



# ROITHNER LASERTECHNIK GmbH

WIEDNER HAUPTSTRASSE 76 IO40 VIENNA AUSTRIA  
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## Photodiode

## EPD-440-0/3.6

Preliminary

11.04.2007

rev. 03/07

Wavelength	Type	Technology	Case
UV	Schottky Contact	GaP	TO-39 + UV-glass

<p>Dimensions: 5.08, 0.15 ±0.08, 3.25 ±0.1, 5.90 ±0.1, 8.13 ±0.1, 13.5 ±1.0, 2.00 ±0.05, 9.50 ±0.1, 0.80 ±0.08, 45.00°, 07.62, 09.14, EUC-69</p>	<p><b>Description</b> Wide bandwidth and high spectral sensitivity in the UV and visible range (190 nm - 570 nm), mounted in hermetically sealed TO-39 package with UV-glass window</p> <p><b>Applications</b> Medical engineering (dermatology), output check of UV - lamps and oil or gas burner flame, measurement and control of ecological parameters, radiation control for a solarium, UV water purification facilities</p>
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### Miscellaneous Parameters

T<sub>amb</sub> = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Active area		A	10.9	mm <sup>2</sup>
Temperature coefficient of I <sub>D</sub>		T <sub>C</sub> (I <sub>D</sub> )	7.0	%/K
Operating temperature range		T <sub>amb</sub>	-40 to +125	°C
Storage temperature range		T <sub>stg</sub>	-40 to +125	°C
Acceptance angle at 50% S <sub>λ</sub>		φ	135	deg.

### Optical and Electrical Characteristics

T<sub>amb</sub> = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Breakdown voltage <sup>1)</sup>	I <sub>R</sub> = 10 μA	V <sub>R</sub>	5			V
Dark current	V <sub>R</sub> = 5 V	I <sub>D</sub>		20	80	pA
Peak sensitivity wavelength	V <sub>R</sub> = 0 V	λ <sub>p</sub>		440		nm
Responsivity at λ <sub>p</sub>	V <sub>R</sub> = 0 V	S <sub>λ</sub>		0.17		A/W
Sensitivity range at 1%	V <sub>R</sub> = 0 V	λ <sub>min</sub> , λ <sub>max</sub>	190		570	nm
Spectral bandwidth at 50%	V <sub>R</sub> = 0 V	Δλ <sub>0.5</sub>		180		nm
Shunt resistance	V <sub>R</sub> = 10 mV	R <sub>SH</sub>	50	70		GΩ
Noise equivalent power	λ = 440 nm	NEP		1.5x10 <sup>-14</sup>		W/√Hz
Specific detectivity	λ = 440 nm	D*		2.2x10 <sup>12</sup>		cm · √Hz · W <sup>-1</sup>
Junction capacitance	V <sub>R</sub> = 0 V	C <sub>J</sub>		2.6		nF
Switching time (R <sub>L</sub> = 50 Ω)	V <sub>R</sub> = 5 V	t <sub>r</sub> , t <sub>f</sub>		1/130		ns
Photo current at λ = 440 nm <sup>1,2)</sup>	V <sub>R</sub> = 0 V E <sub>e</sub> = 1 mW/cm <sup>2</sup>	I <sub>Ph</sub>		14		μA

<sup>1)</sup>for information only

<sup>2)</sup>measured with common halogen lamp source and appropriate filter



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Typical responsivity

EPD-440-0

