



EPD-470-3-0.5



TECHNICAL DATA

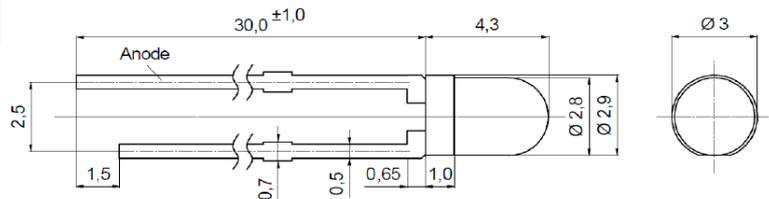
Selective Photodiode, 3 mm package

GaP

EPD-470-3-0.5 is a GaP based photodiode, mounted into on a lead frame with a clear epoxy lens, without standoff leads. This device is featuring a narrow bandwidth and high spectral sensitivity of 400 – 500 nm.

Specifications

- Peak Responsivity: 470 nm
- Package: 3 mm molding
- Type: Lead frame
- Resin Material: Epoxy resin



(Unit: mm)

Parameters ($T_A=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Active Area	A	0.17	mm ²
Temperature Coefficient of I_D	$T_C(I_D)$	5	1/K
Operating Temperature	T_{opr}	-40 ... +85	°C
Storage Temperature	T_{stg}	-40 ... +100	°C
Soldering Temperature *1	T_{sol}	240	°C

*1 must be completed within 3 seconds at 240°C

Electro-Optical Characteristics

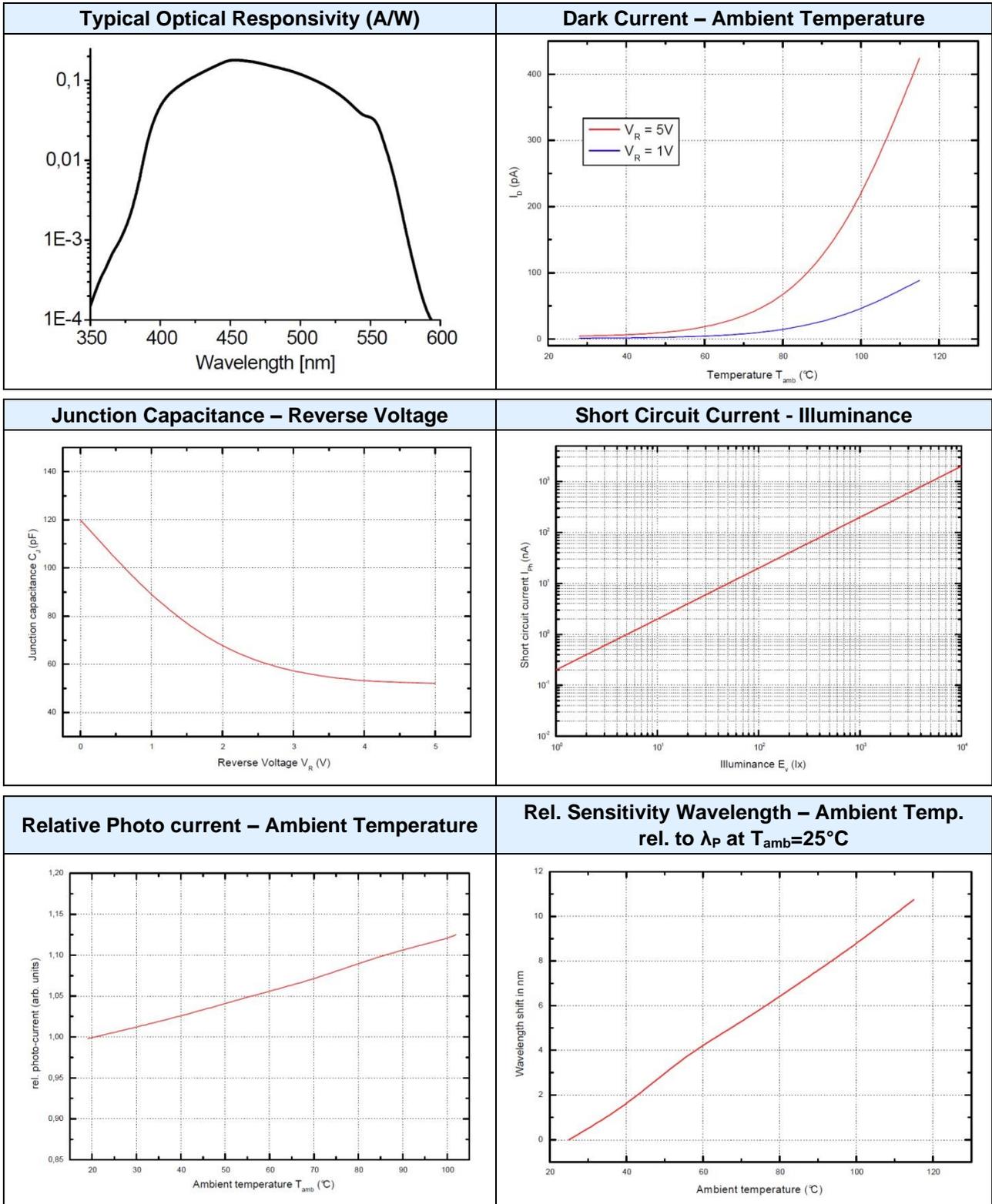
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Voltage *1	V_R	$I_R=10\mu\text{A}$	-	10	-	V
Dark Current	I_D	$V_R=5\text{V}$	-	5	30	pA
Central Sensitivity Wavelength	λ_C	$V_R=0\text{V}$	460	470	480	nm
Responsivity at λ_C	S_λ	$V_R=0\text{V}$	-	0.3	-	A/W
Sensitivity Range at 1% *1	$\lambda_{min}, \lambda_{max}$	$V_R=0\text{V}$	385	-	565	nm
Spectral Bandwidth at 50%	$\Delta\lambda_{0.5}$	$V_R=0\text{V}$	-	100	-	nm
Shunt Resistance	R_{SH}	$V_R=10\text{mV}$	70	100	-	GΩ
Noise Equivalent Power	NEP	$\lambda=470\text{nm}$	-	4.4×10^{-15}	-	$\text{W}/\sqrt{\text{Hz}} \cdot \text{W}^{-1}$
Specific Detectivity	D^*	$\lambda=470\text{nm}$	-	9.3×10^{12}	-	$\text{cm} \cdot \sqrt{\text{Hz}} \cdot \text{W}^{-1}$
Junction Capacitance	C_J	$V_R=0\text{V}$	-	120	-	pF
Switching Time ($R_L=50\Omega$)	t_r, t_f	$V_R=5\text{V}$	-	200	-	ns
Photo Current at Illuminant A	I_{Ph}	$V_R=0\text{V}$ $E_V=1000\text{lx}$	-	0.2	-	μA

*1 information only

Note: The above specifications are for reference purpose only and subjected to change without prior notice.



Typical Performance Curves





Precaution for Use

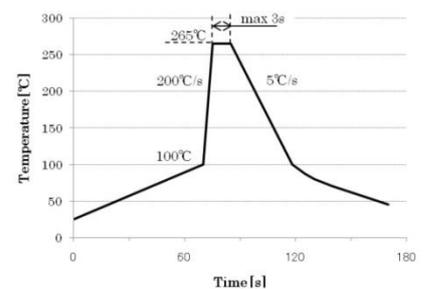
1. Lead Forming

- Lead forming should be done before soldering.
- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. DO NOT use the base of the lead frame as a fulcrum during lead forming!
- DO NOT apply any bending stress to the base of the lead. The stress to the base may damage the PD's characteristics or it may break the PDs.
- When mounted the PDs onto the printed circuit board, the holes on the circuit board should be exactly aligned with the leads of PDs. If the PDs are mounted with stress at the leads, it causes deterioration of the lead and it will degrade the PDs.

2. Soldering Conditions

- Solder the PDs no closer than 3 mm from the base of the lead.
- DO NOT apply any stress to the lead particularly when heat.
- After soldering the PDs, the lead should be protected from mechanical shock or vibration until the PDs return to room temperature.
- The PDs must not be reposition after soldering.
- When it is necessary to clamp the PDs to prevent soldering failure, it is important to minimize the mechanical stress on the PDs.
- Cut the PD leads at room temperature. Cutting the leads at high temperature may cause the failure of the PDs.

Soldering Conditions



3. Static Electricity

- The PDs are very sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band and/or an anti-electrostatic glove be used when handling the PDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the PDs.

