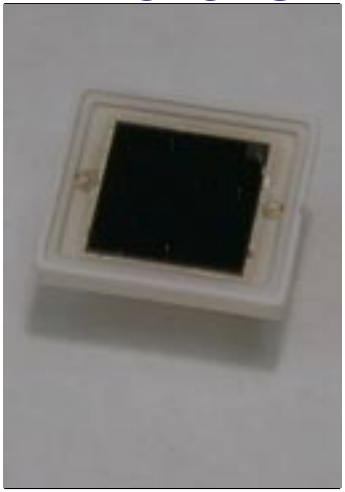
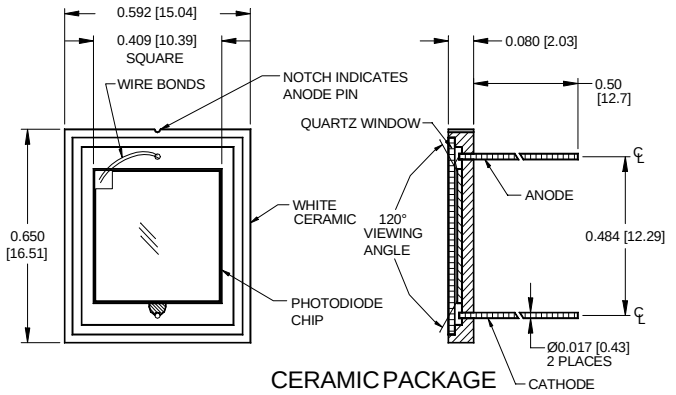
# PHOTONIC DETECTORS INC.

## Silicon Photodiode, U.V. Enhanced Photovoltaic
## Type PDU-V110



PACKAGE DIMINSIONS INCH (mm)




ACTIVE AREA = 100.00 mm$^2$

## FEATURES

- Low noise
- U.V. enhanced
- High shunt resistance
- Quartz windows

## DESCRIPTION

The **PDU-V110** is a silicon, PIN planar diffused, U.V. enhanced photodiode. Ideal for low noise photovoltaic applications. Packaged in low profile ceramic substrate with a quartz window.

## APPLICATIONS

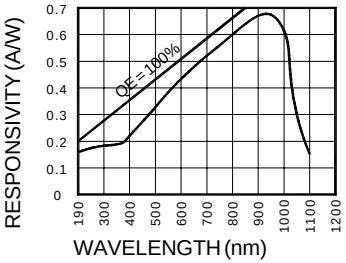
- Spectometers
- Fluorescent analysers
- U.V. meters
- Colorimeters

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

| SYMBOL | PARAMETER | MIN | MAX | UNITS |
|---|---|---|---|---|
| $V_{BR}$ | Reverse Voltage | | 75 | V |
| $T_{STG}$ | Storage Temperature | -20 | +80 | °C |
| To | Operating Temperature Range | -20 | +60 | °C |
| Ts | Soldering Temperature* | | +220 | °C |
| $I_L$ | 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 |
|---|---|---|---|---|---|---|
| Isc | Short Circuit Current | H = 100 fc, 2850 K | 0.9 | 1.2 | | mA |
| $I_D$ | Dark Current | H = 0, $V_R$ = 10 mV | | 200 | 333 | pA |
| Rsh | Shunt Resistance | H = 0, $V_R$ = 10 mV | 30 | 50 | | MΩ |
| TC Rsh | Rsh Temp. Coefficient | H = 0, $V_R$ = 10 mV | | -8 | | % / °C |
| $C_J$ | Junction Capacitance | H = 0, $V_R$ = 0 V** | | 10,000 | 12,000 | pF |
| λrange | Spectral Application Range | Spot Scan | 190 | | 1100 | nm |
| R | Responsivity | $V_R$ = 0 V, λ= 254 nm | .12 | .18 | | A/W |
| $V_{BR}$ | Breakdown Voltage | I = 10 μA | 5 | 10 | | V |
| NEP | Noise Equivalent Power | $V_R$ = 10 mV @ Peak | | $2.0x10^{-14}$ | | W/ $\sqrt{Hz}$ |
| tr | Response Time | RL = 1 KΩ $V_R$ = 0 V | | 2000 | | nS |

**f = 1 MHz