



APD0200-17-C InGaAs Avalanche Photodiode

FEATURES

- Highly Reliable Planar Device
- High Responsivity in 0.95 – 1.65 μm
- Low Leakage Current and Noise
- $\geq 750\text{-MHz}$ 3dB Bandwidth
- Low Stray Absorption

APPLICATIONS

- Light Detection and Ranging (LIDAR)
- Fiberoptic Communication/Testing
- Spectral Analysis
- Optical Coherence Tomography
- Single-Photodiode SWIR Detection
- Covert IR Sensing



GENERAL DESCRIPTIONS

| PARAMETER | UNIT | VALUE |
|----------------|---------------|-------------------|
| Spectral Range | μm | 0.95 – 1.65 |
| Aperture Size | μm | $\varnothing 200$ |
| Package Type | --- | 6CLCC (3.0SQ) |

ABSOLUTE MAXIMUM RATINGS

| PARAMETER | UNIT | MIN. | MAX | |
|----------------------------------|--------------|--------------------|-----|-----|
| Reverse Current | mA | --- | 1 | |
| Forward Current | mA | --- | 5 | |
| Ambient Temperature ¹ | In Operation | $^{\circ}\text{C}$ | -40 | +85 |
| | Storage | $^{\circ}\text{C}$ | -40 | +85 |

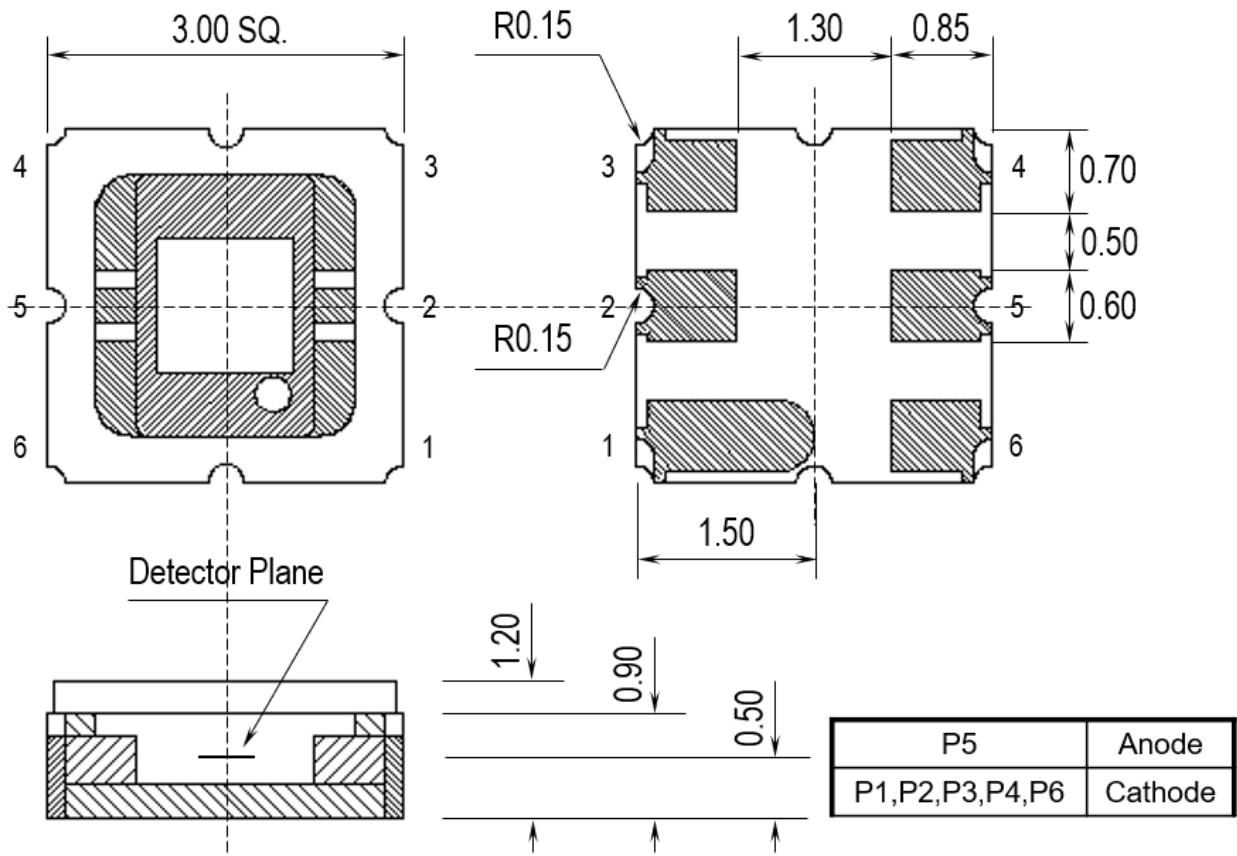
¹Non-condensing environment



SPECIFICATIONS ($T_{Amb} = 23\text{ }^{\circ}\text{C}$)

| PARAMETER | UNIT | MIN. | TYP. | MAX. | CONDITIONS |
|--------------------------------|------------------------------|------|------|------|---------------------------------------------|
| Dark Current | nA | --- | 5 | 50 | $M = 10$ |
| Operating Voltage (V_{OP}) | V | 32 | --- | 50 | $M = 10$ |
| Breakdown Voltage (V_{BD}) | V | 35 | --- | 55 | $I_{BD} = 100\text{ }\mu\text{A}$ |
| Capacitance | pF | --- | 2.5 | 3.0 | $M = 10, f = 1\text{ MHz}$ |
| Responsivity | A/W | 8 | 9 | --- | $M = 10, \lambda = 1.55\text{ }\mu\text{m}$ |
| | | 0.8 | 0.9 | --- | $M = 1, \lambda = 1.55\text{ }\mu\text{m}$ |
| Useable Gain | --- | 10 | 20 | --- | $\lambda = 1.55\text{ }\mu\text{m}$ |
| 3dB Bandwidth (f_{3dB}) | GHz | 0.75 | 0.85 | --- | $M = 10, \lambda = 1.55\text{ }\mu\text{m}$ |
| Spectral Noise Current | $\text{pA}/\sqrt{\text{Hz}}$ | --- | 0.5 | 1.5 | $M = 10, \Delta f = 1\text{ kHz}$ |

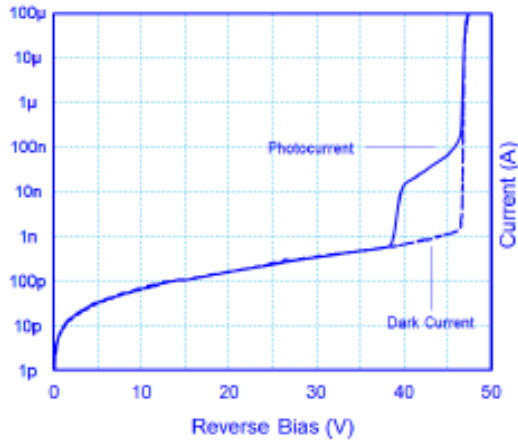
PACKAGE OUTLINE (UNIT: mm)



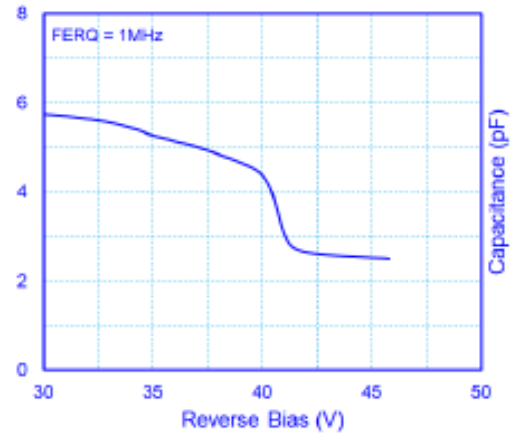


EXAMPLE CURVES ($T_{Amb} = 23\text{ }^{\circ}\text{C}$)

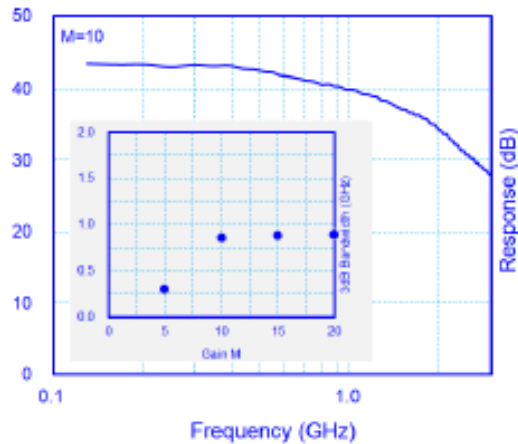
Dark / Photo-Current



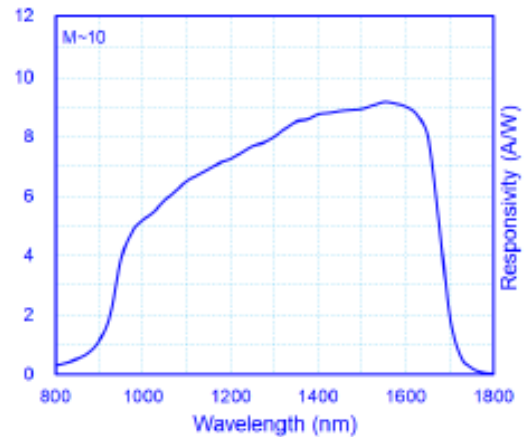
Dark Capacitance



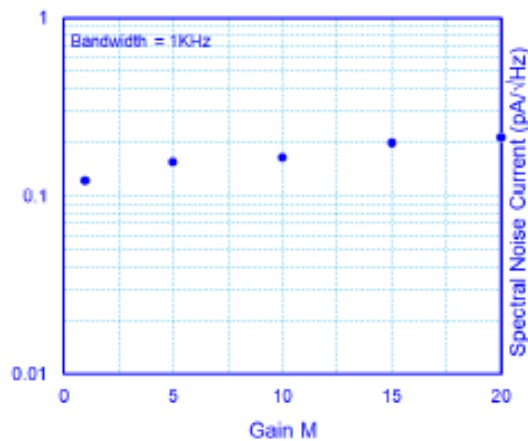
Frequency Response



Responsivity Spectrum



Spectral Noise Current



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