



InGaAs Avalanche Photodiode

APD0200-17-D : Bare Chip

APD0200-17-C : Ceramic Package

APD0200-17-T0: TO46 Package

APD0200-17-T1: TO46 Package with 1-Stage Thermoelectric Cooler

FEATURES

- Highly Reliable Planar Device
- High Responsivity in 0.95 -1.65 μm
- Low Leakage Current and Noise
- $\geq 700\text{-MHz}$ 3dB Bandwidth
- Low Stray Absorption

APPLICATIONS

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



GENERAL DESCRIPTIONS

MODEL NO.	Spectral Range	Aperture Size	Package Type
	μm	μm	
APD0200-17-D	0.95 – 1.65	$\varnothing 200$	---
APD0200-17-C			6CLCC (3.0SQ)
APD0200-17-T0			TO-46 / 3P
APD0200-17-T1			TO-46 / 5P

ABSOLUTE MAXIMUM RATINGS

MODEL NO.	Reverse Current		Forward Current		TEC Current		¹ Ambient Temperature			
	mA		mA		A		In Operation		Storage	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	$^{\circ}\text{C}$		$^{\circ}\text{C}$	
							MIN.	MAX.	MIN.	MAX.
APD0200-17-D	---	1	---	5	---	---	-40	+85	-55	+125
APD0200-17-C					---	---			-40	+85
APD0200-17-T0					---	---			-40	+85
APD0200-17-T1					---	0.65			-40	+85

¹Non-condensing environment.



SPECIFICATIONS (T_{AMB} = 23 °C)

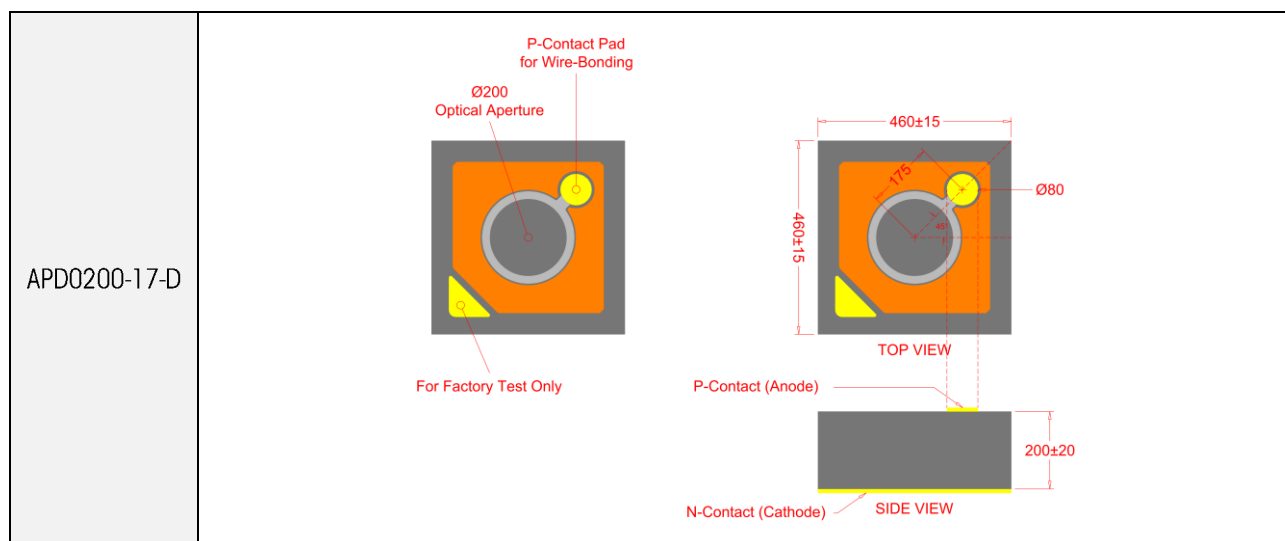
MODEL NO.	Dark Current			Operating Voltage, V _{OP}			Breakdown Voltage, V _{BD}			Capacitance		
	nA			V			V			pF		
	@ M=10			@ M=10			@ I _{BD} =100 μA			@ M=10, f=1MHz		
	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.
APD0200-17-D	---	5	50	32		50	35		55	---	2.5	3.0
APD0200-17-C												
APD0200-17-T0												
APD0200-17-T1												

MODEL NO.	Responsivity			Useable Gain			3dB Bandwidth, f _{3dB}			Spectral Noise Current		
	A/W			---			GHz			pA/√Hz		
	@ M=10, λ=1.55 μm			@ λ=1.55 μm			@ M=10, λ=1.55 μm, 50 Ω			@ M=10, Δf=1 kHz		
	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.
APD0200-17-D	8	9	---	10	20	---	0.7	0.85	---	---	0.5	1.5
APD0200-17-C							0.7	0.85	---			
APD0200-17-T0							0.8	1	---			
APD0200-17-T1							0.8	1	---			

MODEL NO.	Temperature Coefficient of V _{BD}			² Max. Cooling Capability, ΔT _{MAX}		
	V/°C			---		
	---			T _{Heatsink} =20 °C		
	MIN.	Typ.	MAX.	MIN.	Typ.	MAX.
APD0200-17-D	---	0.10	0.15	---	---	---
APD0200-17-C				---	---	---
APD0200-17-T0				---	---	---
APD0200-17-T1				35	40	---

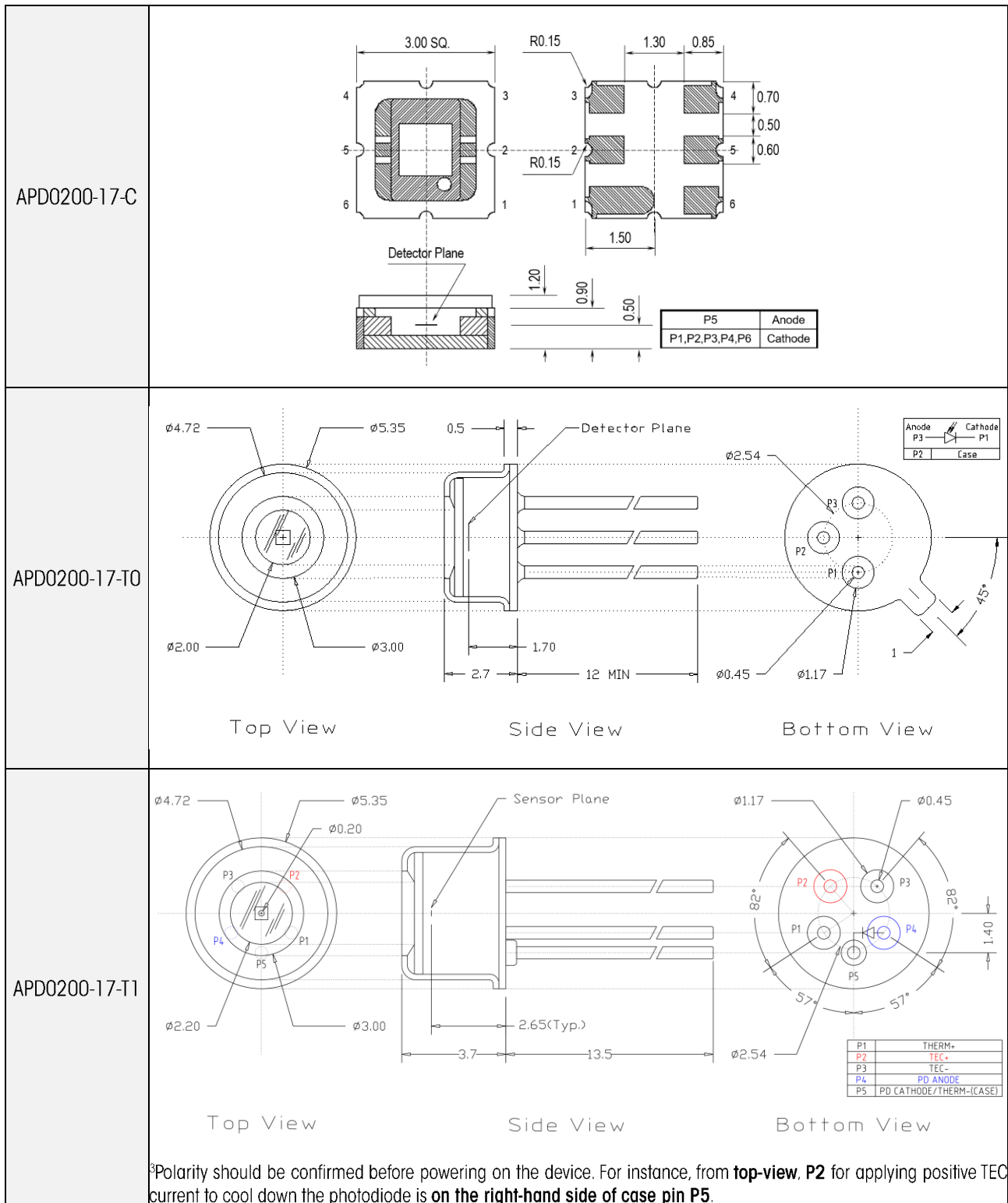
²Adequate heatsink and thermal interface material are the prerequisites for stable operation.

CHIP DIAGRAM (UNIT: μm)





PACKAGE OUTLINE (UNIT: mm)

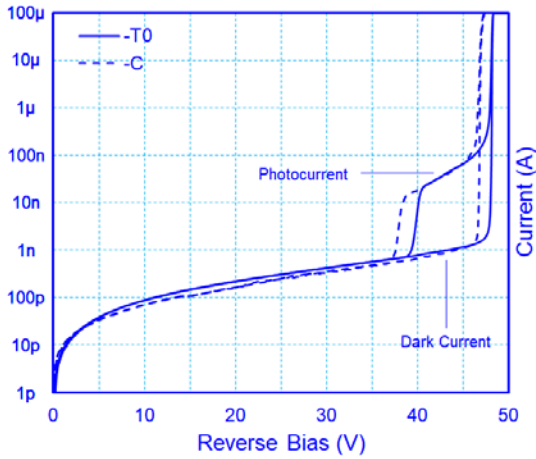


⁴ Product serial numbers of APD0200-17-T0 and APD0200-17-T1 are printed on the side wall of the cap.

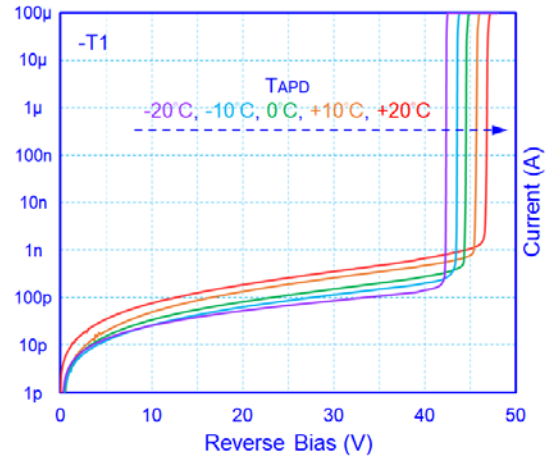


EXAMPLE CURVES ($T_{AMB} = 23^{\circ}\text{C}$)

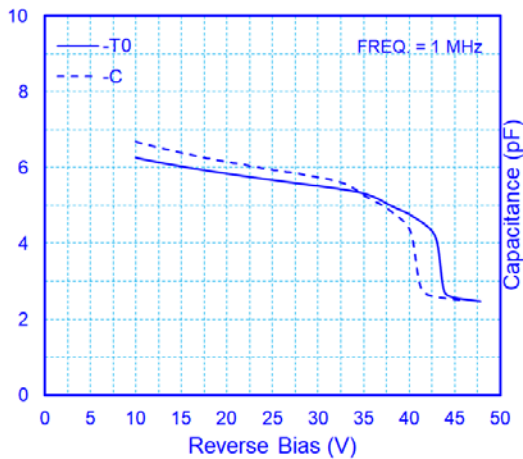
Dark- / Photo-Current



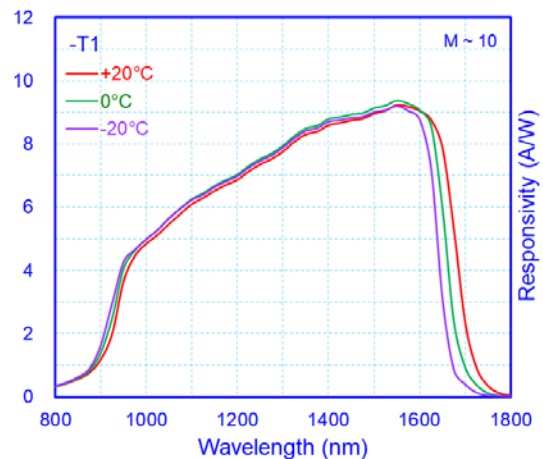
Dark Current



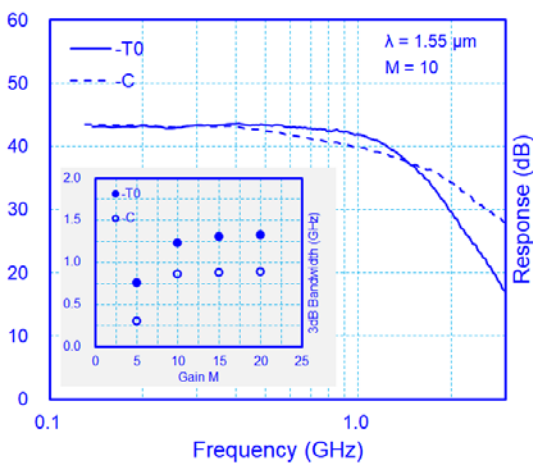
Dark Capacitance



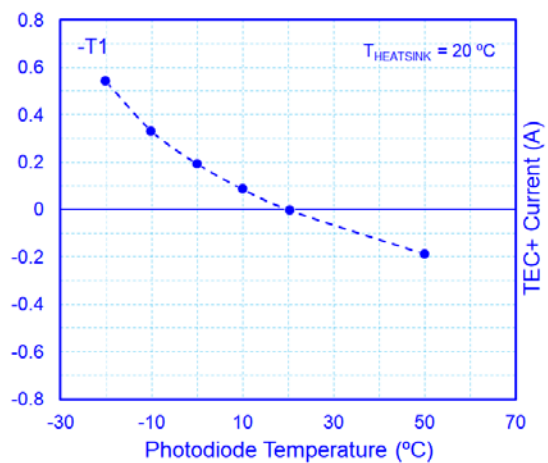
Responsivity Spectrum



Frequency Response



TEC Performance



Note: The example curves are subject to change without notice.