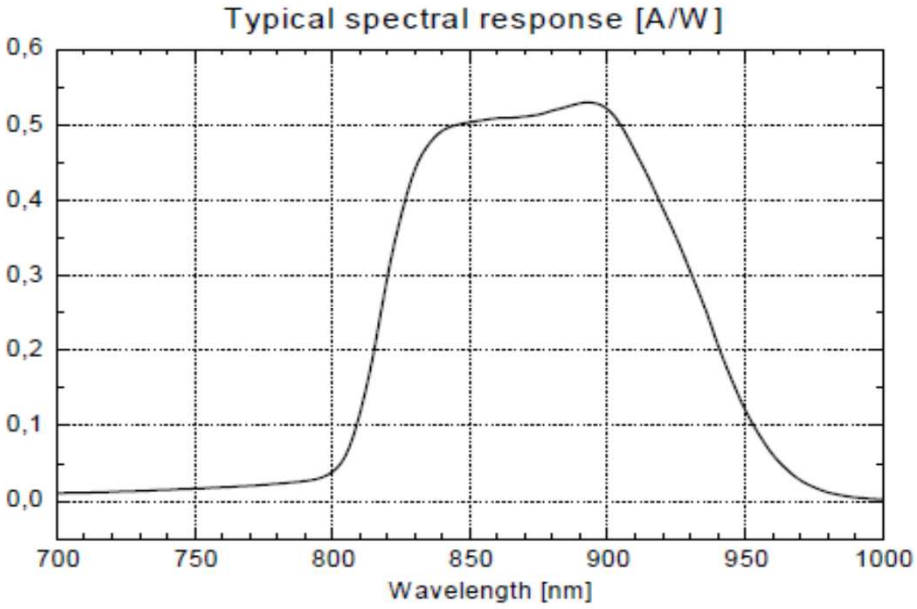
Product Data Sheet

PD IR **EOPD-880-0-0.5** Rev. 01 aus 2011

Labeling

Type	Lot N°	I_D at 1V (typ.) [pA]	Quantity
EOPD-880-0-0.5			



RoHS COMPLIANT
Pb Pb-Free

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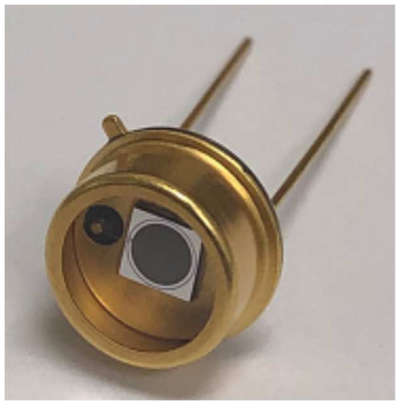
Data Sheet

Si Photodiode EOPD-940-0-2.52

Rev. 03, 2020

Spectral range	Type	Case
UV … infrared	Si	TO-5, glass window cap

Circular (Ø2.52) 5 mm^2 active area photodiode in a hermetic TO-5 metal can. It is well suited for applications requiring visible and near infrared (NIR) light detection.



Features:

> Wide dynamic range
> High shunt resistance
> Ultra low noise
> Broadband spectral coverage

Applications:

> Colorimeters
> Photometers
> Spectroscopy equipment
> Fluorescence

Absolute maximum ratings

Parameters	Symbol	Rating	Unit
Reverse voltage	V_R	50	V
Operating temperature range	T_{OPR}	-40...+100	°C
Storage temperature range	T_{STG}	-55...+125	°C
Lead soldering temperature*	T_{LS}	260	°C

*Time 5 sec max, position: up to 3 mm from the body

RoHS COMPLIANT Pb Pb-Free

Electro-optical characteristics:

T_{amb}= 25°C, unless otherwise specified

Parameters	Symbol	Min	Typ	Max	Unit	Test conditions
Dark current	I_D		0.1	1	nA	V_R=5 V
Breakdown voltage	V_{BR}	50			V	I_R=10 µA
Sensitivity range	λ	350		1100	nm	
Peak sensitivity WL	$λ_P$		950		nm	
Responsivity	$S_λ$		0.38		A/W	V_R=0 V, λ=633 nm
Responsivity	$S_λ$		0.55		A/W	V_R=0 V, λ=940 nm
Response time	t_R		30		ns	V_R=5 V, R_L=50 Ω, λ=635 nm
Junction capacitance	C_j		90		pF	V_R=0 V, 1 MHz
Junction capacitance	C_j		20	25	pF	V_R=5 V, 1 MHz
Shunt resistance	R_S	500	1000		MΩ	V_R=10 mV

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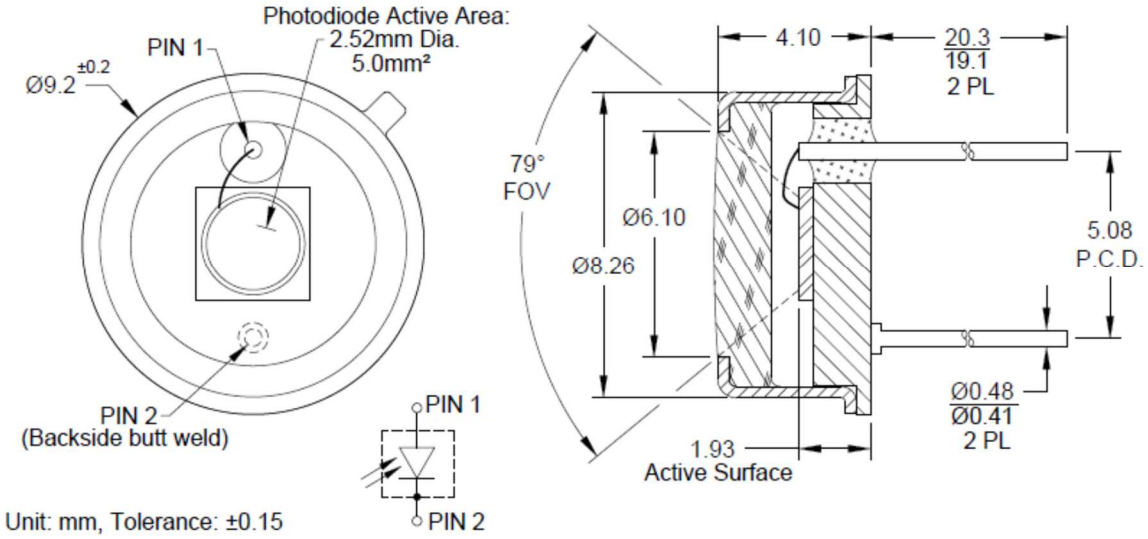
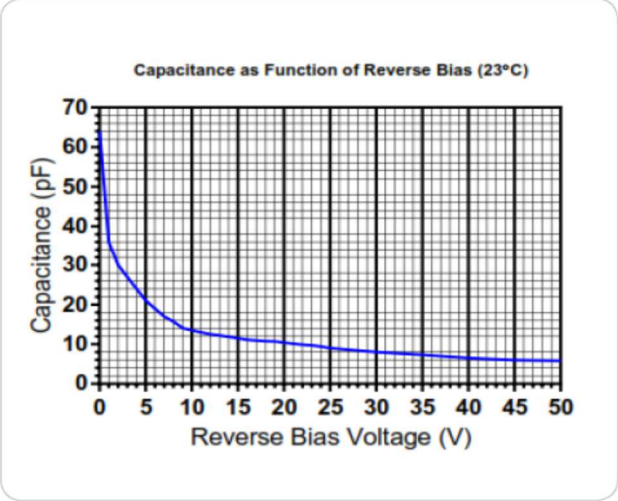
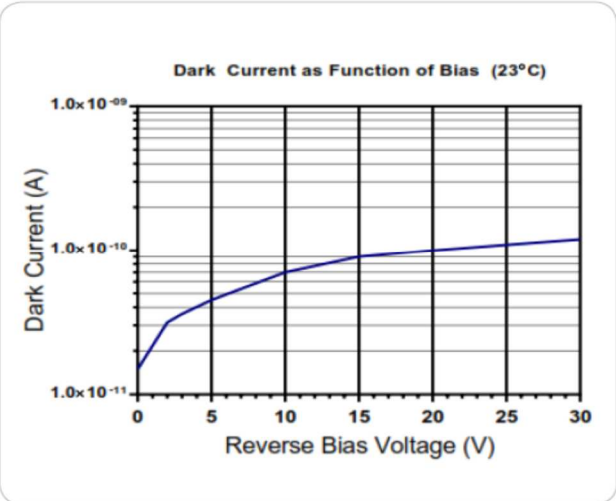
Si Photodiode **EOPD-940-0-2.52** Rev. 03, 2020



TO-5 package dimensions (2 pin)





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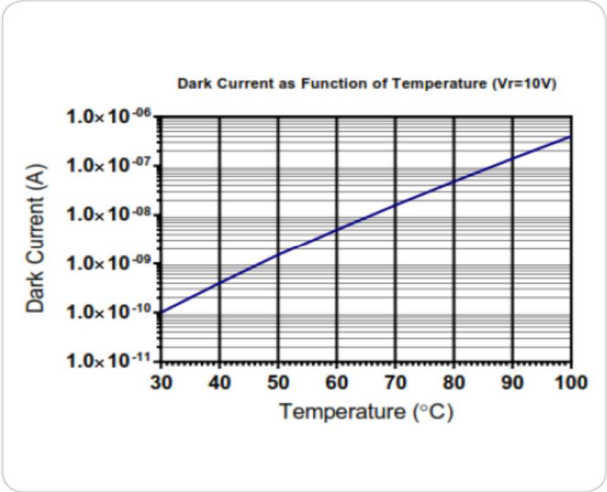
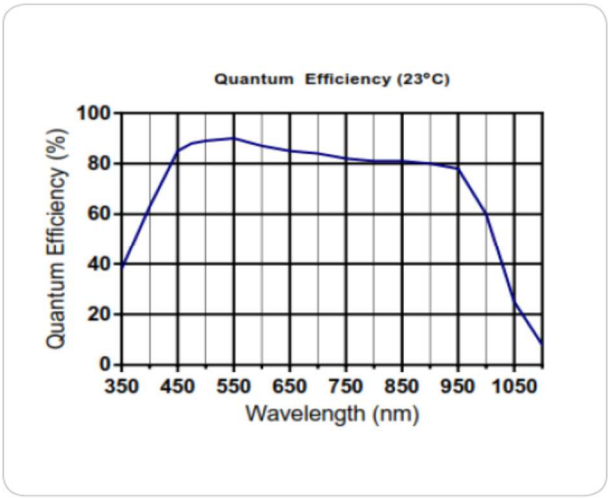
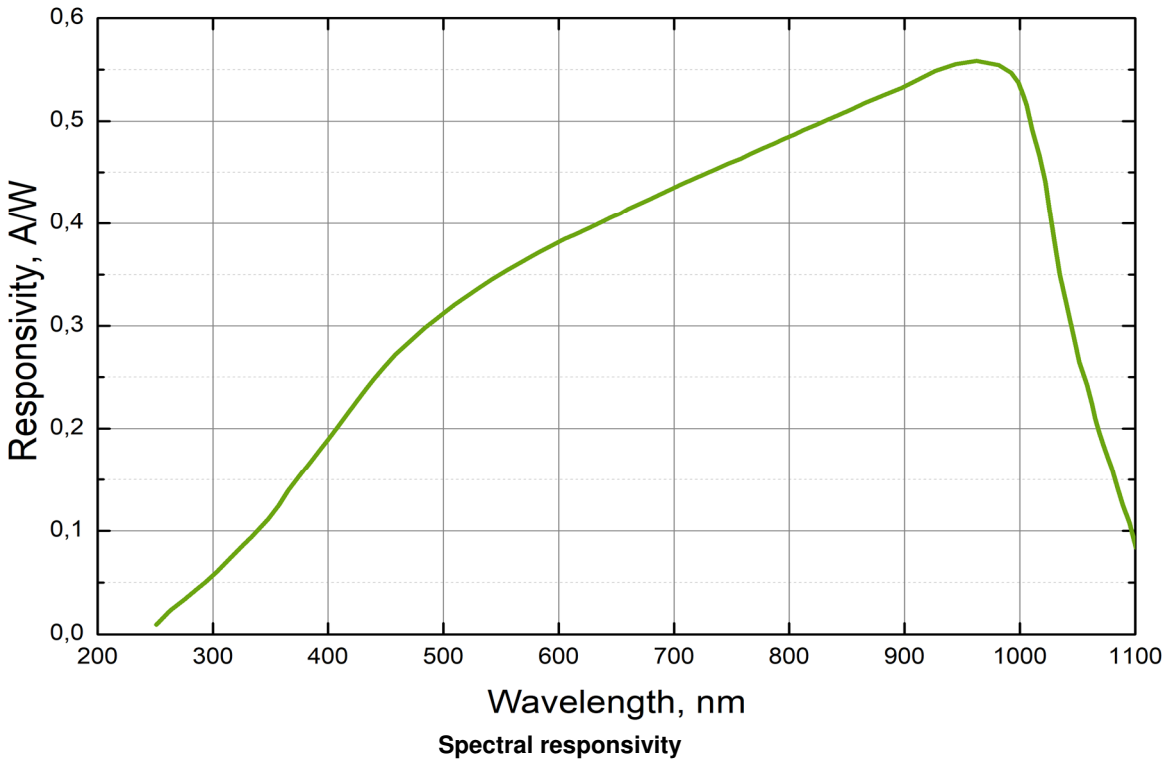
Si Photodiode **EOPD-940-0-2.52** Rev. 03, 2020







Spectral responsivity

Art. No. 143 044

RoHS COMPLIANT Pb Pb-Free

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