

### FEATURES

- Large active area
- High speed
- Low cost

**DESCRIPTION:** The **PDB-C142** detector is a 4.10 mm<sup>2</sup> planar pin photodiode packaged in a T 1 3/4, water clear plastic housing. Designed for high speed, low capacitance, photoconductive applications. The **PDB-C142F** includes a daylight filter.

### APPLICATIONS

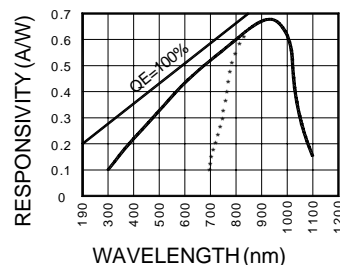
- Smoke detectors
- Light dimmers
- TV & VCR remotes

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

| SYMBOL           | PARAMETER                   | MIN | MAX  | UNITS |
|------------------|-----------------------------|-----|------|-------|
| V <sub>BR</sub>  | Reverse Voltage             |     | 50   | V     |
| T <sub>STG</sub> | Storage Temperature         | -40 | +100 | °C    |
| T <sub>O</sub>   | Operating Temperature Range | -40 | +80  | °C    |
| T <sub>S</sub>   | Soldering Temperature*      |     | +260 | °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              | 100 | 150                 |      | μA     |
| I <sub>D</sub>    | Dark Current               | H = 0, V <sub>R</sub> = 10 V    |     | 5                   | 30   | nA     |
| R <sub>SH</sub>   | Shunt Resistance           | H = 0, V <sub>R</sub> = 10 mV   | 100 | 500                 |      | MΩ     |
| TCR <sub>SH</sub> | RSH 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*    |     | 18                  | 25   | pF     |
| λrange            | Spectral Application Range | (without daylight filter)**     | 400 |                     | 1100 | nm     |
| λp                | Spectral Response - Peak   |                                 |     | 950                 |      | nm     |
| V <sub>BR</sub>   | Breakdown Voltage          | I = 10 μA                       | 15  | 25                  |      | V      |
| NEP               | Noise Equivalent Power     | V <sub>R</sub> = 10 V @ Peak    |     | 2x10 <sup>-14</sup> |      | W/ √Hz |
| tr                | Response Time              | RL = 1 KΩ V <sub>R</sub> = 10 V |     | 50                  |      | 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, \*\* daylight filter= 700 - 1100 nm