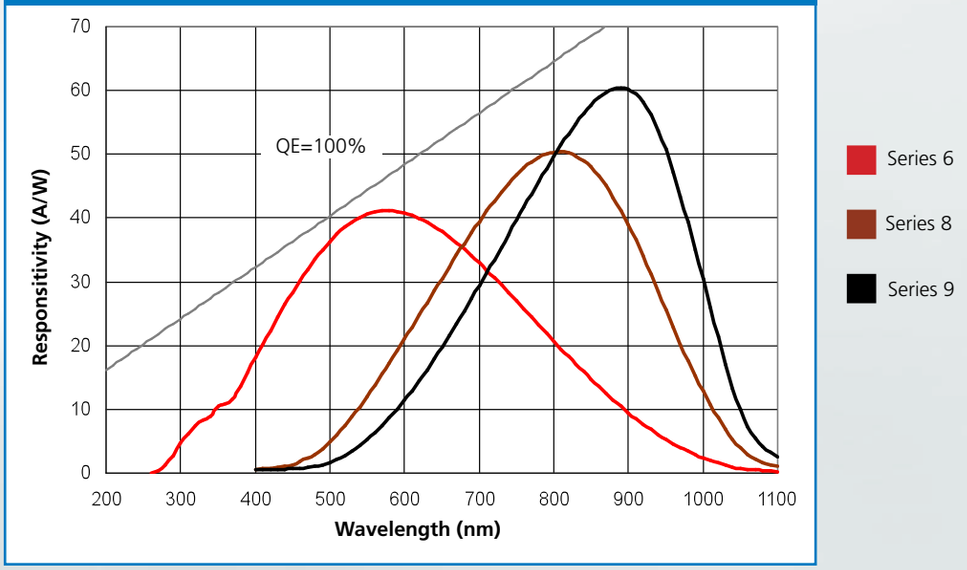
SELECTION GUIDE AND NOMENCLATURE

Silicon APD Typical Spectral Response (T_A = 23°C, M = 100)



Silicon APD Model Number Description: **APDxx - y - zzz - pppp**

		Options	Descriptions
APD	Avalanche Photodiode		
xx	Active Area Size	02	Diameter 0.2 mm
		05	Diameter 0.5 mm
		10	Diameter 1.0 mm
		15	Diameter 1.5 mm
		30	Diameter 3.0 mm
		50	Diameter 5.0 mm
y	Optimal Spectral Band	6	630 nm
		8	800 nm
		9	900 nm
zzz	Breakdown Voltage	150	Low Voltage Operation
		250	High Voltage Operation
pppp	Package Style (refer to mechanical specifications)	T52, T46	TO-18 style
		TO5, T5H, T5i	TO-5 style
		TO8, T8H	TO-8 style

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SELECTION GUIDE AND NOMENCLATURE

ELECTRO-OPTICAL CHARACTERISTICS (T_A = 23°C, typical values at gain listed, unless otherwise specified)

Model	Active Area Dia.	Optimal Wavelength	Responsivity @ Gain M	Breakdown Voltage		Dark Current	Bandwidth	Capacitance	Package	Gain M
	(mm)	(nm)	Typ. (A/W)	Typ. (V)	Max (V)	Max (nA)	Typ. (MHz)	Typ. (pF)	(*)	

SERIES 6 - 150: Visible Spectrum Optimized

APD02-6-150	0.2	630	40	150	200	5	900	3	TO-18	100
APD05-6-150	0.5	630	40	150	200	5	400	8	TO-18	100
APD10-6-150	1	630	40	150	200	5	250	18	TO-18	100
APD15-6-150	1.5	630	40	150	200	15	100	35	TO-5	100
APD30-6-150	3	630	20	150	200	30	20	140	TO-5	50
APD50-6-150	5	630	20	150	200	100	8	365	TO-8	50

SERIES 8 - 150: High Bandwidth Applications

APD02-8-150	0.2	800	50	150	250	1	1000	1.5	TO-18	100
APD05-8-150	0.5	800	50	150	250	1	900	3	TO-18	100
APD10-8-150	1	800	50	150	250	2	600	6	TO-18	100
APD15-8-150	1.5	800	50	150	250	5	350	10	TO-5	100
APD30-8-150	3	800	30	150	250	10	65	40	TO-5	60
APD50-8-150	5	800	20	150	250	30	25	105	TO-8	40

SERIES 9 - 250: NIR Enhanced Series

APD02-9-250	0.2	900	60	250	350	2	250	0.9	TO-18	100
APD05-9-250	0.5	900	60	250	350	3	220	1.5	TO-18	100
APD10-9-250	1	900	60	250	350	5	210	2.4	TO-18	100
APD15-9-250	1.5	900	60	250	350	10	200	4.4	TO-5	100

SERIES 15 - 60: InGaAs APD

APD007-15-60	0.075	1550	9	60	100	20 **	2000	1.2	TO-18	10
APD020-15-60	0.2	1550	9	60	100	50 **	1000	2.5	TO-18	10

(*) Please refer to Mechanical Specification for package options available
(**) Condition: Vr = 0.9 x Vbr

For further assistance on Avalanche Photodiode selection or customization, please contact one of our Application Engineers at +1-310-978-0516.

APD SERIES 15-60

InGaAs Avalanche Photodiodes, 1550 nm band

FEATURES

- 75 and 200 um diameter Active Area
- Low voltage operation
- Low capacitance
- High sensitivity and low dark current

APPLICATIONS

- Optical Fiber Communication
- OTDR
- Distance Measurement
- Low-light-level detection

GENERAL RATINGS / ABSOLUTE MAXIMUM RATINGS

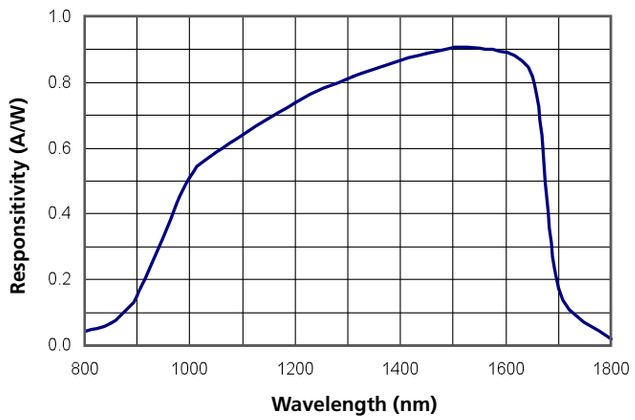
Product Model	Active Area		Package Style*1	Forward Current (mA)	Reverse Current (mA)	Storage Temperature (˚C)		Operating Temperature (˚C)	
	Diameter (mm)	Area (mm^2)		Max	Max	Min	Max	Min	Max
APD007-15-60-xxxx	0.075	0.004	T46, T46L, WCER	2	2	-55	+125	-40	+85
APD020-15-60-xxxx	0.2	0.03	T46, T46L, WCER	2	2	-55	+125	-40	+85

ELECTRO-OPTICAL CHARACTERISTICS (T_A = 23°C, typical values at gain listed, unless otherwise specified)

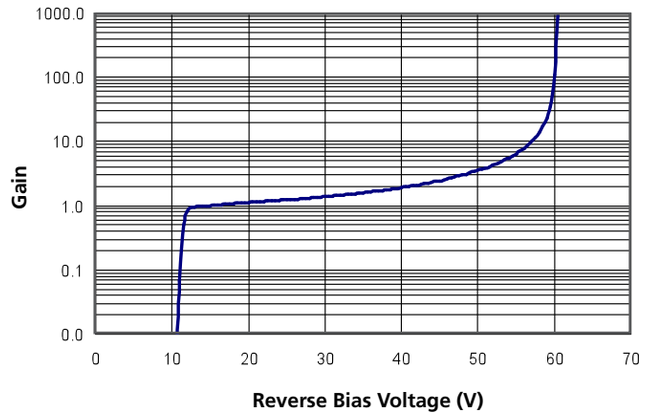
Product Model	Spectral Response Range (nm)	Responsivity M = 10 λ = 1550 nm (A/W)	Dark Current Vr = 0.9 x Vbr. (nA)		Capacitance M = 10 f = 1 MHz (pF)	Breakdown Voltage Vbr. 100uA (V)		Temperature Coefficient of Breakdown Voltage (V/°C)	Bandwidth -3dB M = 10 λ = 1550 nm (GHz)
			Typ	Max	Typ	Typ	Max		Typ
APD007-15-60-xxxx	950 ~ 1700	9	1	20	1.2	60	80	0.15	2
APD020-15-60-xxxx			5	50	2.5	60	80	0.15	1

*1: Please refer to mechanical outline section to choose desired package options.

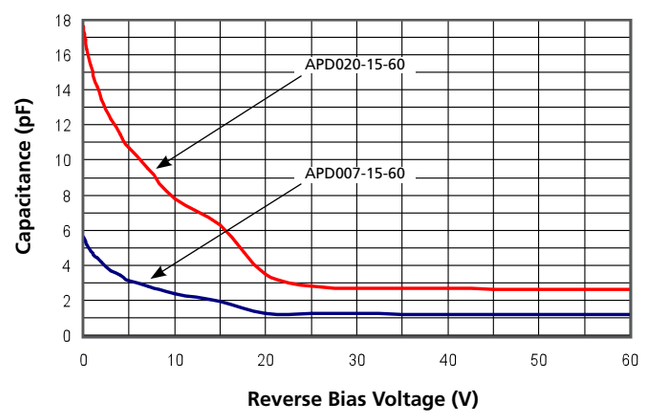
Typ. Spectral Responce (T_A= 23˚C, M = 1)



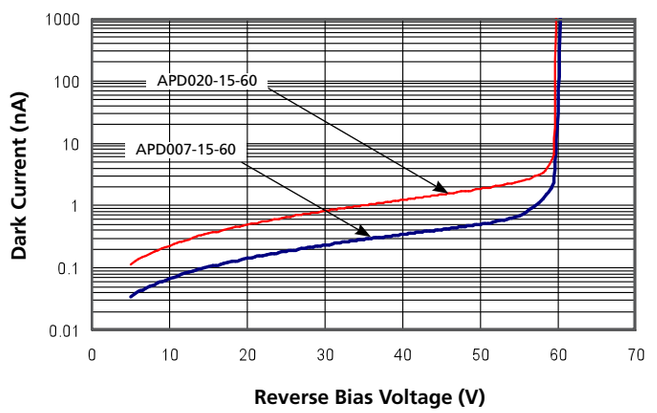
Typ. Gain vs. Reverse Bias (T_A= 23˚C, 1550 nm)



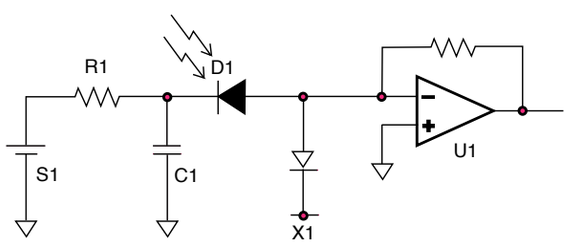
Typ. Capacitance vs. Reverse Bias (T_A= 23˚C)



Typ. Dark Current vs. Reverse Bias (T_A= 23˚C)



Typical Peripheral Circuit

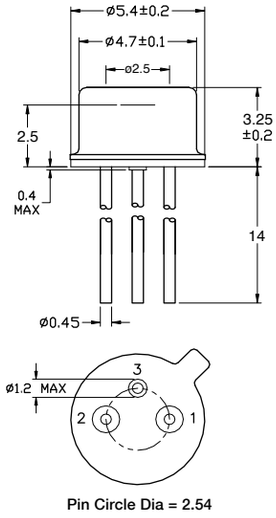


S1	Bias Supply Voltage (and temperature compensation as needed)
R1	Current Limiting Resistor
C1	Capacitor
D1	Avalanche Photodiode
X1	Excessive Voltage Protective Circuit
U1	High-speed Op-Amp Readout Circuit

Mechanical Specifications

All units in mm. Pinouts are bottom view.

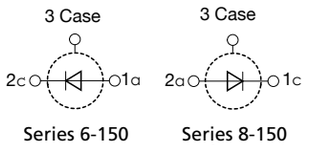
T52



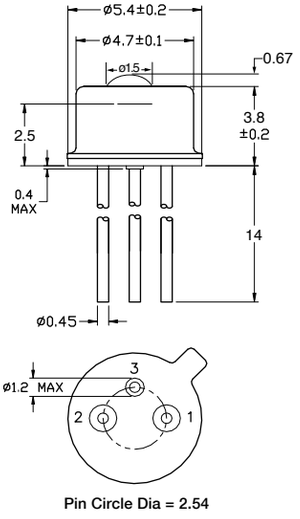
Pin Circle Dia = 2.54

	Products
Series 6-150	APD02-6-150-T52
	APD05-6-150-T52
	APD10-6-150-T52
Series 8-150	APD02-8-150-T52
	APD05-8-150-T52
	APD10-8-150-T52
Series 9-250	APD02-9-250-T52
	APD05-9-250-T52
	APD10-9-250-T52

Glass window may extend a maximum of 0.1 mm above the upper surface of the cap.

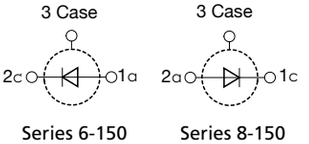


T52L (with lens)

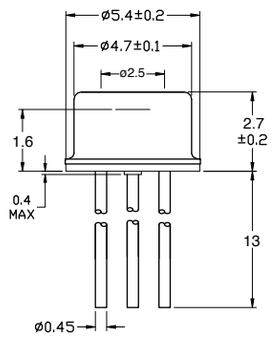


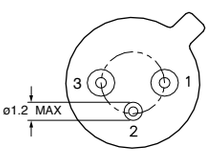
Pin Circle Dia = 2.54

	Products
Series 6-150	APD02-6-150-T52L
	APD05-6-150-T52L
Series 8-150	APD02-8-150-T52L
	APD05-8-150-T52L
Series 9-250	APD02-9-250-T52L
	APD05-9-250-T52L



T46

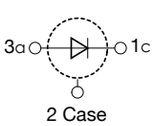




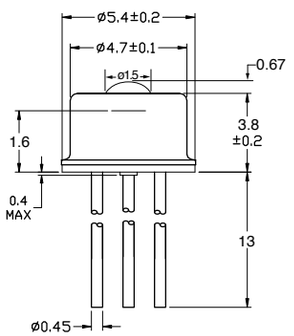
Pin Circle Dia = 2.54

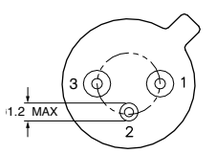
	Products
Series 15-60	APD007-15-60-T46
	APD020-15-60-T46

Window is broadband A/R coated Centered at 1300nm.



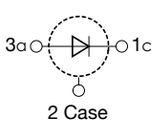
T46L (with lens)



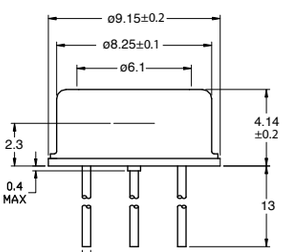


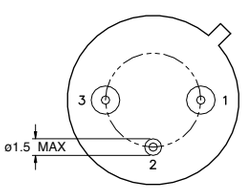
Pin Circle Dia = 2.54

	Products
Series 15-60	APD007-15-60-T46L
	APD020-15-60-T46L



TO5

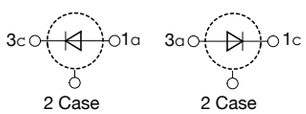




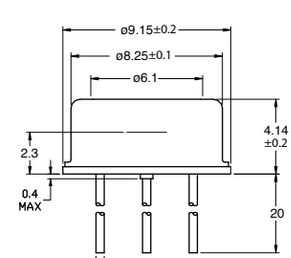
Pin Circle Dia = 5.08

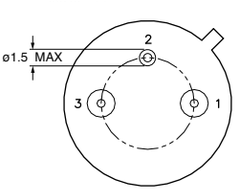
	Products
Series 6-150	APD15-6-150-TO5
	APD30-6-150-TO5
Series 8-150	APD15-8-150-TO5
	APD30-8-150-TO5
Series 9-250	APD15-9-250-TO5

Glass window may extend a maximum of 0.2 mm above the upper surface of the cap.



T5H

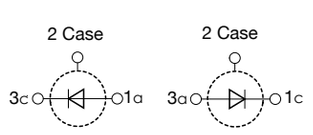




Pin Circle Dia = 5.08

	Products
Series 6-150	APD15-6-150-T5H
	APD30-6-150-T5H
Series 8-150	APD15-8-150-T5H
	APD30-8-150-T5H
Series 9-250	APD15-9-250-T5H

Glass window may extend a maximum of 0.2 mm above the upper surface of the cap.



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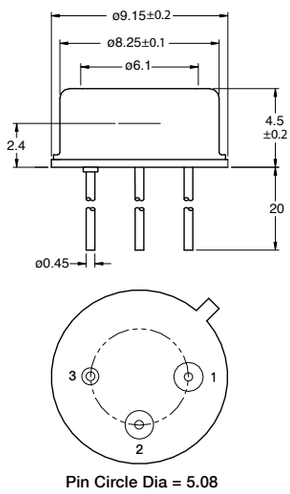
Mechanical Specifications

All units in mm. Pinouts are bottom view.

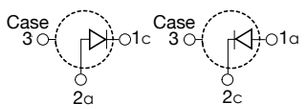
T5i



Pin Circle Dia = 5.08

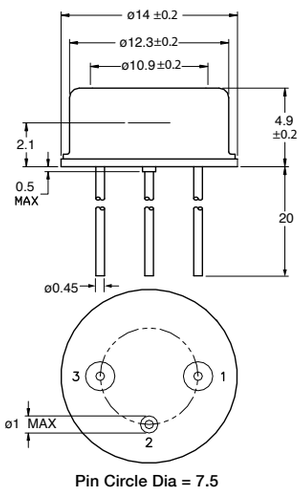
	Products
Series 6-150	APD15-6-150-T5i
	APD30-6-150-T5i
Series 8-150	APD15-8-150-T5i
	APD30-8-150-T5i
Series 9-250	APD15-9-250-T5i

Glass window may extend a maximum of 0.2 mm above the upper surface of the cap.



Series 6-150 | Series 8-150 Series 9-250

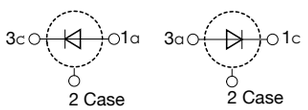
TO8



Pin Circle Dia = 7.5

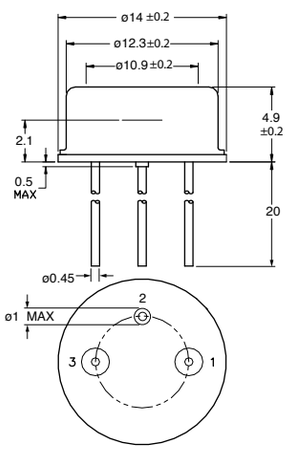
	Products
Series 6-150	APD50-6-150-TO8
Series 8-150	APD50-8-150-TO8

Glass window may extend a maximum of 0.2 mm above the upper surface of the cap.



Series 6-150 | Series 8-150

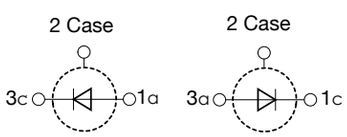
T8H



Pin Circle Dia = 7.5

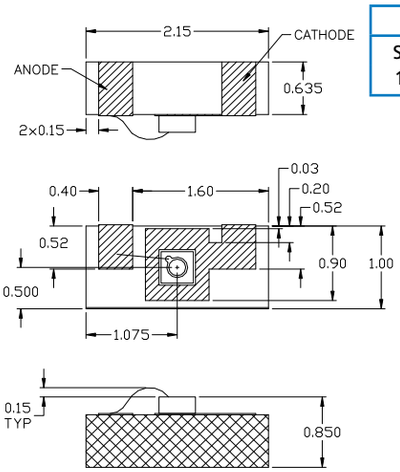
	Products
Series 6-150	APD50-6-150-T8H
Series 8-150	APD50-8-150-T8H

Glass window may extend a maximum of 0.2 mm above the upper surface of the cap.



Series 6-150 | Series 8-150

WCER



	Products
Series 15-60	APD007-15-60-WCER
	APD020-15-60-WCER

Die is mounted with a tolerance of ±75um.