ROITHNER LASERTECHNIK GmbH
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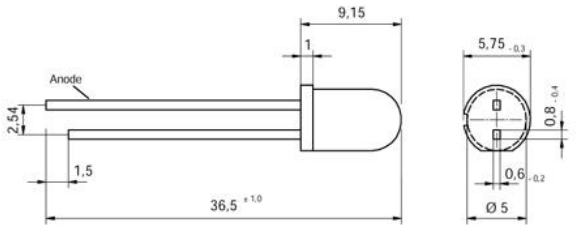
Photodiode EPD-880-5-0.5

04.07.2011 rev. 03

Wavelength	Type	Technology	Case
Infrared	Integrated filter	AlGaAs/GaAs	5 mm plastic lens



Description

Selective photodiode mounted in standard 5 mm package without standoff. Narrow bandwidth and high spectral sensitivity in the infrared range (810…950 nm).

Note: Special packages with standoff available on request

Applications

Alarm systems, light barriers, special sensors, analytics, optical communication

Miscellaneous Parameters

T_{amb} = 25℃, unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Active area		A	0.17	mm²
Temperature coefficient of I_D		$T_C(I_D)$	5	%/K
Operating temperature range		T_{amb}	-20 to +85	℃
Storage temperature range		T_{stg}	-30 to +100	℃
Soldering Temperature	t ≤ 3 s, 3 mm from case	T_{sld}	260	℃
Acceptance angle at 50% S_λ		φ	20	deg.

Optical and Electrical Characteristics

T_{amb} = 25℃, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Breakdown voltage[1)]	I_R = 10 µA	V_R	5			V
Dark current	V_R = 1 V	I_D		1.0	2.5	nA
Peak sensitivity wavelength	V_R = 0 V	λ_p		890		nm
Responsivity at λ_P	V_R = 0 V	S_λ	0.3	0.55		A/W
Sensitivity range at 10% [1)]	V_R = 0 V	λ_{min}, λ_{max}	800		960	nm
Spectral bandwidth at 50%	V_R = 0 V	$\Delta\lambda_{0.5}$		115		nm
Shunt resistance	V_R = 10 mV	R_{SH}		65		GΩ
Noise equivalent power	λ = 880 nm	NEP		$3.3x10^{-14}$		$W/\sqrt{Hz}$
Specific detectivity	λ = 880 nm	D*		$1.3x10^{12}$		$cm \cdot \sqrt{Hz} \cdot W^{-1}$
Junction capacitance	V_R = 0 V	C_J		120		pF
Switching time (R_L = 50 Ω)	V_R = 1 V	t_r, t_f		200		ns
Photo-current at λ_P = 875 nm[1,2)]	V_R = 0 V E_e = 1mW/cm²	I_{Ph}		7.5		µA

[1)] for information only

[2)] Halogen lamp source with appropriate filter

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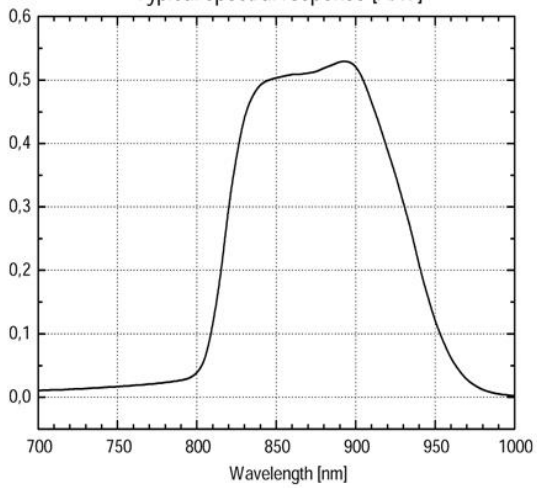
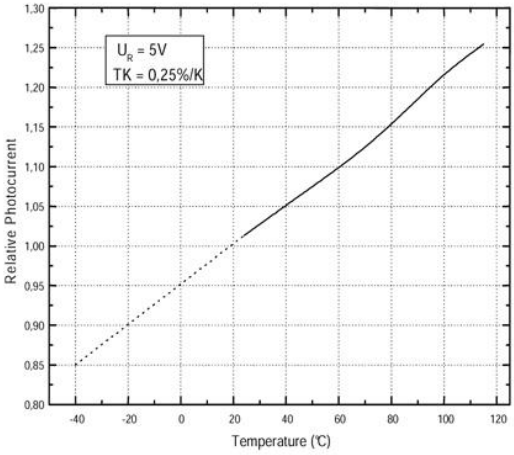
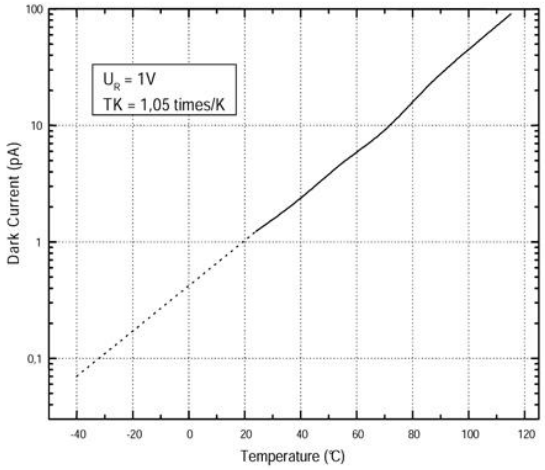
Typical spectral response [A/W]



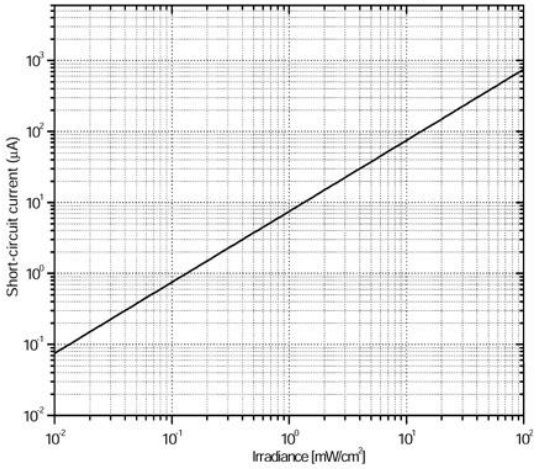
Relative Photocurrent vs. Temperature



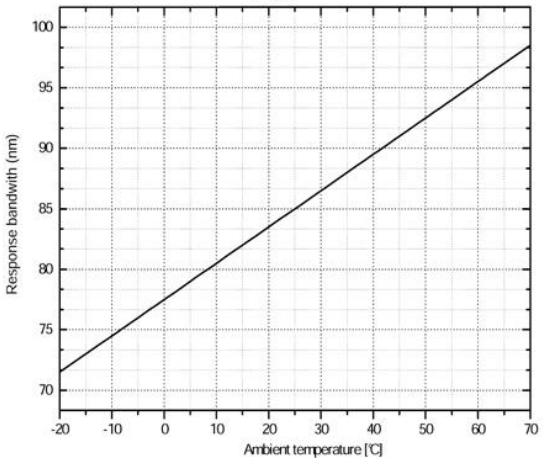
Dark Current vs. Temperature



Short-circuit current vs. irradiance (typical) [2)]



Spectral bandwith ($\Delta\lambda_{0.5}$) vs. ambient temperature



Typical radiant pattern