

Fiber Optic Detector

OPF420



Features:

- Electrically isolated plastic cap package
- High speed, low capacitance
- Metal can for improved noise immunity
- 35MHz operation minimum

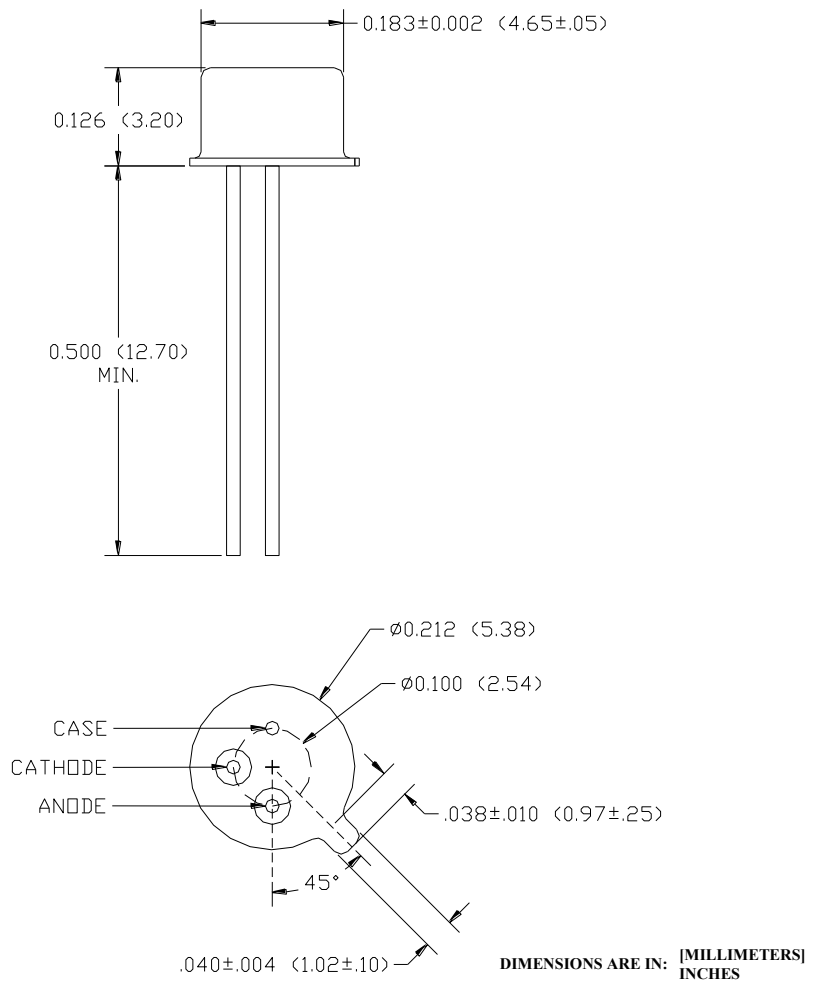
Description:

The OPF420 is a low noise silicon PIN photodiode mounted in a low cost package for fiber optic applications. It offers fast response at moderate bias and is compatible with LED and laser diode sources in the 800-1000 nm wavelength region. Low capacitance improves signal to noise performance in typical short haul LAN applications.

The OPF420 is designed to be compatible with multimode optical fibers from 50/125 to 200/300 microns.

Applications:

- Industrial Ethernet equipment
- Copper to fiber media conversion
- Intra system fiber optic links



General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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Electrical Specifications

| Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted) | |
|-----------------------------------------------------------------------------|-------------------|
| Storage Temperature Range | -65° C to +150° C |
| Operating Temperature Range | -55° C to +125° C |
| Lead Soldering Temperature ⁽¹⁾ | 260° C |
| Continuous Power Dissipation ⁽²⁾ | 200 mW |
| Maximum Reverse Voltage | 100 VDC |

| Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|-------------------------------------------------------------------------------|--------------------------|------|------|-----|-------|----------------------------------------------------------------------------|
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
| R | Responsivity | 0.45 | 0.55 | | A/W | $V_R = 5.0\text{V}$; 50/125 μm fiber; $\lambda = 850\text{nm}$ |
| I_D | Dark Current | | 0.1 | 5.0 | nA | $V_R = 5.0\text{V}$ |
| λ_p | Peak Response Wavelength | | 905 | | nm | |
| t_r | Output Rise Time | | 6.0 | | ns | $V_R = 15\text{V}$; $R_L = 50\Omega$, 10%-90% |
| C_T | Total Capacitance | | 3.0 | | pF | $V_R = 20\text{V}$ |
| FoV | Field of View | | 80 | | deg | |

Notes:

1. Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.
2. De-rate linearly at 1.60mW/°C above 25°C .

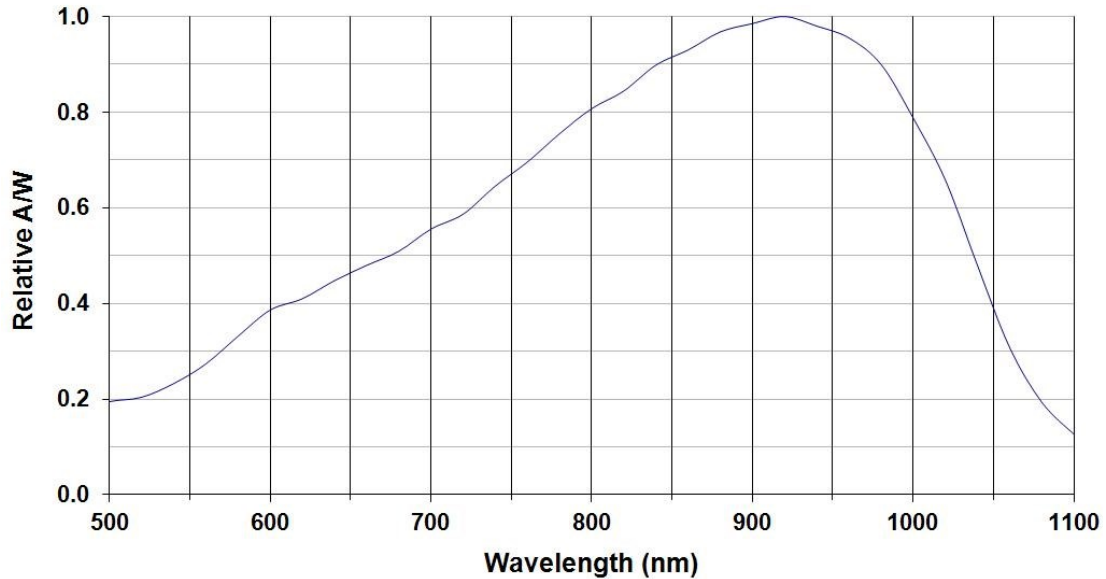
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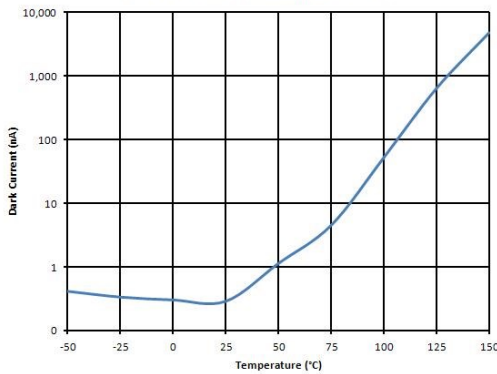
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Performance

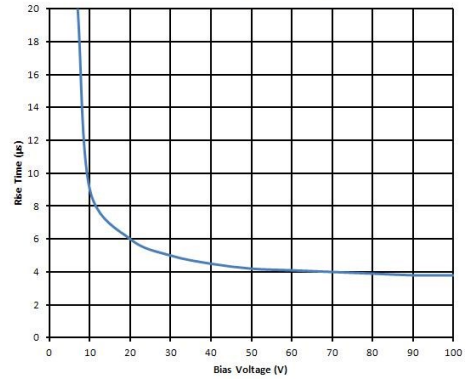
Typical Responsivity



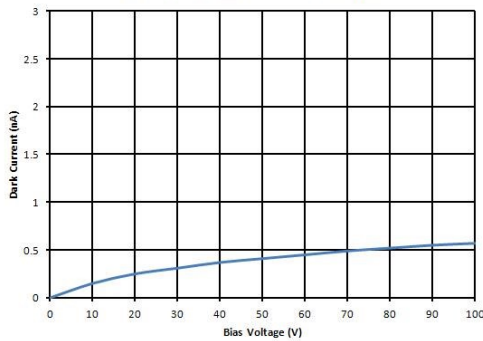
Dark Current vs. Temperature



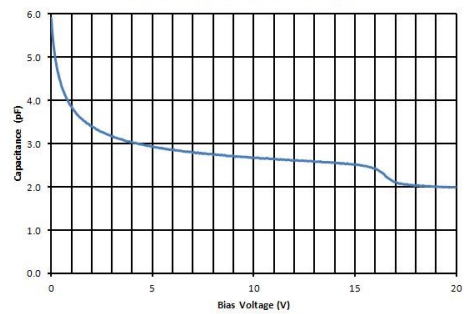
Rise Time vs. Bias Voltage



Dark Current vs. Bias Voltage



Capacitance vs. Bias Voltage



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