



# ROITHNER LASERTECHNIK GmbH

WIEDNER HAUPTSTRASSE 76 IO40 VIENNA AUSTRIA  
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## Photodiode

## EPD-365-0-1.4

Preliminary

11.04.2007

rev. 03/07

| Wavelength | Type             | Technology | Case                 |
|------------|------------------|------------|----------------------|
| UV         | Schottky Contact | GaP        | TO-46 + UG-11 filter |

|  |   |
|--|---|
|  | <p><b>Description</b><br/>Wide bandwidth and high spectral sensitivity in the UV range (245 nm - 400 nm), mounted in hermetically sealed TO-46 package with UG11 UV filter-glass window</p> <p><b>Applications</b><br/>Medical engineering (dermatology), output check of UV - lamps and gas burner flame, measurement and control of ecological parameters, radiation control for a solarium, UV water purification facilities</p> |
|--|---|

### Miscellaneous Parameters

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

| Parameter                                 | Test conditions | Symbol                           | Value       | Unit            |
|---|-----------------|----------------------------------|-------------|-----------------|
| Active area                               |                 | A                                | 1.2         | 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                                | 50          | 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>                      |     | 5                     | 30  | pA                         |
| Peak sensitivity wavelength                 | V <sub>R</sub> = 0 V  | λ <sub>p</sub>                      |     | 365                   |     | nm                         |
| Responsivity at λ <sub>p</sub>              | V <sub>R</sub> = 0 V  | S <sub>λ</sub>                      |     | 0.07                  |     | A/W                        |
| Sensitivity range at 1%                     | V <sub>R</sub> = 0 V  | λ <sub>min</sub> , λ <sub>max</sub> | 245 |                       | 400 | nm                         |
| Spectral bandwidth at 50%                   | V <sub>R</sub> = 0 V  | Δλ <sub>0.5</sub>                   |     | 85                    |     | nm                         |
| Shunt resistance                            | V <sub>R</sub> = 10 mV  | R <sub>SH</sub>                     | 150 | 200                   |     | GΩ                         |
| Noise equivalent power                      | λ = 365 nm  | NEP                                 |     | 1.8x10 <sup>-14</sup> |     | W/√Hz                      |
| Specific detectivity                        | λ = 365 nm  | D*                                  |     | 5.9x10 <sup>12</sup>  |     | cm · √Hz · W <sup>-1</sup> |
| Junction capacitance                        | V <sub>R</sub> = 0 V  | C <sub>J</sub>                      |     | 250                   |     | pF                         |
| Switching time (R <sub>L</sub> = 50 Ω)      | V <sub>R</sub> = 5 V  | t <sub>r</sub> , t <sub>f</sub>     |     | 1/20                  |     | ns                         |
| Photo current at λ = 365 nm <sup>1,2)</sup> | V <sub>R</sub> = 0 V<br>E <sub>e</sub> = 1 mW/cm <sup>2</sup> | I <sub>Ph</sub>                     |     | 0.3                   |     | 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

