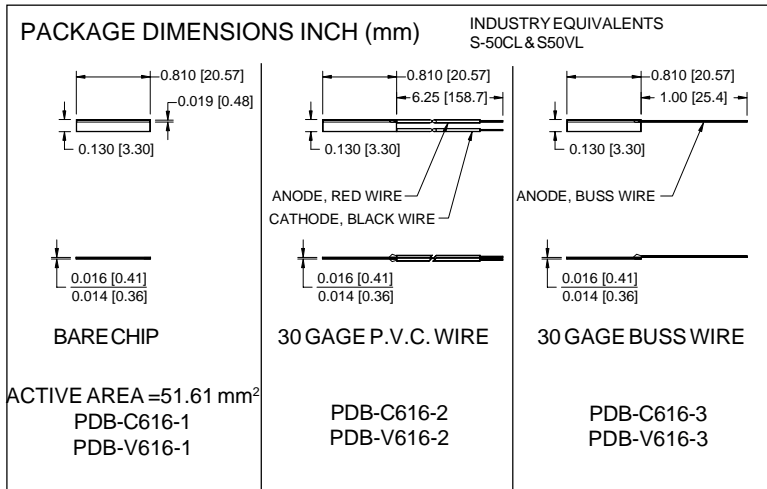


PHOTONIC DETECTORS INC.

Silicon Photodiode, Blue Enhanced Solderable Chips Photoconductive Type PDB-C616 Photovoltaic Type PDB-V616



FEATURES

- Blue enhanced
- Photovoltaic type
- Photoconductive type
- High quantum efficiency

DESCRIPTION:

Low cost blue enhanced planar diffused silicon solderable photodiode. The **PDB-V616** cell is designed for low noise, photovoltaic applications. The **PDB-C616** cell is designed for low capacitance, high speed, photoconductive operation. They are available bare, PVC or buss wire leads.

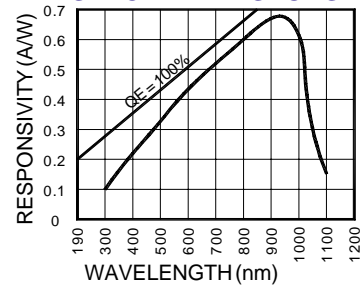
APPLICATIONS

- Optical encoder
- Position sensor
- Industrial controls
- Instrumentation

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

| SYMBOL | PARAMETER | PDB-C616 | | PDB-V616 | | UNITS |
|------------------|-----------------------------|----------|------|----------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| V _{BR} | Reverse Voltage | | 75 | | 25 | V |
| T _{STG} | Storage Temperature | -40 | +125 | -40 | +125 | °C |
| T _O | Operating Temperature Range | -40 | +100 | -40 | +100 | °C |
| T _S | Soldering Temperature | | +224 | | +224 | °C |
| I _L | Light Current | | 500 | | 500 | mA |

SPECTRAL RESPONSE



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

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | PDB-C616 | | | PDB-V616 | | | UNITS |
|--------------------|-----------------------------------|----------------------------------|-----------------------------|-----|------|-----------------------------|------|------|---------|
| | | | MIN | TYP | MAX | MIN | TYP | MAX | |
| I _{SC} | Short Circuit Current | H = 100 fc, 2850 K | 700 | 725 | | 560 | 650 | | mA |
| I _D | Dark Current | H = 0, V _R = 5 V* | | 100 | 200 | | 35 | 75 | nA |
| R _{SH} | Shunt Resistance | H = 0, V _R = 10 mV | 1 | 2 | | 5 | 10 | | MΩ |
| TC R _{SH} | R _{SH} Temp. Coefficient | H = 0, V _R = 10 mV | | -8 | | | -8 | | % / °C |
| C _J | Junction Capacitance | H = 0, V _R = 5 V** | | 300 | | | 6000 | | pF |
| λ _{range} | Spectral Application Range | Spot Scan | 350 | | 1100 | 350 | | 1100 | nm |
| λ _p | Spectral Response - Peak | Spot Scan | | 940 | | | 940 | | nm |
| V _{BR} | Breakdown Voltage | I = 10 mA | 25 | 50 | | 5 | 15 | | V |
| NEP | Noise Equivalent Power | V _R = 0 V @ Peak | 7.0 x 10 ⁻¹² TYP | | | 2.0 x 10 ⁻¹³ TYP | | | W / √Hz |
| t _r | Response Time | RL = 1 KΩ V _R = 5 V** | | 36 | | | 1800 | | nS |

*V_R = 100 mV on Photovoltaic type **V_R = 0 V on Photovoltaic type

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.

[FORM NO. 100-PDB-C616-V616 REV N/C]