## PHOTONIC DETECTORS INC.

## PACKAGE DIMENSIONS INCH (mm)


$-0.125[3.18]$
SQUARE

$0.113[2.87]$ SQ
ACTIVE AREA

ACTIVE AREA $=7.95 \mathrm{~mm}^{2}$

FEATURES

- High speed
- Low capacitance
- Blue enhanced
- Low dark current


## DESCRIPTION

The PDB-C113 is a silicon, PIN planar diffused, blue enhanced photodiode. Ideal for high speed photoconductive applications. Packaged on a two lead ceramic substrate with a clear epoxy glob top.

APPLICATIONS

- Smoke detector
- Bar code sensor
- Security sensor
- Camerameter

ABSOLUTE MAXIMUM RATING (TA $=25^{\circ} \mathrm{C}$ unless otherwise noted)

| SYMBOL | PARAMETER | MIN | MAX | UNITS |
| :---: | :--- | :---: | :---: | :---: |
| $\mathrm{V}_{\text {BR }}$ | Reverse Voltage |  | 100 | V |
| $\mathrm{~T}_{\text {STG }}$ | Storage Temperature | -40 | +100 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{T}^{\circ}$ | Operating Temperature Range | -40 | +90 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{Ts}_{\mathrm{s}}$ | Soldering Temperature ${ }^{*}$ |  | +240 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{I}_{\mathrm{L}}$ | Light Current |  | 0.5 | mA |

*1/16 inch from case for 3 secs max

SPECTRALRESPONSE


ELECTRO-OPTICAL CHARACTERISTICS (TA $=25^{\circ} \mathrm{C}$ unless otherwise noted)

| SYMBOL | CHARACTERISTIC | TESTCONDITIONS | MIN | TYP | MAX | UNITS |
| :---: | :--- | :--- | :---: | :---: | :---: | :---: |
| Isc | Short Circuit Current | $\mathrm{H}=100 \mathrm{fc}, 2850 \mathrm{~K}$ | 90 | 110 |  | $\mu \mathrm{~A}$ |
| ID | Dark Current | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{~V}$ |  | 5 | 30 | nA |
| RsH | Shunt Resistance | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{mV}$ | 100 | 250 |  | $\mathrm{M} \Omega$ |
| TC RsH | Rs Temp. Coefficient | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{mV}$ |  | -8 |  | $\% /{ }^{\circ} \mathrm{C}$ |
| C$\lrcorner$ | Junction Capacitance | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{~V}^{* *}$ |  | 60 |  | pF |
| $\lambda_{\text {range }}$ | Spectral Application Range | Spot Scan | 350 |  | 1100 | nm |
| $\lambda_{\mathrm{p}}$ | Spectral Response - Peak | Spot Scan |  | 950 |  | nm |
| $\mathrm{~V}_{\mathrm{BR}}$ | Breakdown Voltage | $\mathrm{I}=10 \mu \mathrm{~A}$ | 75 | 100 |  | V |
| NEP | Noise Equivalent Power | $\mathrm{V}_{\mathrm{R}}=10 \mathrm{~V} @$ Peak |  | $9.0 \times 10^{-14}$ |  | $\mathrm{~W} / \sqrt{\mathrm{Hz}}$ |
| tr | Response Time | $\mathrm{RL}=1 \mathrm{~K} \Omega \mathrm{~V}_{\mathrm{R}}=50 \mathrm{~V}$ |  | 16 |  | 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. ** $\mathrm{f}=1 \mathrm{MHz}$

