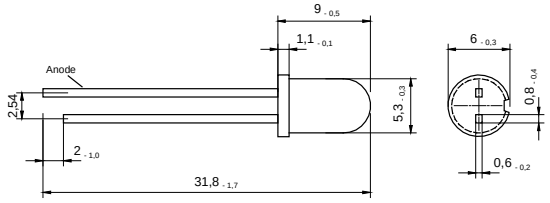
Photodiode EPD-660-5-0.9

Preliminary 27.04.2007 rev. 02/06

Wavelength	Type	Technology	Case
Red	water clear	AlGaAs/GaAs	5 mm plastic lens



Description

Selective photodiode mounted in standard 5 mm package without standoff . Narrow response range (660 nm peak) by means of integrated filter

Note: Special packages with standoff available on request

Applications

Optical communications, safety equipment, automation, analytics

Miscellaneous Parameters

T_{amb} = 25℃, unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Active area		A	0.62	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		40	300	pA
Peak sensitivity wavelength	V_R = 0 V	λ_p		660		nm
Responsivity at λ_P	V_R = 0 V	S_λ		0.42		A/W
Sensitivity range at 1% [1)]	V_R = 0 V	λ_{min}, λ_{max}	605		705	nm
Spectral bandwidth at 50%	V_R = 0 V	$\Delta\lambda_{0.5}$		80		nm
Shunt resistance	V_R = 10 mV	R_{SH}	500	600		GΩ
Noise equivalent power	λ = 660 nm	NEP		$8.5x10^{-15}$		$W/\sqrt{Hz}$
Specific detectivity	λ = 660 nm	D*		$9.2x10^{12}$		$cm \cdot \sqrt{Hz} \cdot W^{-1}$
Junction capacitance	V_R = 0 V	C_J		50		pF
Switching time (R_L = 50 Ω)	V_R = 1 V	t_r, t_f		40		ns
Photo-current at illuminant A[1,2)]	V_R = 0 V E_v = 1000 lx	I_{Ph}		1.8		µA

[1)] for information only

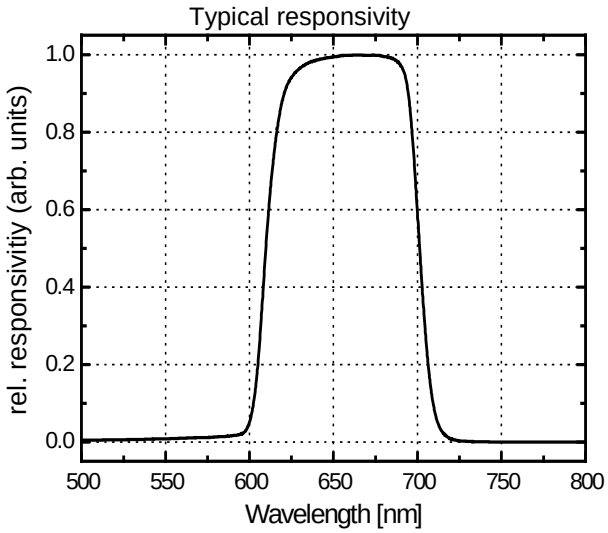
[2)] Standard light source with a color temperature of 2856 K

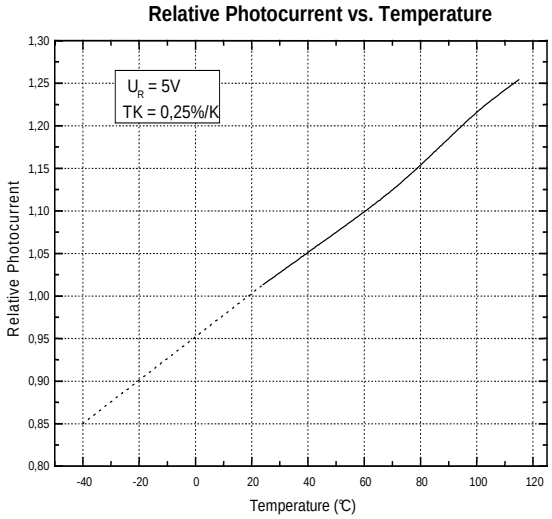
Note: All measurements carried out with *EPIGAP* equipment

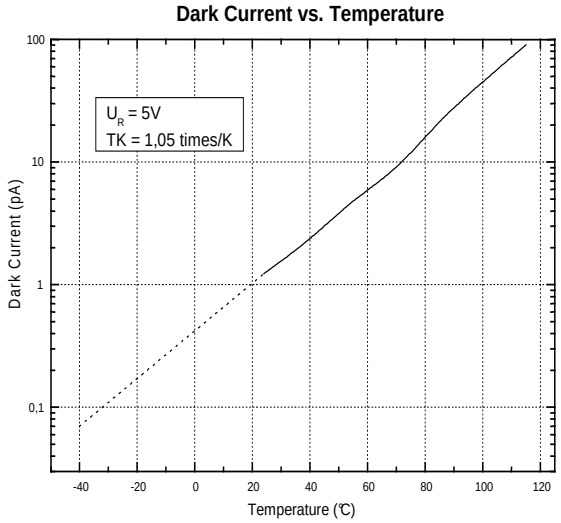
Labeling

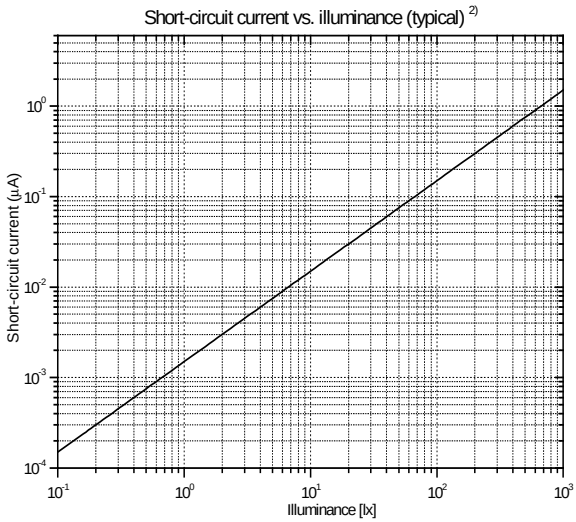
Type	Lot N°	R_D (typ.) [GΩ]	Quantity
EPD-660-5-0.9			

EPIGAP Optoelektronik GmbH, D-12555 Berlin, Köpenicker Str.325 b, Haus 201
Tel.: +49-30-6576 2543, Fax : +49-30-6576 2545


Typical responsivity
rel. responsivitiy (arb. units)
1.0
0.8
0.6
0.4
0.2
0.0
500
550
600
650
700
750
800
Wavelength [nm]


Relative Photocurrent vs. Temperature
U_R = 5V
TK = 0,25%/K
Relative Photocurrent
1,30
1,25
1,20
1,15
1,10
1,05
1,00
0,95
0,90
0,85
0,80
-40
-20
0
20
40
60
80
100
120
Temperature (°C)


Dark Current vs. Temperature
U_R = 5V
TK = 1,05 times/K
Dark Current (pA)
100
10
1
0,1
-40
-20
0
20
40
60
80
100
120
Temperature (°C)


Short-circuit current vs. illuminance (typical) 2)
Short-circuit current (µA)
10^0
10^-1
10^-2
10^-3
10^-4
10^-1
10^0
10^1
10^2
10^3
Illuminance [lx]