

## FEATURES

- Photoconductive
- High speed
- Low cost

DESCRIPTION: ThePDB-C137 detector is a $0.74 \mathrm{~mm}^{2}$ planar pin photodiode packaged in a T $13 / 4$, water clear plastic housing. Designed for high speed, low capacitance, photoconductive applications. The PDB-C137F includes a daylight filter.

## APPLICATIONS

- Smoke detectors
- Light dimmers
- TV \& VCR remotes
- I.R. receivers


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

| SYMBOL | PARAMETER | MIN | MAX | UNITS |
| :---: | :--- | :---: | ---: | :---: |
| $\mathrm{V}_{\mathrm{BR}}$ | Reverse Voltage |  | 50 | V |
| $\mathrm{~T}_{\mathrm{STG}}$ | Storage Temperature | -40 | +100 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{T}_{\mathrm{O}}$ | Operating Temperature Range | -40 | +80 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{T}_{\mathrm{S}}$ | Soldering Temperature* |  | +260 | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{I}_{\mathrm{L}}$ | Light Current |  | 500 | mA |

*1/16 inch from case for 3 secs max

SPECTRALRESPONSE


WAVELENGTH(nm)

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

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
| :---: | :--- | :--- | :---: | :---: | :---: | :---: |
| $\mathrm{I}_{\mathrm{C}}$ | Short Circuit Current | $\mathrm{H}=100 \mathrm{fc}, 2850 \mathrm{~K}$ | 28 | 35 |  | $\mu \mathrm{~A}$ |
| $\mathrm{I}_{\mathrm{D}}$ | Dark Current | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{~V}$ |  | 2 | 10 | nA |
| $\mathrm{R}_{\mathrm{SH}}$ | Shunt Resistance | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{mV}$ | 500 | 1000 |  | $\mathrm{M} \Omega$ |
| $\mathrm{TCR}_{\mathrm{SH}}$ | RSH Temp. Coefficient | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=10 \mathrm{mV}$ |  | -8 |  | $\% /{ }^{\circ} \mathrm{C}$ |
| $\mathrm{C}_{J}$ | Junction Capacitance | $\mathrm{H}=0, \mathrm{~V}_{\mathrm{R}}=0 \mathrm{~V}^{*}$ |  | 4 |  | pF |
| $\lambda$ range | Spectral Application Range | (without daylight filter)** | 400 |  | 1100 | nm |
| $\lambda \mathrm{p}$ | Spectral Response - Peak |  |  | 950 |  | nm |
| $\mathrm{~V}_{\mathrm{GR}}$ | Breakdown Voltage | $\mathrm{I}=10 \mu \mathrm{~A}$ | 15 | 25 |  | V |
| NEP | Noise Equivalent Power | $\mathrm{V}_{\mathrm{R}}=10 \mathrm{~V} @$ Peak |  | $1.5 \times 10^{-14}$ |  | $\mathrm{~W} / \sqrt{\mathrm{Hz}}$ |
| tr | Response Time | $\mathrm{RL}=1 \mathrm{~K} \Omega \mathrm{~V}_{\mathrm{R}}=10 \mathrm{~V}$ |  | 10 |  | nS |

Information in this technical datasheet is believed to be correctand reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subjecttochange withoutnotice. ${ }^{* f}=1 \mathrm{MHz}$, ** daylightfilter= $700-1100 \mathrm{~nm}$

