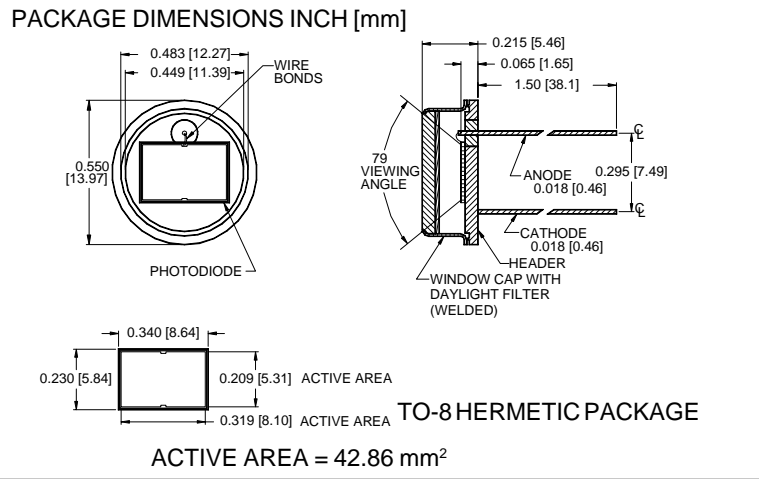


# PHOTONIC DETECTORS INC.

## Silicon Photodiode, Blue Enhanced Photovoltaic with daylight filter Type PDB-V109F



### FEATURES

- Low noise
- Blue enhanced
- High shunt resistance
- High response

### DESCRIPTION

The **PDB-V109F** is a silicon, PIN planar diffused, blue enhanced photodiode. Ideal for low noise photovoltaic applications. Packaged in a hermetic TO-8 metal can with a flat window and a daylight filter.

### APPLICATIONS

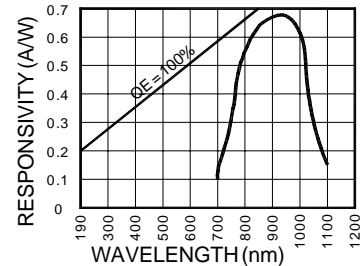
- Instrumentation
- Industrial controls
- Photoelectric switches
- Encoder sensors

### ABSOLUTE MAXIMUM RATING (TA=25°C unless otherwise noted)

| SYMBOL           | PARAMETER                   | MIN | MAX  | UNITS |
|------------------|-----------------------------|-----|------|-------|
| V <sub>BR</sub>  | Reverse Voltage             |     | 75   | V     |
| T <sub>STG</sub> | Storage Temperature         | -55 | +150 | °C    |
| T <sub>O</sub>   | Operating Temperature Range | -40 | +125 | °C    |
| T <sub>S</sub>   | Soldering Temperature*      |     | +240 | °C    |
| I <sub>L</sub>   | Light Current               |     | 0.5  | mA    |

\*1/16 inch from case for 3 secs max

### SPECTRAL RESPONSE



### ELECTRO-OPTICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| SYMBOL             | CHARACTERISTIC                    | TEST CONDITIONS                | MIN | TYP                   | MAX  | UNITS   |
|--------------------|-----------------------------------|--------------------------------|-----|-----------------------|------|---------|
| I <sub>SC</sub>    | Short Circuit Current             | H = 100 fc, 2850 K             | 405 | 500                   |      | mA      |
| I <sub>D</sub>     | Dark Current                      | H = 0, V <sub>R</sub> = 10 mV  |     | 66                    | 200  | pA      |
| R <sub>SH</sub>    | Shunt Resistance                  | H = 0, V <sub>R</sub> = 10 mV  | 50  | 150                   |      | MΩ      |
| TC <sub>RSH</sub>  | R <sub>SH</sub> Temp. Coefficient | H = 0, V <sub>R</sub> = 10 mV  |     | -8                    |      | % / °C  |
| C <sub>J</sub>     | Junction Capacitance              | H = 0, V <sub>R</sub> = 0 V**  |     | 4,500                 |      | pF      |
| λ <sub>range</sub> | Spectral Application Range        | Spot Scan                      | 350 |                       | 1100 | nm      |
| λ <sub>p</sub>     | Spectral Response - Peak          | Spot Scan                      |     | 950                   |      | nm      |
| V <sub>BR</sub>    | Breakdown Voltage                 | I = 10 mA                      | 20  | 30                    |      | V       |
| NEP                | Noise Equivalent Power            | V <sub>R</sub> = 10 mV @ Peak  |     | 1.0x10 <sup>-14</sup> |      | W / √Hz |
| tr                 | Response Time                     | RL = 1 KΩ V <sub>R</sub> = 0 V |     | 1,000                 |      | nS      |

Information in this technical data sheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice. \*\*f = 1 MHz

[FORM NO. 100-PDB-V109F REV N/C]