



PDT-x411A500-Slx

0.5mm Fast Silicon PIN Photodiode in TO-46 Package

Description

The Lasermate PDT-x411A500-Slx is a high reliability, ultra-low dark current, fast rise time, 0.5mm diameter active area Silicon PIN photodiode with high sensitivity from 400nm to 1100nm spectral range. The detector is housed in hermetic TO-46 package.



Features

- High reliability
- Ultra-low dark current
- Spectral range 400nm to 1100nm
- Active diameter 0.5x0.5mm
- Very fast rise time up to 250ps
- Hermetic TO-46 can package

Applications

- Optical sensor
- High speed light pulse test
- Laser range finder and laser lidar
- Industrial automatic control
- Space light detection equipment

Product Overview

The following table lists the available part numbers, as well as the package type of each of the part numbers.

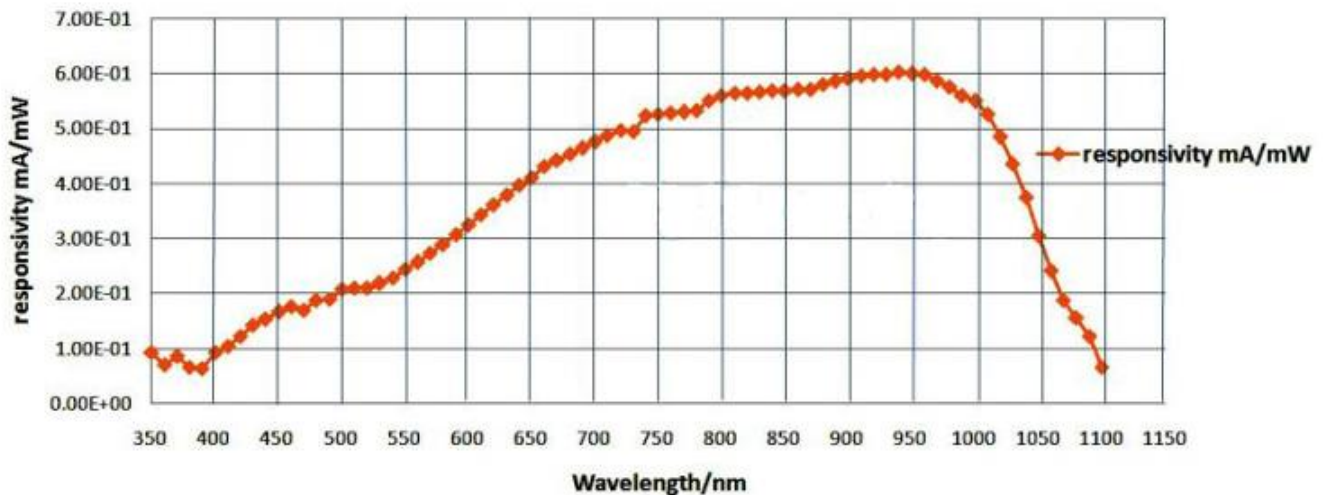
| Part Number | Package |
|-------------------|---|
| PDT-SF411A500-SI2 | TO-46 Can with 2mm Flat Window Cap, 2-pin |
| PDT-SF411A500-SI3 | TO-46 Can with 2mm Flat Window Cap, 3-pin |
| PDT-LF411A500-SI2 | TO-46 Can with 3mm Flat Window Cap, 2-pin |
| PDT-LF411A500-SI3 | TO-46 Can with 3mm Flat Window Cap, 3-pin |
| PDT-B411A500-SIS | TO-46 Can with Short Ball Lens Cap, 3-pin |
| PDT-B411A500-SI | TO-46 Can with Ball Lens Cap, 3-pin |

Specifications

| Absolute Maximum Ratings | | | | |
|--------------------------|-----------|------------|------|------------|
| Parameters | Symbol | Value | Unit | Conditions |
| Operating temperature | T_{op} | -45 to 85 | °C | |
| Storage temperature | T_{stg} | -45 to 100 | °C | |
| Forward current | I_F | 5 | mA | |
| Reverse voltage | V_r | 30 | V | |
| Soldering temperature | T_{sol} | 260 | °C | 10 seconds |

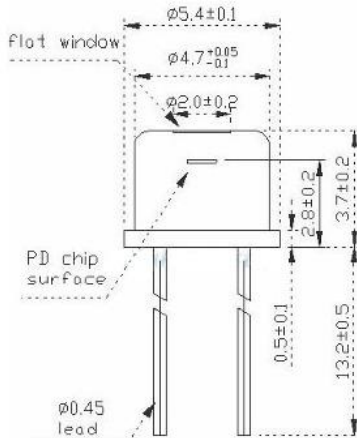
| Electro-Optical Characteristics (T=25°C) | | | | | | |
|--|--------------------|------|---------|------|------------|--------------------------|
| Parameters | Symbol | Min. | Typ. | Max. | Unit | Conditions |
| Response spectrum | λ | 400 | | 1100 | nm | |
| Active diameter | \varnothing | | 0.5x0.5 | | mm | |
| Responsivity | R_e | | 0.1 | | mA/mW | $V_r=5V, \lambda=405nm$ |
| | | | 0.35 | | | $V_r=5V, \lambda=650nm$ |
| | | | 0.45 | | | $V_r=5V, \lambda=850nm$ |
| | | | 0.20 | | | $V_r=5V, \lambda=1064nm$ |
| Dark current | I_d | | 0.1 | | pA | $V_r=0V$ |
| | | | 50 | | | $V_r=5V$ |
| Response time | T_r | | 250 | | ps | $R_L=50\Omega, V_r=5V$ |
| Junction capacitance | C_j | | 15 | | pF | $V_r=0V, f=1MHz$ |
| | | | 1.5 | | | $V_r=5V, f=1MHz$ |
| Reverse breakdown voltage | V_{BR} | | 120 | | V | $I_R=10\mu A$ |
| Saturated optical power | P_s | | 7 | | mW | $V_r=5V$ |
| Operating voltage | V_R | | 0-20 | | V | |
| Shunt resistance | R_{sh} | | 100 | | G Ω | $V_r=10mV$ |
| Package | Hermetic TO-46 can | | | | | |

Typical Characteristics

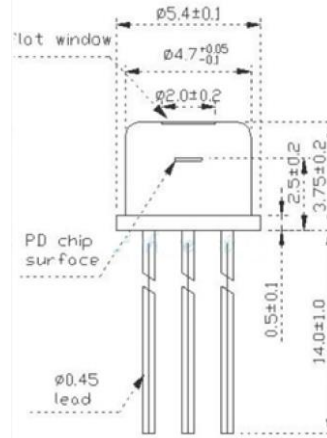


Outline Dimensions (unit: mm)

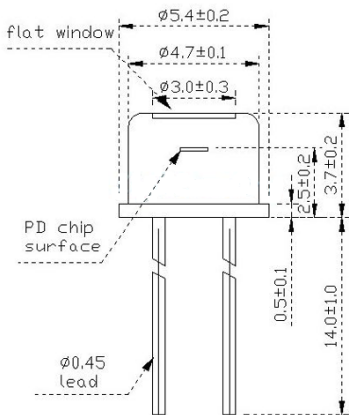
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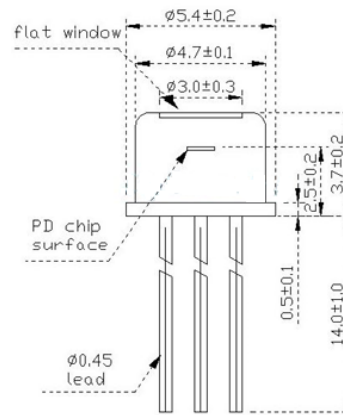
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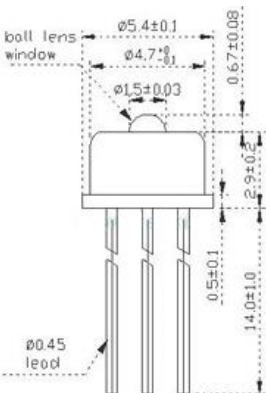
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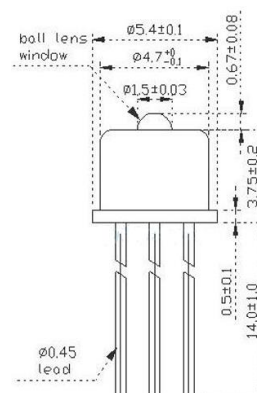
PDT-LF411A500-SI3:



PDT-B411A500-SIS:

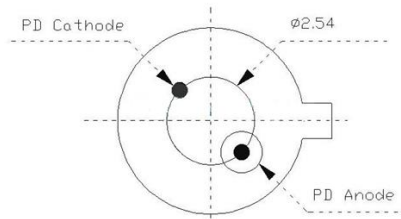


PDT-B411A500-SI:

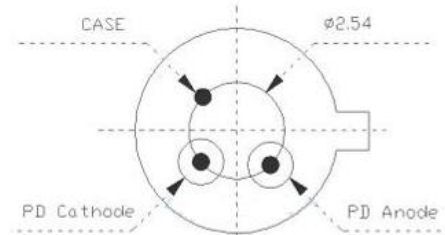


Pin Configuration

2-pin



3-pin



Notes:

1. The suitable ESD protecting measures are recommended in storage, transportation, and usage.
2. Specifications are subject to change without notice.