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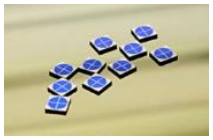
# PDQC-13A1860
# InGaAs Quadrant PIN Photodiode Chip (0.9um-1.7um)

## Overview



The Lasermate PDQC-13A1860 is a highly reliable, high responsivity, 0.9um-1.7um, InGaAs quadrant PIN photodiode chip. Ideal for LIDAR, beam alignment, light spot position detection, and remote optical control applications.

## Features

- InGaAs quadrant PIN photodiode chip
- Highly reliable planar device
- Low leakage current
- High shunt resistance
- High responsivity
- Low stray absorption

## Applications

- Light Detection and Ranging (LIDAR)
- Beam alignment
- Light spot position detection
- Remote optical control

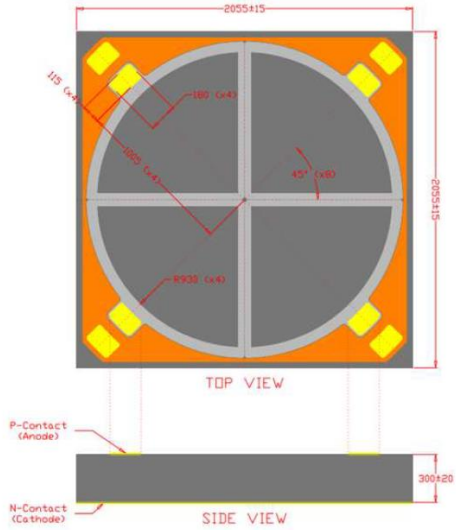
## Specifications

| **Absolute Maximum Ratings ($T_{AMB}$=23°C)** | | | | |
|---|---|---|---|---|
| Parameters | Symbol | Min. | Max. | Unit |
| Reverse voltage | $V_R$ | - | 5 | V |
| Reverse current | $I_R$ | - | 2 | mA |
| Forward current | $I_F$ | - | 2 | mA |
| Operating temperature | $T_{op}$ | -40 | 85 | oC |
| Storage temperature | $T_{stg}$ | -40 | 125 | oC |

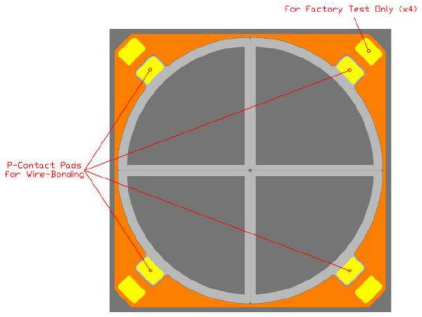
| **Electro-Optical Characteristics ($T_{AMB}$=23°C)** | | | | | |
|---|---|---|---|---|---|
| Parameters | Min. | Typ. | Max. | Unit | Conditions |
| Spectral range | 0.9 | | 1.7 | um | |
| Dark current | - | 1 | 2 | nA | $V_R$ = 5V |
| Shunt resistance | 40 | 150 | - | MΩ | @ -10mV |
| Capacitance | - | 160 | 200 | pF | $V_R$ = 0V, f=1MHz |
| | - | 80 | 100 | | $V_R$ = 5V, f=1MHz |
| 3dB Bandwidth | 25 | 35 | - | MHz | $V_R$ = 1.5V, 50Ω |
| Responsivity | 0.1 | 0.2 | - | A/W | $V_R$ = 0V, λ=0.85um |
| | 0.85 | 0.90 | - | | $V_R$ = 0V, λ=1.30um |
| | 0.95 | 1.00 | - | | $V_R$ = 0V, λ=1.55um |
| Saturation power (1) | 3 | 4.5 | - | mW | $V_R$ = 0V, λ=1.55um, -0.2dB |
| NEP | - | 2 | 4 | $10^{-14}$W/√HZ | $V_R$ = 0V, λ=1.55um, 1KHz |

Notes: (1) Measured at the aperture center with a $1/e^2$ beam diameter of 250um.

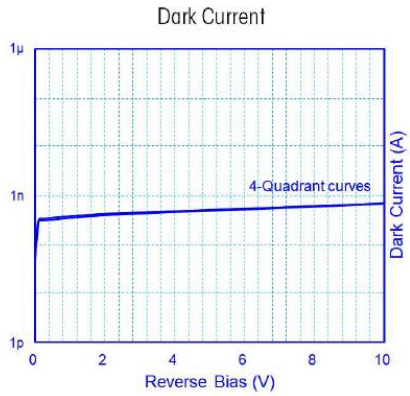
## Outline Diagram

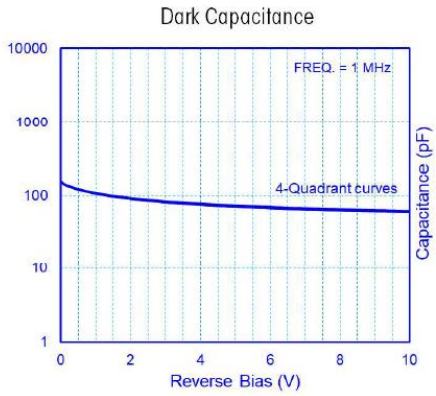


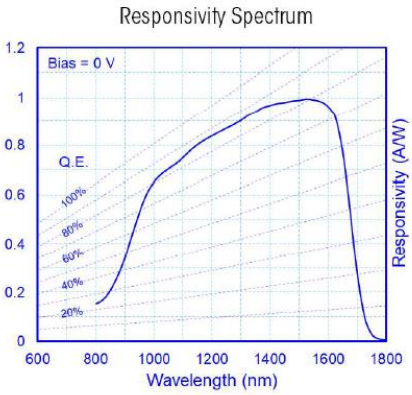

- Chip length: 2055+/-15um
- Chip width: 2055+/-15um
- Chip thickness: 300+/-20um
- Aperture size/Active area: Dia. 1860um / 0.625x4 mm$^2$
- Gap: 75um

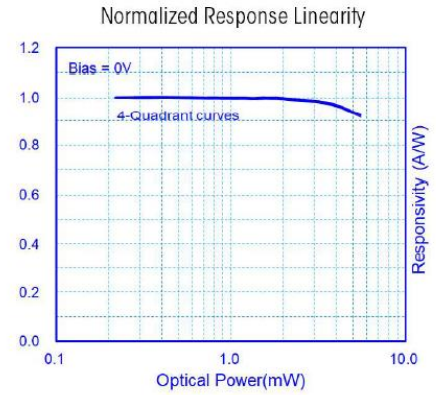



## Typical Characteristics




Note: Specifications are subject to change without notice.