



APD0200-17-T1 InGaAs Avalanche Photodiode

FEATURES

- Highly Reliable Planar Device
- Thermoelectric-Cooled TO-46 Package
- High Responsivity in 0.95 – 1.65 μm
- Low Leakage Current and Noise
- $\geq 800\text{-MHz}$ 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	---	TO-46 / 5P

ABSOLUTE MAXIMUM RATINGS

PARAMETER	UNIT	MIN.	MAX	
Reverse Current	mA	---	1	
Forward Current	mA	---	5	
TEC Current	A	---	0.65	
Ambient Temperature ¹	In Operation	$^{\circ}\text{C}$	-40	+85
	Storage	$^{\circ}\text{C}$	-45	+90

¹Non-condensing environment



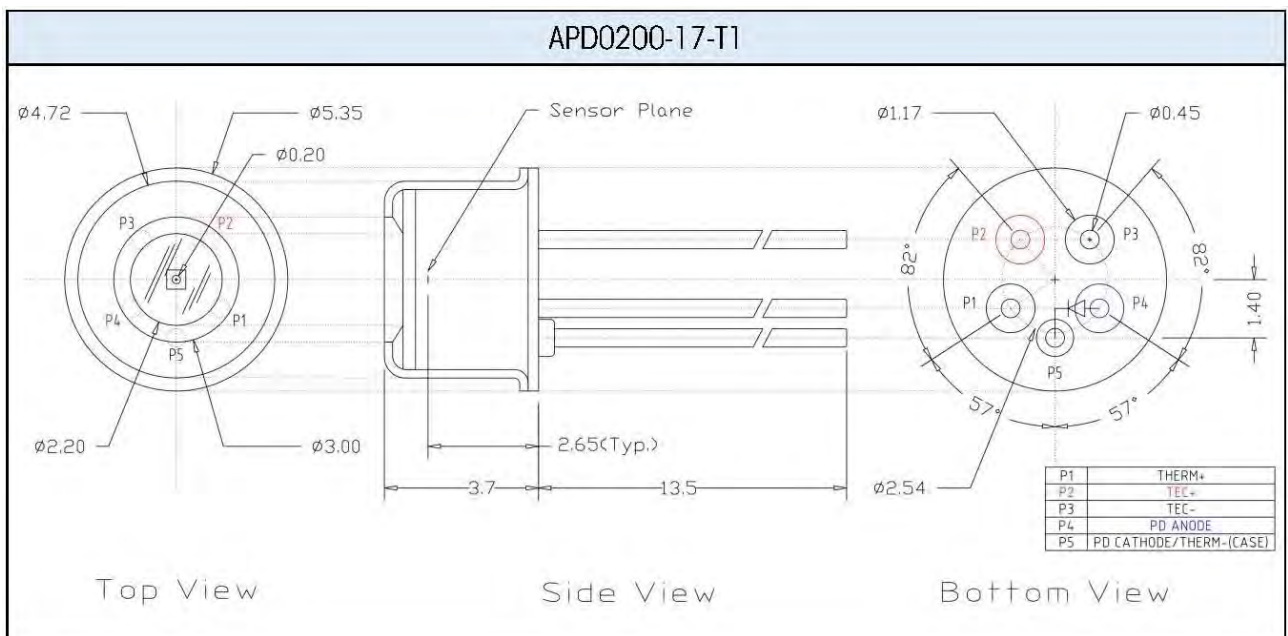
SPECIFICATIONS ($T_{\text{Photodiode}} = 0\text{ }^{\circ}\text{C}$)

PARAMETER	UNIT	MIN.	TYP.	MAX.	CONDITIONS
Dark Current	nA	---	2	20	M = 10
Operating Voltage (V_{OP})	V	30	---	48	M = 10
Breakdown Voltage (V_{BD})	V	33	---	53	$I_{\text{BD}} = 100\text{ }\mu\text{A}$
Capacitance ²	pF	---	2.5	3.0	M = 10, f = 1 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 ($f_{3\text{dB}}$) ²	GHz	0.8	1	---	M = 10, $\lambda = 1.55\text{ }\mu\text{m}$, 50 Ω
Spectral Noise Current	pA/ $\sqrt{\text{Hz}}$	---	0.5	1.5	M = 10, $\Delta f = 1\text{ kHz}$
Max. Cooling Capability (ΔT_{MAX}) ³	$^{\circ}\text{C}$	35	40	---	$T_{\text{Heatsink}} = 23\text{ }^{\circ}\text{C}$

² $T_{\text{Photodiode}} = 23\text{ }^{\circ}\text{C}$

³ Adequate heatsink and thermal interface material are the prerequisites for stable operation.

PACKAGE OUTLINE (UNIT: mm)

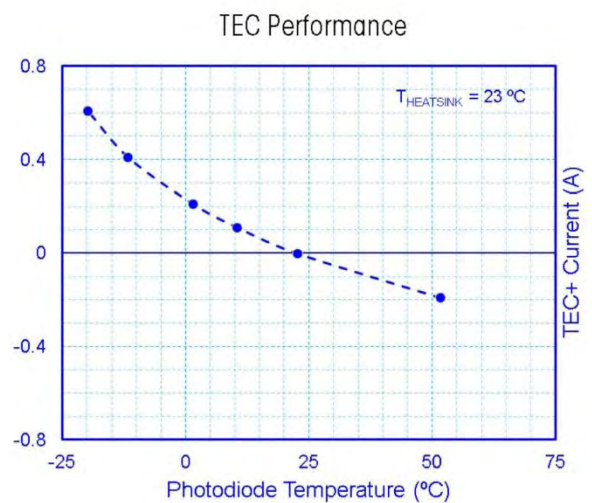
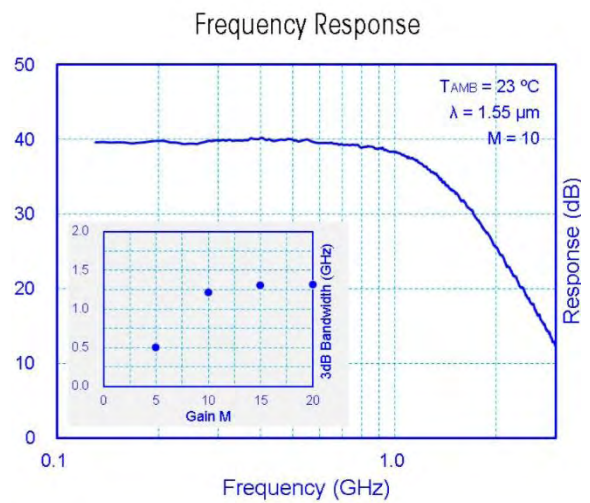
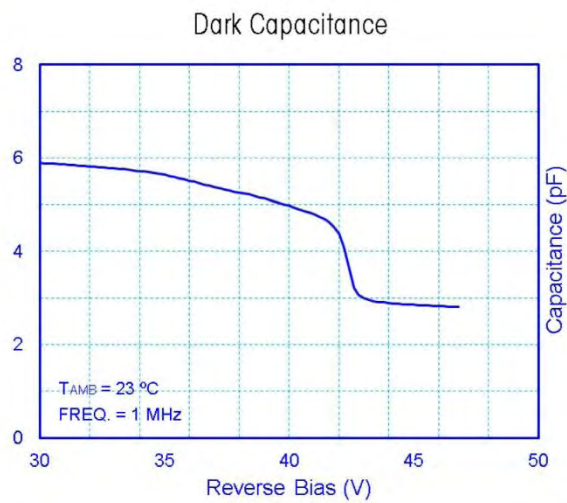
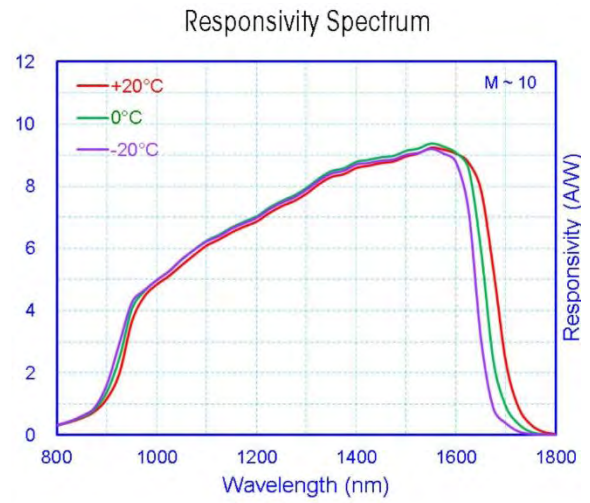
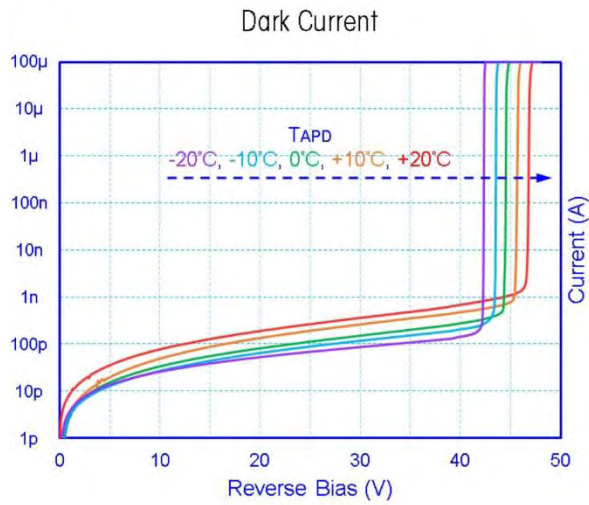


⁴ Make sure correct polarity is observed before powering on the device. For instance, from **top-view**, P2 for applying positive TEC current to cool down the photodiode **is on the right-hand side of case pin P5**.

⁵ Product serial number is printed on the side wall of the cap.



EXAMPLE CURVES



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