



## InGaAs Avalanche Photodiode

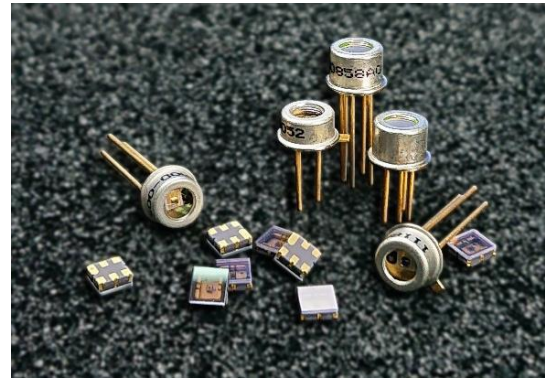
APD0200-17-D : Die only (Bare Chip)  
APD0200-17-C : Ceramic Package  
APD0200-17-T0 : TO-46 Package  
APD0200-17-T1 : TO-46 Package with 1-Stage Thermoelectric Cooler

### FEATURES

- Highly Reliable Planar Device
- High Responsivity in 0.95 – 1.65  $\mu\text{m}$
- 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 Detection
- Covert IR Sensing



### GENERAL DESCRIPTIONS

MODEL NO.	Spectral Range	Aperture Size	Package Type
	$\mu\text{m}$	$\mu\text{m}$	---
APD0200-17-D	0.95 – 1.65	$\emptyset 200$	---
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		Ambient Temperature <sup>1</sup>			
	mA		mA		A		In Operation		Storage	
	MIN	MAX	MIN	MAX	MIN	MAX	°C		°C	
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

<sup>1</sup>Non-condensing environment



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

PARAMETER	Dark Current			Operating Voltage ( $V_{OP}$ )			Breakdown Voltage ( $V_{BD}$ )			Capacitance		
UNIT	nA			V			V			pF		
CONDITIONS	M = 10			M = 10			$I_{BD} = 100 \mu\text{A}$			M = 10, f = 1 MHz		
MODEL NO.	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												

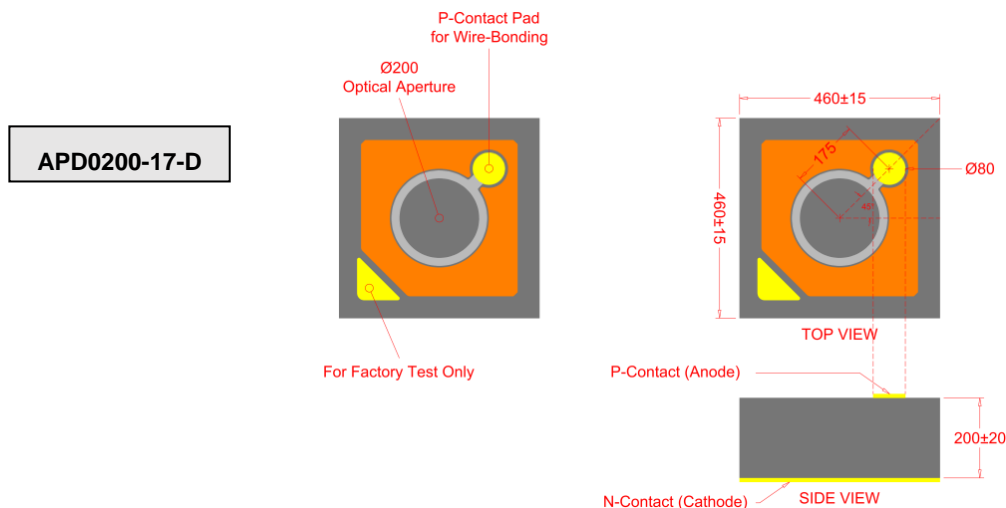
PARAMETER	Responsivity			Useable Gain			3dB Bandwidth ( $f_{3dB}$ )			Spectral Noise Current		
UNIT	A/W			---			GHz			pA/ $\sqrt{\text{Hz}}$		
CONDITIONS	M = 10, $\lambda = 1.55 \mu\text{m}$			$\lambda = 1.55 \mu\text{m}$			M = 10, $\lambda = 1.55 \mu\text{m}$ 50 $\Omega$			M = 10, $\Delta f = 1 \text{ kHz}$		
MODEL NO.	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	---			

PARAMETER	Temperature Coefficient of $V_{BD}$			Max. Cooling Capability <sup>2</sup> , $\Delta T_{MAX}$		
UNIT	V/ $^{\circ}\text{C}$			---		
CONDITIONS	---			$T_{\text{Heatsink}} = 20^{\circ}\text{C}$		
MODEL NO.	MIN	TYP	MAX	MIN	TYP	MAX
APD0200-17-D	---	0.10	0.15	---	---	---
APD0200-17-C				---	---	---
APD0200-17-T0				---	---	---
APD0200-17-T1				35	40	---

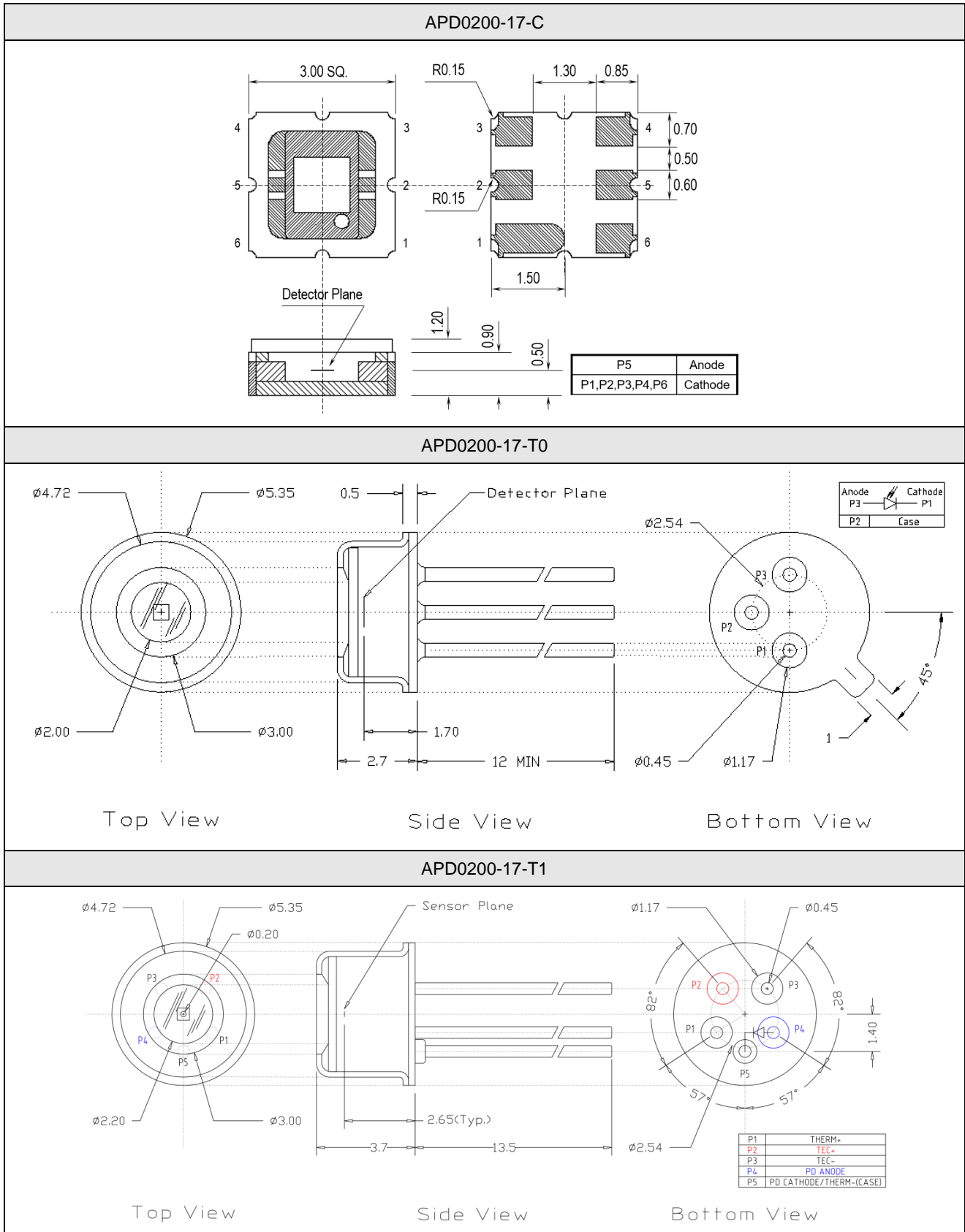
<sup>2</sup> Adequate heatsink and thermal interface material are the prerequisites for stable operation.

## CHIP DIAGRAMME (UNIT: $\mu\text{m}$ )



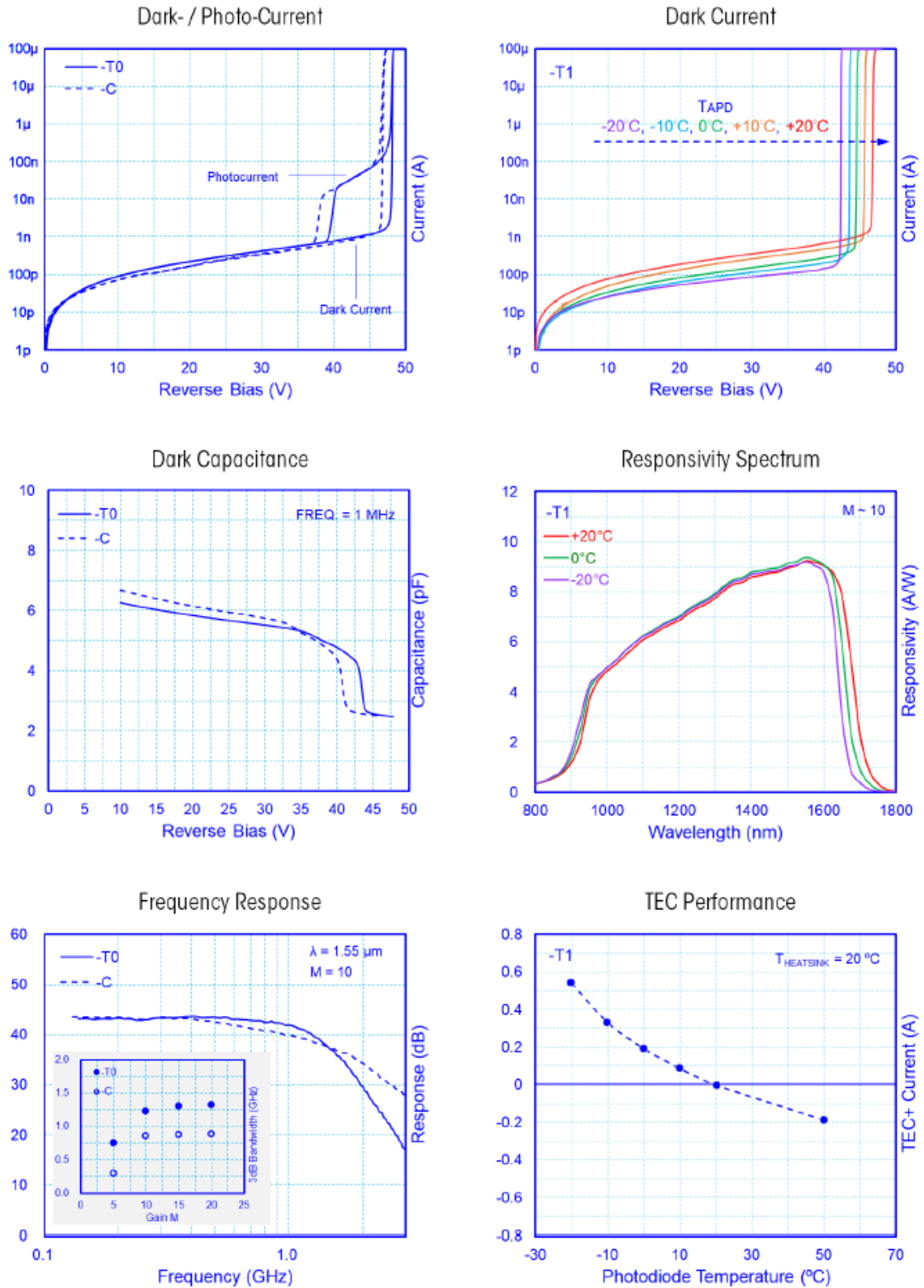


PACKAGE OUTLINE (UNIT: mm)





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



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