

DESCRIPTION

The **PDB-C171SM** is a blue enhanced PIN silicon photodiode ideal for high speed photoconductive or photovoltaic applications assembled in a compact surface mount package. SMD package classified as a sensitivity level 4.

FEATURES

- Surface Mount
- Photoconductive
- High Speed
- Low cost

RELIABILITY

Contact Luna for recommendations on specific test conditions and procedures.

APPLICATIONS

- Photointerrupters
- Oximeter sensors
- Barcode
- Glucometers



ABSOLUTE MAXIMUM RATINGS

| SYMBOL | MIN | MAX | UNITS | |
|---------------------------|-----|--------|--------------------|---|
| Reverse Voltage | - | - 60 | V | $T_a = 23^{\circ}\text{C}$ UNLESS OTHERWISE NOTED |
| Storage Temperature | -40 | - +100 | $^{\circ}\text{C}$ | - |
| Operating Temperature | -40 | to +80 | $^{\circ}\text{C}$ | - |
| Soldering Temperature | - | - +260 | $^{\circ}\text{C}$ | - |
| Wavelength Range | 400 | - 1050 | Nm | |
| Maximum Power Dissipation | - | - 215 | MW | |

* 1/16 inch from case for 3 seconds max.

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.

OPTO-ELECTRICAL PARAMETERS

T_a = 23°C UNLESS NOTED OTHERWISE

| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------------|-------------------------------------|------|---------------------|-----|-------|
| Breakdown Voltage | I _{bias} = 10 μA | 60 | - | - | V |
| Responsivity | λ = 900 nm | 0.60 | 0.68 | - | A/W |
| Responsivity | λ = 1050 nm | - | 0.3 | - | A/W |
| Dark Current | V _{bias} = 10V | - | 2 | 30 | nA |
| Capacitance | V _{bias} = 3V; f = 1 MHz | - | 25 | - | pF |
| Rise Time (1KΩ load) | V _{bias} = 10V; λ = 820 nm | - | 100 | - | ns |
| Noise Equivalent Power | λ = 950 nm V _r = 10V | - | 4X10 ⁻¹⁴ | - | W/√Hz |

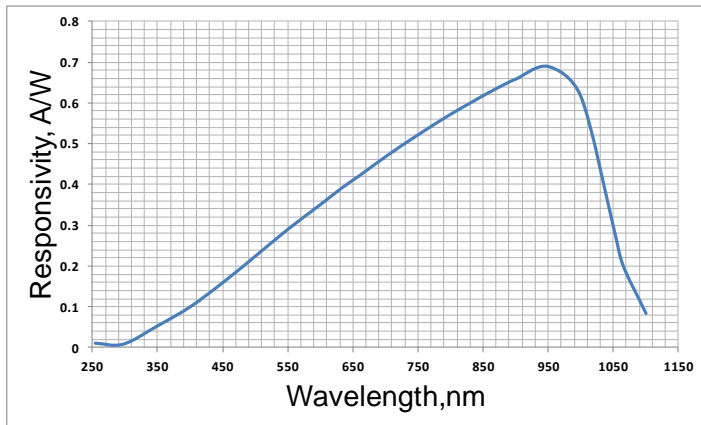
**Response time of 10% to 90% is specified at 820nm wavelength light.

SOLDERING

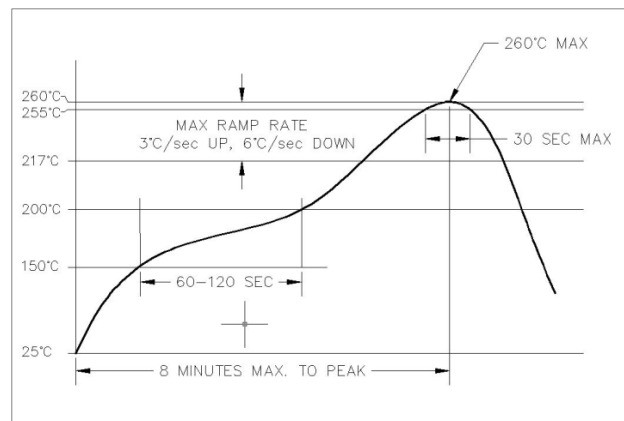
| | RECOMMENDATION | |
|----------------------------|----------------|--------------------------|
| Wave | Not Advised | |
| IR Oven Reflow | Allowed | See reflow profile. |
| Forced Convection Reflow | Recommended | See reflow profile. |
| Convection Reflow | Recommended | See reflow profile. |
| Vapor Phase Reflow | Recommended | See reflow profile. |
| Manual | Allowed | 260°C for 3 seconds max. |
| Moisture Sensitivity Level | 4 | J-STD-033 |

TYPICAL PERFORMANCE

SPECTRAL RESPONSE



REFLOW PROFILE



NOISE vs TEMPRATURE

