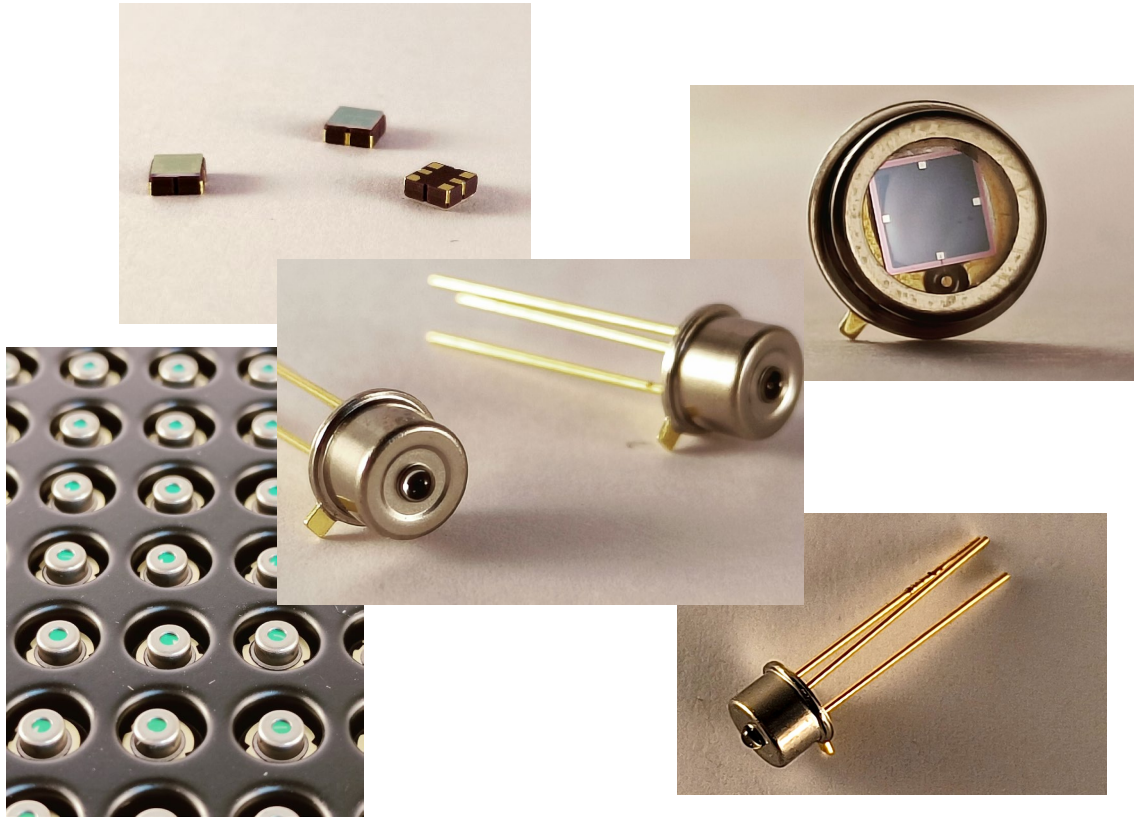


InGaAs PIN Photodiodes, and Avalanche Photodiodes (APDs)



PremierPhotonics' PIN photodiodes, avalanche photodiodes (APDs), and related components optimized for telecom, datacom, sensing, LIDAR, industrial and medical applications.

- InGaAs, extended InGaAs and Silicon PIN and avalanche (APD) photodetectors for laser range finders, Test & Measurement, gas sensing, laser power monitoring
- Large area Si PIN PD for IR guidance and triangulation
- InGaAs PIN PD arrays for telecom and defense countermeasures



PremierPhotonics



Boston Electronics | www.boselec.com | shop.boselec.com |
boselec@boselec.com | +1.566.3821



PremierPhotonics

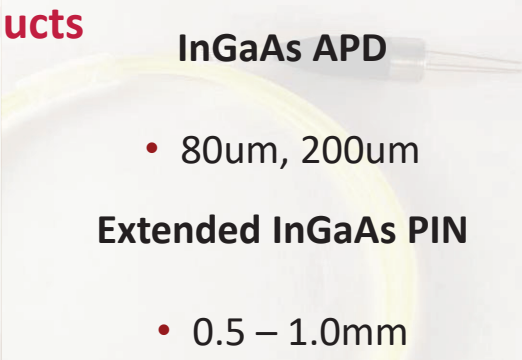
UK fabless manufacturer of photonic components.



BostonElectronics

InGaAs PIN Detectors: Secure Your InGaAs Supply Chain Today

While industry lead times continue to stretch and prices are rising, **PremierPhotonics** offers a **fast, dependable alternative** – your trusted second source or direct replacement for high-performance InGaAs

Products	
 InGaAs PIN • 75µm – 10mm • 1xN arrays • VIS enhanced • Quadrants	 InGaAs APD • 80um, 200um Extended InGaAs PIN • 0.5 – 1.0mm



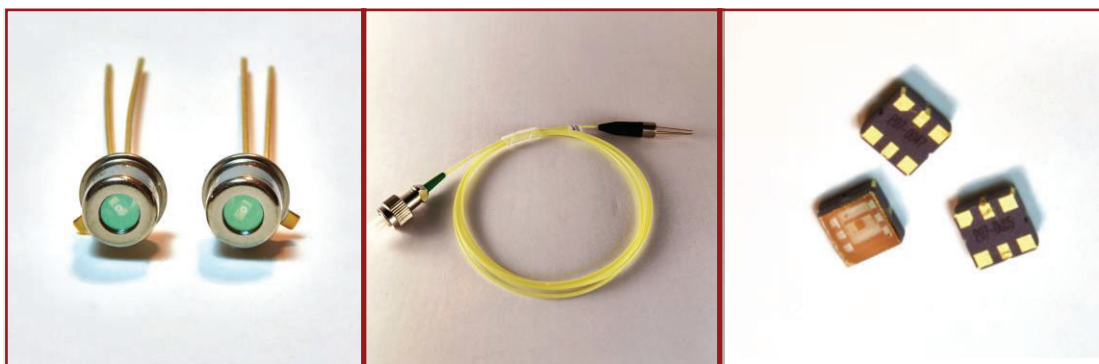
In Stock



Short Lead Times



Stable Pricing



Customization

- Drop-in replacement
 - Optical design
 - Detector design

EOL products

We specialize in manufacturing and re-designing obsolete products.

Boston Electronics | www.boselec.com || shop.boselec.com
boselec@boselec.com | +1.516.566.3821

High-Performance Photodetectors – UV to IR

Specializing in UV to near-infrared wavelengths, we offer a comprehensive range of **PremierPhotonics**' PIN photodiodes, avalanche photodiodes (APDs), and related components optimized for telecom, datacom, sensing, LIDAR, industrial and medical applications.

- InGaAs, extended InGaAs and Silicon PIN and avalanche (APD) photodetectors for laser range finders, Test & Measurement, gas sensing, laser power monitoring
- Large area Si PIN PD for IR guidance and triangulation
- InGaAs PIN PD arrays for telecom and defense countermeasures

InGaAs PIN photodetectors

High-speed, low-noise detectors for 800–1700 nm applications including: ranging, test & measurement, laser engineering, medical, telecom and datacom. Active areas from 75 μm up to 3000 μm in various packages.

Extended InGaAs APDs

Reliable and low-noise detectors for 1200–2600 nm applications including: gas sensing, thermal measurements, laser engineering, medical. Active areas from 0.5m up to 1.0m in various packages.

InGaAs APDs

Our avalanche photodiodes (APDs) come in two variants: type 4 and type 5. Both are used as low-noise detectors for 900–1700 nm applications including: ranging, LIDAR, test & measurement, laser engineering, medical, telecom and datacom.

Type 5 is the gold standard in the ranging and LIDAR industry, providing high gains and low noise operation. Both 80 and 200 μm variants are available.

Type 4 is a cost-efficient alternative to the higher performing type 5, while providing sufficient gain for many applications. Both 80 and 200 μm variants are available.

Silicon Photodetectors

PremierPhotonics offers high-performance silicon-based photodetectors optimized for visible and near-infrared applications. Our silicon portfolio includes both PIN photodiodes and avalanche photodiodes (APDs), delivering excellent responsivity, low noise, and high reliability for industrial sensing, LIDAR, spectroscopy, medical devices, and consumer optics.

ABOUT PREMIER PHOTONICS

Established in 2020 Premier Photonics is an agile, fabless photonic manufacturer specializing in the design and manufacturing of photonics technologies.

Boston Electronics is proud to be Premier Photonics' North American distributor as well as serving international markets.

With expertise in the design, volume manufacturing, supply chain management and packaging of photonic devices and assemblies, Premier Photonics provides end-to-end solutions and support across a broad range of opto-electronic assemblies and technologies.

The company's portfolio includes photodetectors, light emitting diodes, laser diodes and fiber assemblies. They are a **trusted** fabless manufacturer for OEM clients who operate across the industrial, analytical and telecommunications sectors.

Premier Photonics was formed as an answer to the lack of **dependable photonic component suppliers** with a business model allowing for creation of a **secure supply chain**. While operating from the UK, their global and **reliable** supply chain allows for a seamless transition from prototypes to volume production.

Shipped products share transferability of product design across supply chain maximizing **supplier resilience** as well as manufacturing scalability.



PremierPhotonics Part Number	Description		
	Type	Diam/Size	Notes
InGaAs PIN			
InGaAs-300-02	InGaAs PIN	300 µm	VIS enhanced Responsivity
InGaAs-500-02	InGaAs PIN	500 µm	VIS enhanced Responsivity
InGaAs-500-01	InGaAs PIN	500 µm	
InGaAs-1000-01	InGaAs PIN	1 mm	
InGaAs-1500-01	InGaAs PIN	1.5 mm	
InGaAs-3000-01	InGaAs PIN	3 mm	
InGaAs APD			
Ain-080-05-01	InGaAs APD	80 µm	High gain top performance
Ain-200-05-01	InGaAs APD	200 µm	High gain top performance
Ain-200-04-01	InGaAs APD	200 µm	



75μm InGaAs PIN PD in receptacle assembly

(P/N.: InGaAs-750-01-R)

Features

- 75μm active area
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	100	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (3s)	°C
Reverse voltage	V _R	-	-	20	V
Forward current	I _F	-	-	10	mA

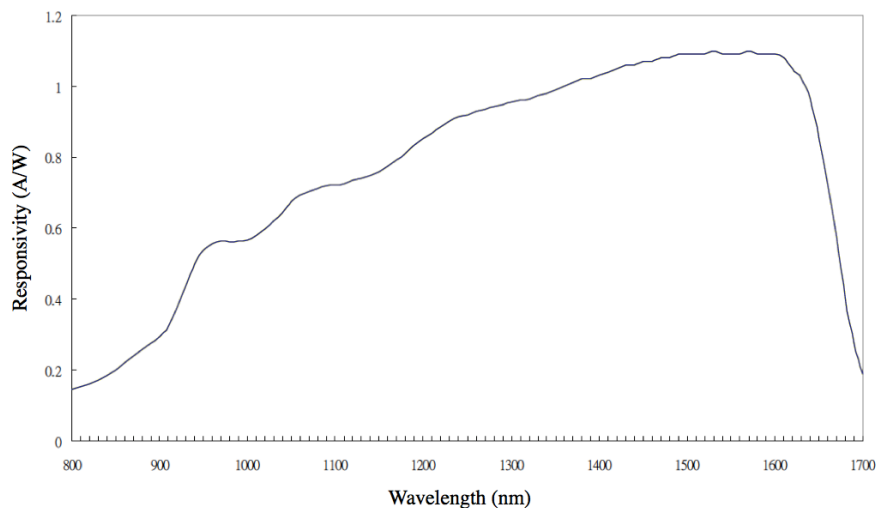
Opto-Electrical Characteristics

V_R = 5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area	Φ	-	75	-	μm
Wavelength range	λ	900	-	1650	nm
1310nm Responsivity	R	0.8	0.85	-	A/W
1550nm Responsivity		0.85	0.9	-	A/W
Capacitance @ f = 1MHz		-	-	0.8	pF
Dark current	I _D	-	0.1	1	nA
Bandwidth	BW	2	-	-	GHz
Breakdown voltage	V _B	20	-	-	V
Saturation power	P _{SAT}	2	-	-	mW

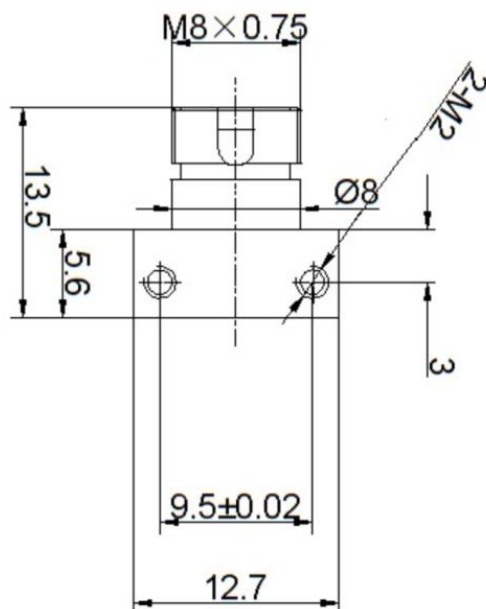
Typical Performance at 25°C

InGaAs die responsivity only

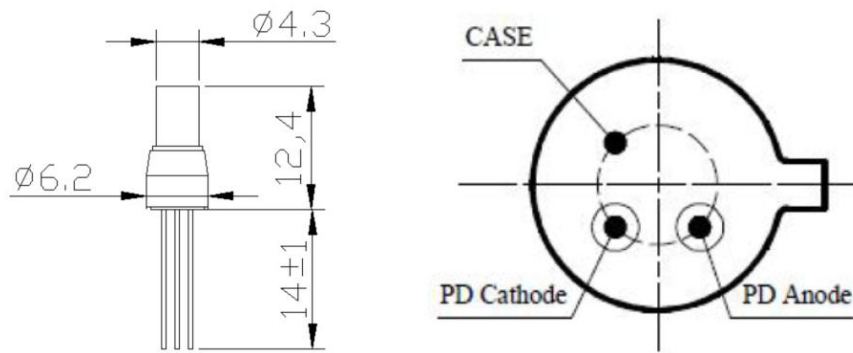


Dimensional outlines (unit = mm)

Receptacle (housing)

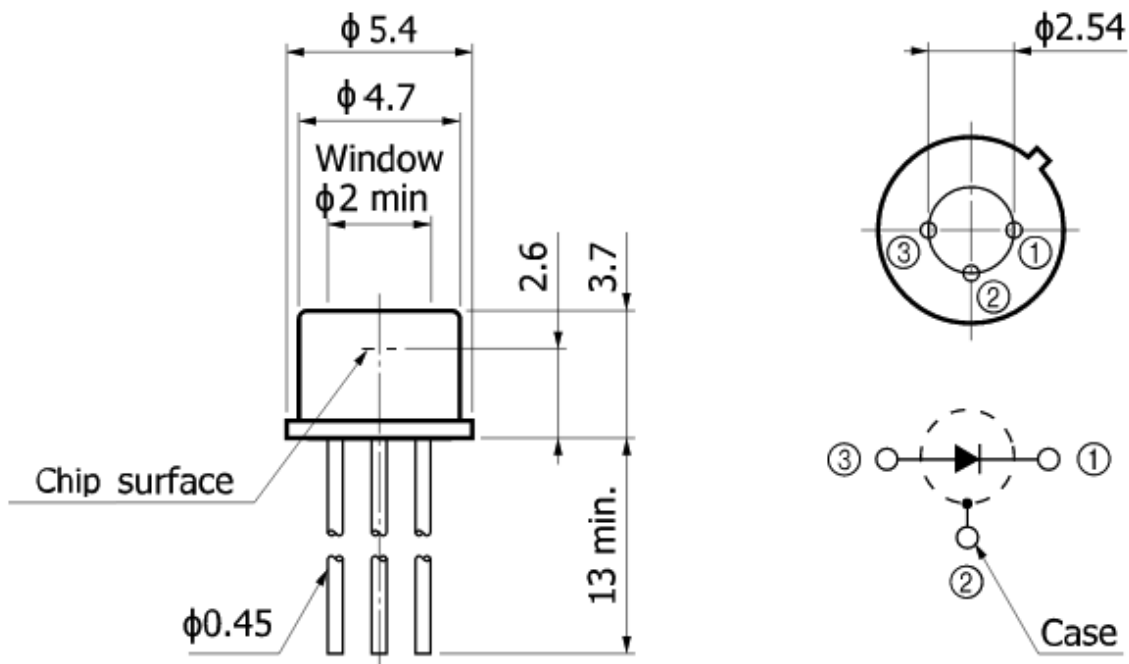


Receptacle (insert)



Package can be customized

TO

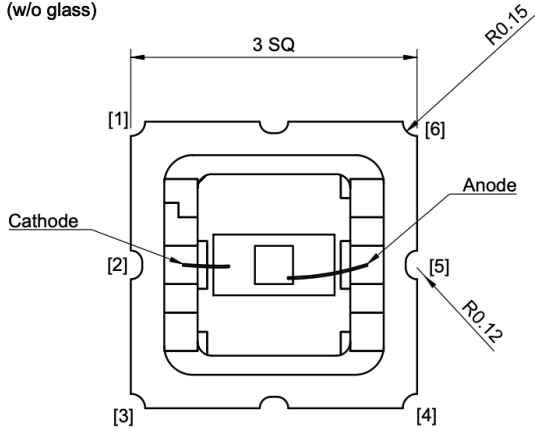


Package can be customized

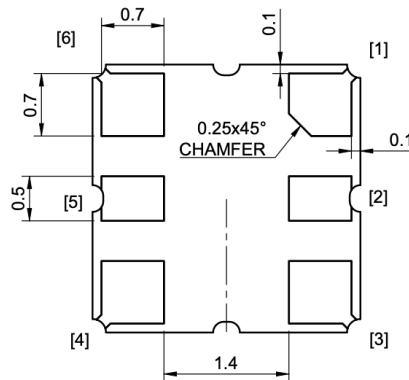


SMD

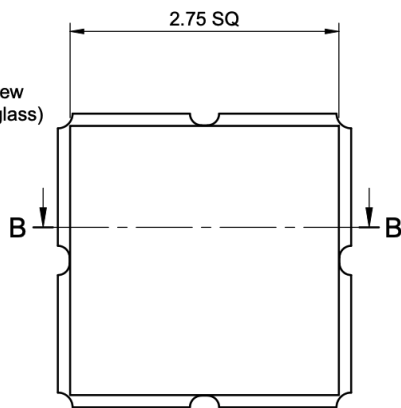
Top view
(w/o glass)



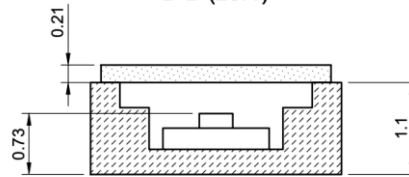
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



300μm InGaAs PIN PD (P/N.: InGaAs-300-02)

Features

- 300μm active area
- Low dark current and high responsivity at 850, 1310 and 1550nm
- Improved responsivity at 850nm.

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	85	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (10s)	°C
Reverse voltage	V _R	-	-	10	V
Forward current	I _F	-	-	2	mA

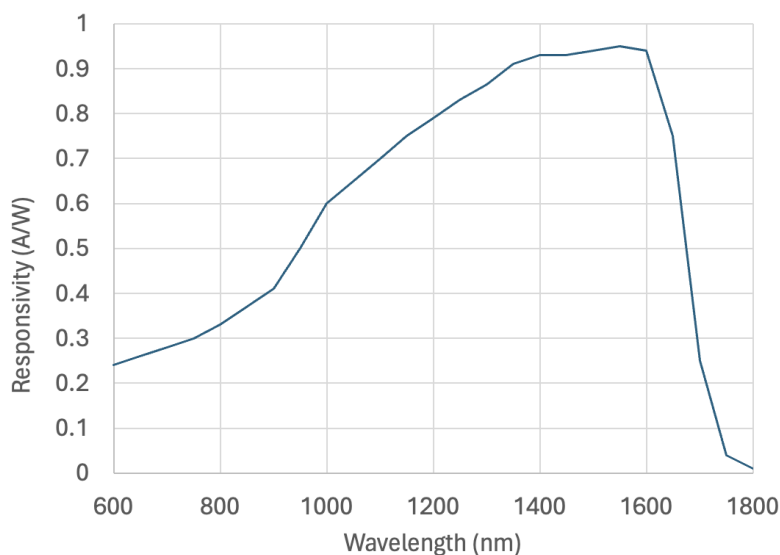
Opto-Electrical Characteristics

V_R = 5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area	Φ	-	300	-	μm
Wavelength range	λ	600	-	1700	nm
850nm Responsivity	R	0.35	0.4	-	A/W
1310nm Responsivity		0.8	0.9	-	A/W
1550nm Responsivity		0.9	0.95	-	A/W
Capacitance @ f = 1MHz		-	20	30	pF
Dark current	I _D	-	0.5	1	nA

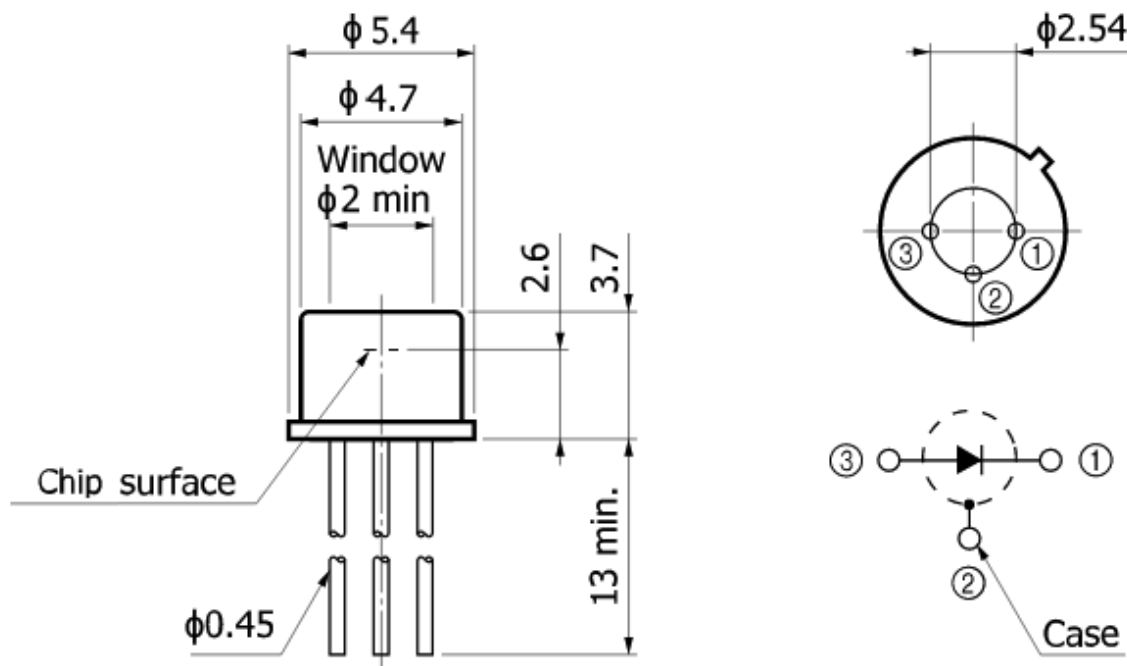
Typical Performance at 25°C

InGaAs die responsivity only



Dimensional outlines (unit = mm)

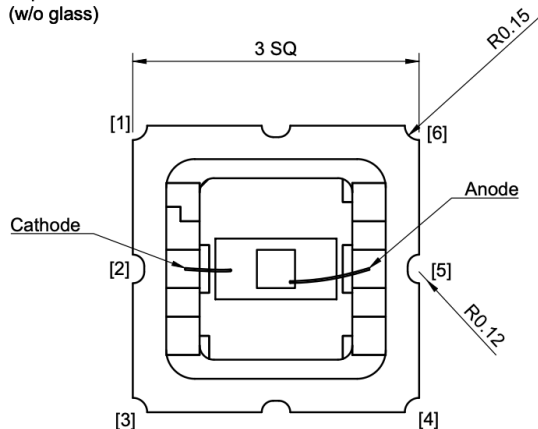
TO



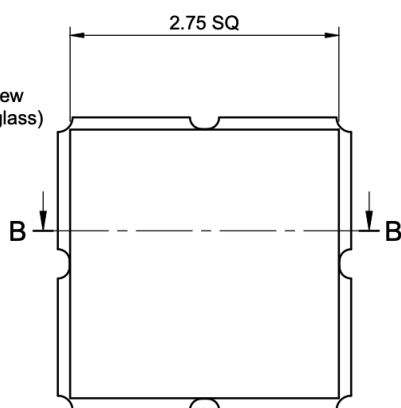
Package can be customized

SMD

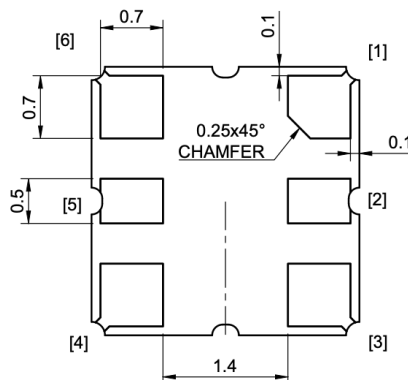
Top view
(w/o glass)



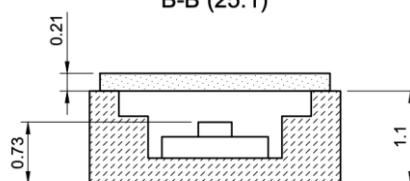
Top view
(with glass)



Bottom view



B-B (25:1)



Package can be customized



500 μ m InGaAs PIN PD

(P/N.: InGaAs-500-01)

Features

- 500 μ m active area (square)
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	125	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (10s)	°C
Reverse voltage	V _R			20	V

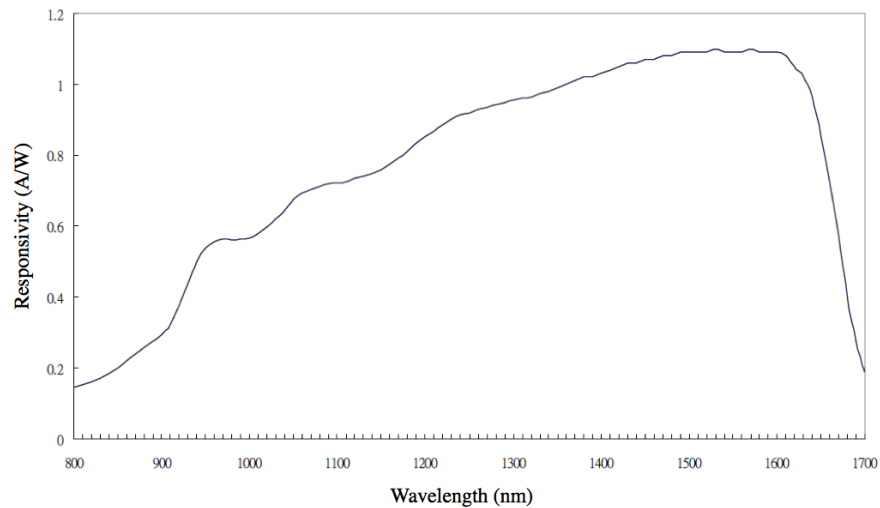
Opto-Electrical Characteristics

V_R = 5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area	Φ	-	500	-	μ m
Wavelength range	λ	800	-	1700	nm
1310nm Responsivity	R	0.9	0.95	-	A/W
1550nm Responsivity		0.95	1.0	-	A/W
Capacitance @ f = 1MHz		-	-	25	pF
Shunt Impedance (V _R = 10 mV)	R _{SH}	-	0.5	1	G Ω
Dark current	I _D	-	0.6	1	nA
Breakdown voltage	V _B	20	-	-	V

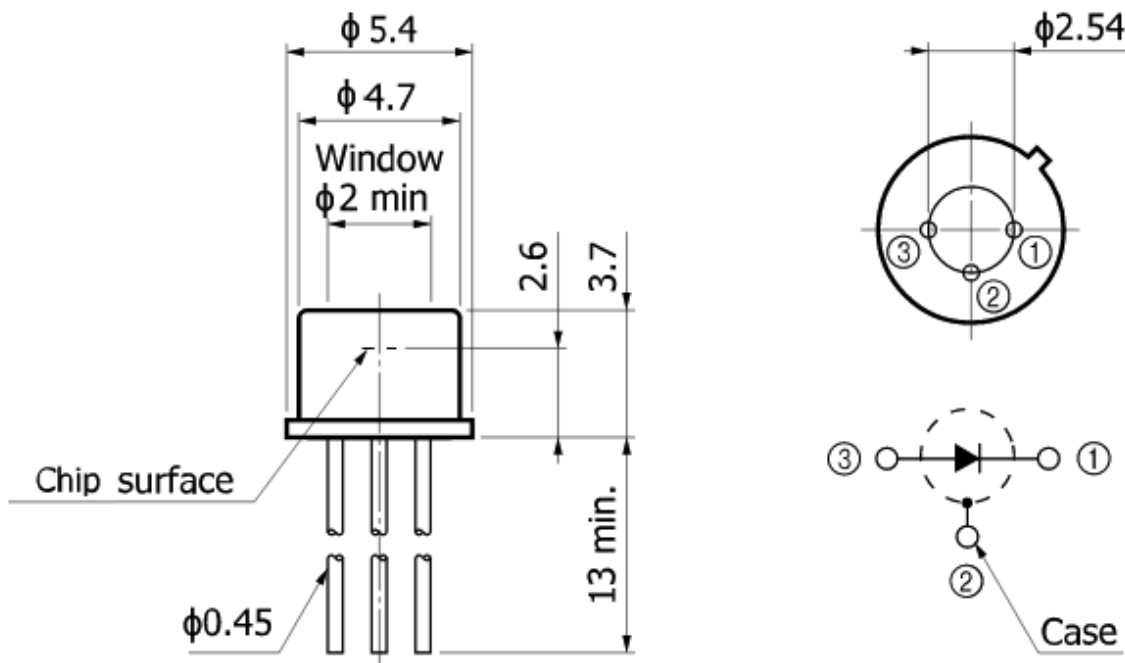
Typical Performance at 25°C

InGaAs die responsivity only



Dimensional outlines (unit = mm)

TO

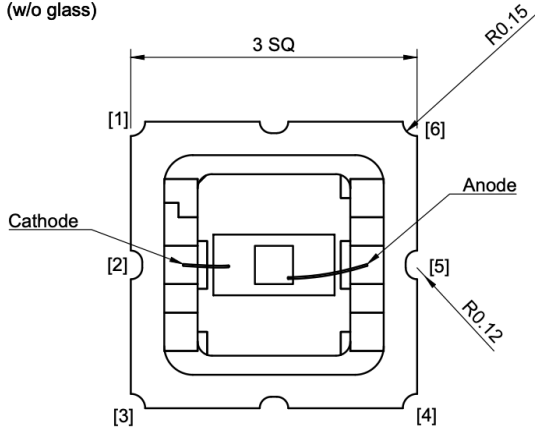


Package can be customized

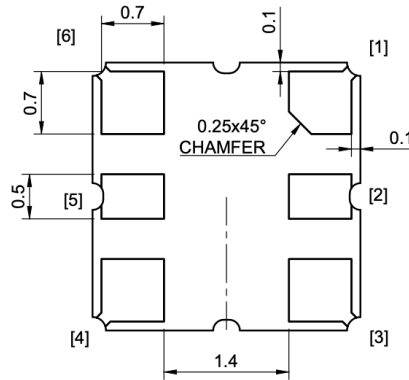


SMD

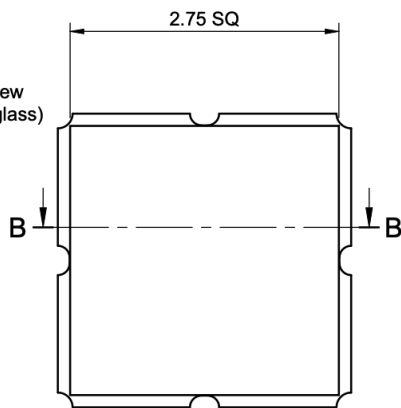
Top view
(w/o glass)



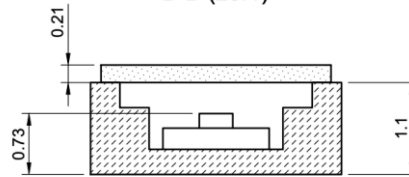
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



1mm InGaAs PIN PD

(P/N.: InGaAs-1000-01)

Features

- 1mm active area (square)
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	125	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (10s)	°C
Reverse voltage	V _R			20	V

Opto-Electrical Characteristics

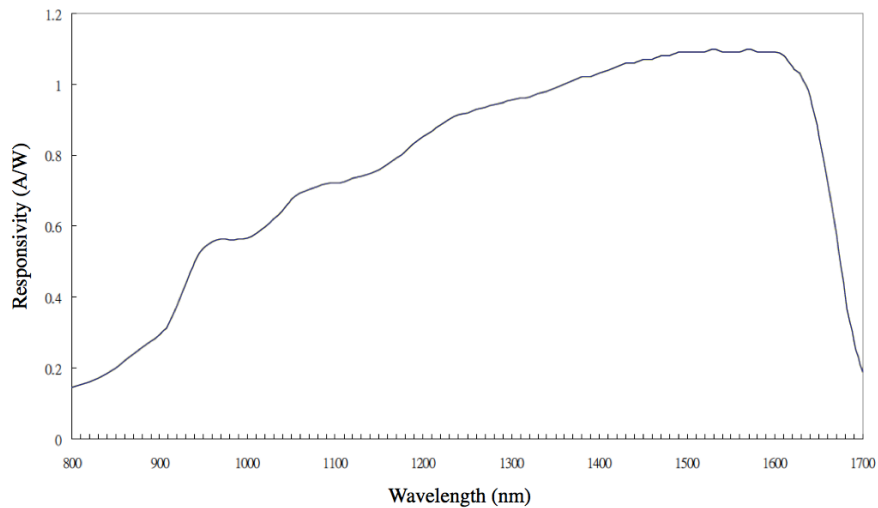
V_R = 5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area (square)		-	1000	-	μm
Wavelength range	λ	800	-	1700	nm
1310nm Responsivity	R	0.9	0.95	-	A/W
1550nm Responsivity		0.95	1.0	-	A/W
Capacitance @ f = 1MHz		-	85	95	pF
Dark current	I _D	-	0.6	1	nA
Rise time	t _R	-	-	1	μs
Breakdown voltage	V _B	20	-	-	V



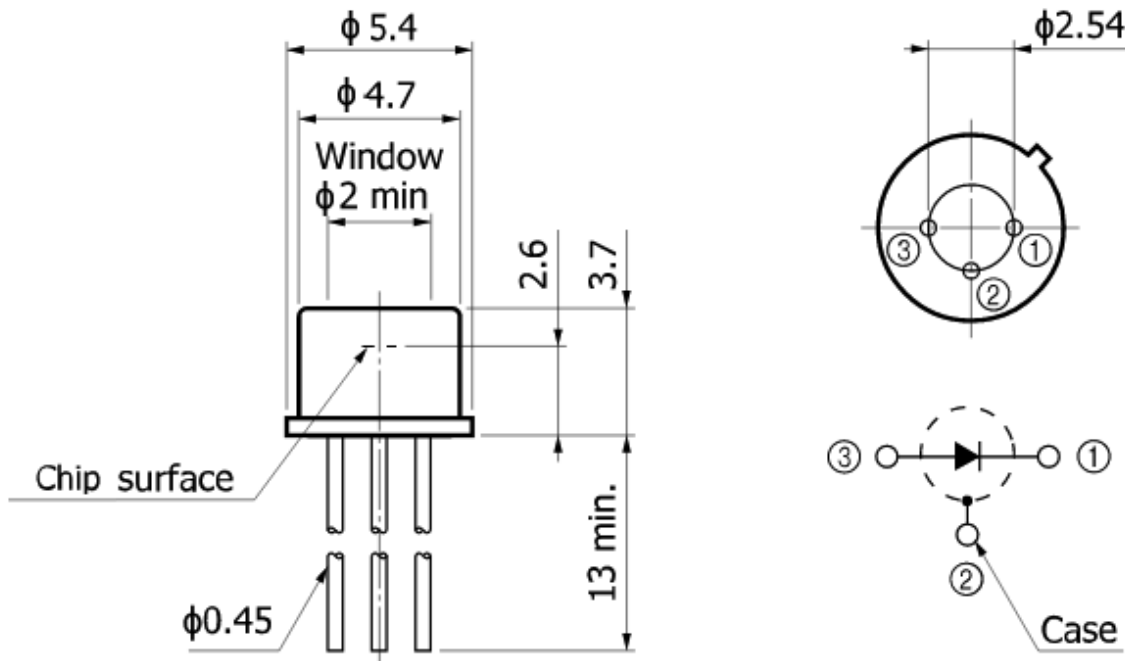
Typical Performance at 25°C

InGaAs die responsivity only



Dimensional outlines (unit = mm)

TO



Package can be customized or modified to SMD



2mm InGaAs PIN PD

(P/N.: InGaAs-2000-01)

Features

- 2mm active area (square)
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	125	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (10s)	°C
Reverse voltage	V _R			20	V

Opto-Electrical Characteristics

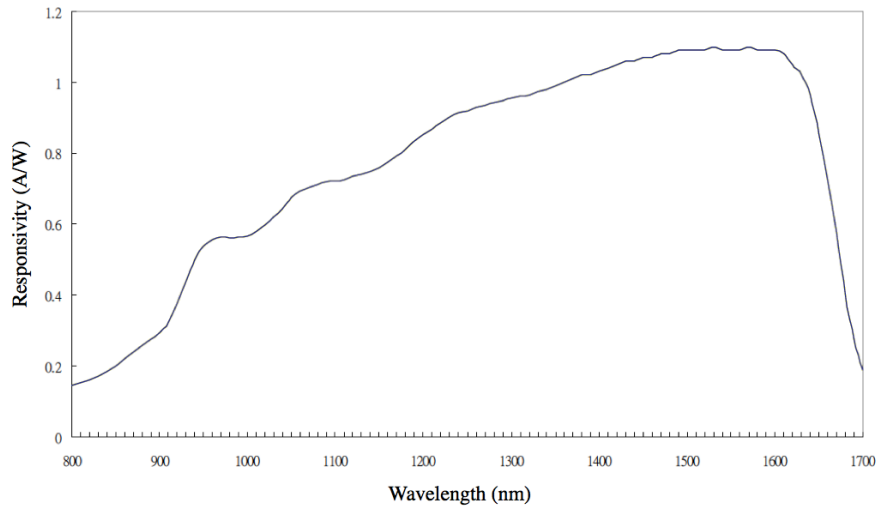
V_R = 5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area (square)		-	2000	-	μm
Wavelength range	λ	800	-	1700	nm
1310nm Responsivity	R	0.9	0.95	-	A/W
1550nm Responsivity		0.95	1.0	-	A/W
Capacitance @ f = 1MHz		-	130	220	pF
Dark current	I _D	-	2	5	nA
Rise time	t _R	-	-	10	μs
Breakdown voltage	V _B	20	-	-	V



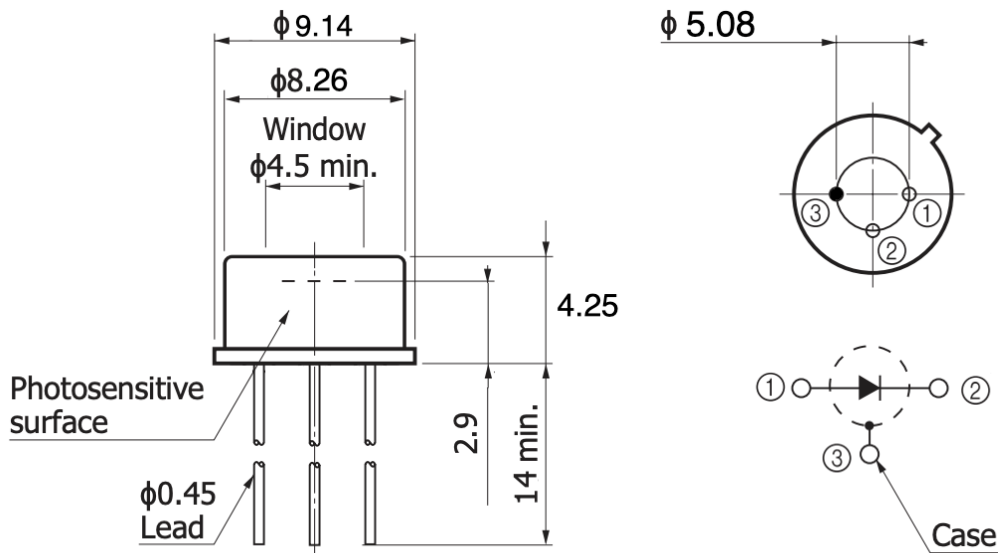
Typical Performance at 25°C

InGaAs die responsivity only



Dimensional outlines (unit = mm)

TO



Package can be customized or modified to SMD



3mm InGaAs PIN PD

(P/N.: InGaAs-3000-01)

Features

- 3mm active area (square)
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T_C	-40	-	85	°C
Storage Temperature	T_{STG}	-40	-	125	°C
Lead Soldering Temperature	T_{SOL}	-	-	260 (10s)	°C
Reverse voltage	V_R			20	V

Opto-Electrical Characteristics

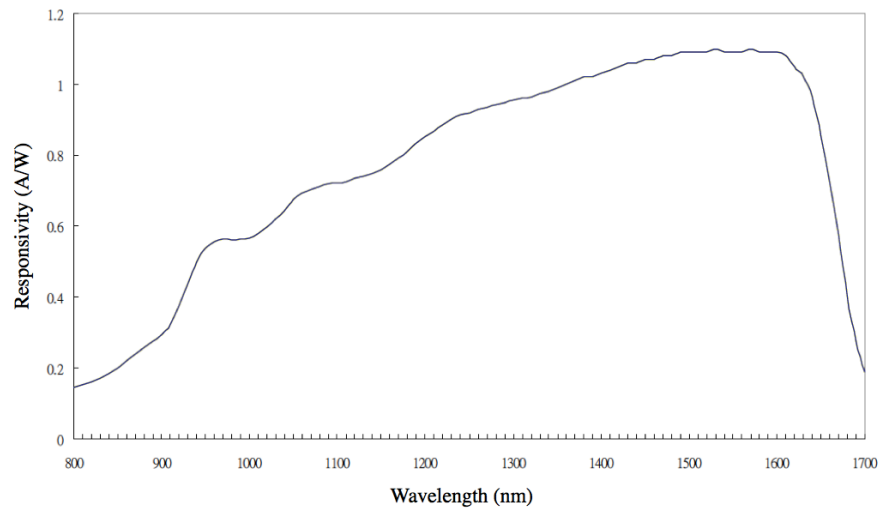
$V_R = 5V, 25\text{ °C}$

Parameter	Symbol	Min	Typ	Max	Unit
Active area (square)		-	3000	-	μm
Wavelength range	λ	800	-	1700	nm
1310nm Responsivity	R	0.9	0.95	-	A/W
1550nm Responsivity		0.95	1.0	-	A/W
Capacitance @ f= 1MHz		-	250	420	pF
Dark current	I_D	-	2	5	nA
Rise time	t_R	-	-	10	μs
Breakdown voltage	V_B	20	-	-	V



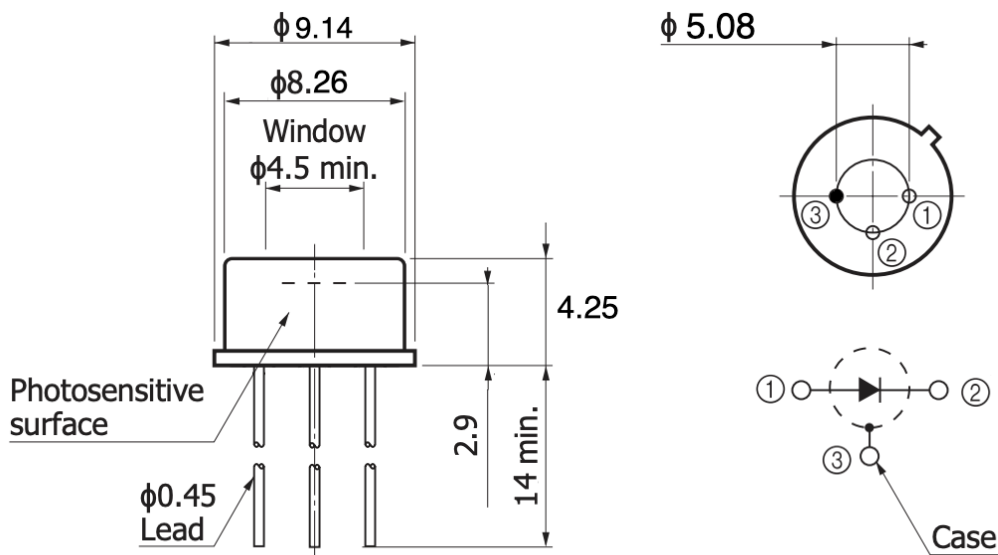
Typical Performance at 25°C

InGaAs die responsivity only



Dimensional outlines (unit = mm)

TO



Package can be customized or modified to SMD



0.5mm extended InGaAs PIN PD

(P/N.: ex-InGaAs-500-01)

Features

- 0.5mm active area diameter
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	125	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (5s)	°C
Reverse voltage	V _R	-		0.5	V
Reverse current	I _R	-	-	1.0	mA

Opto-Electrical Characteristics

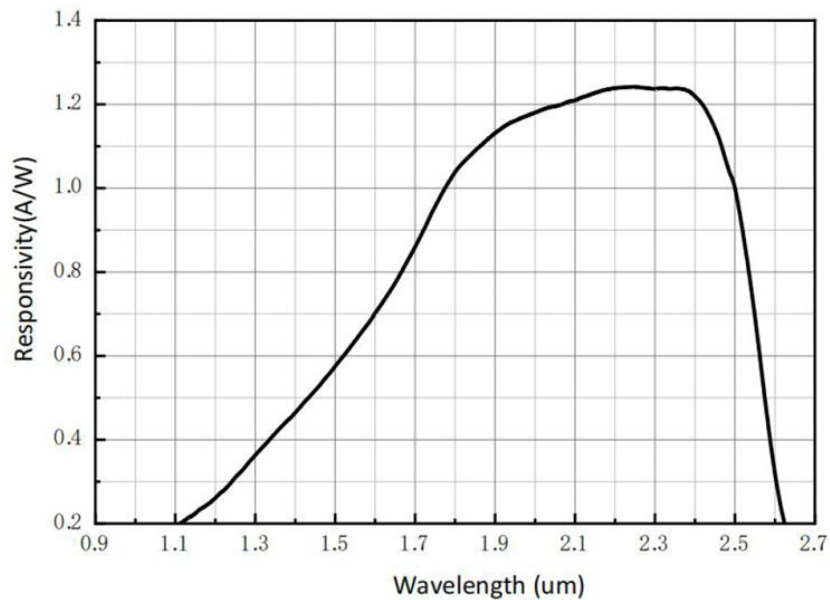
V_R = -0.5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area diameter	Φ	-	500	-	μm
Wavelength range	λ	1200	-	2600	nm
1.55 μm Responsivity	R	0.6	0.95	-	A/W
2.0 μm Responsivity		-	1.2	-	A/W
Capacitance @ f = 1MHz	C _t	-	125	-	pF
Dark current	I _D	-	2.2	5	uA



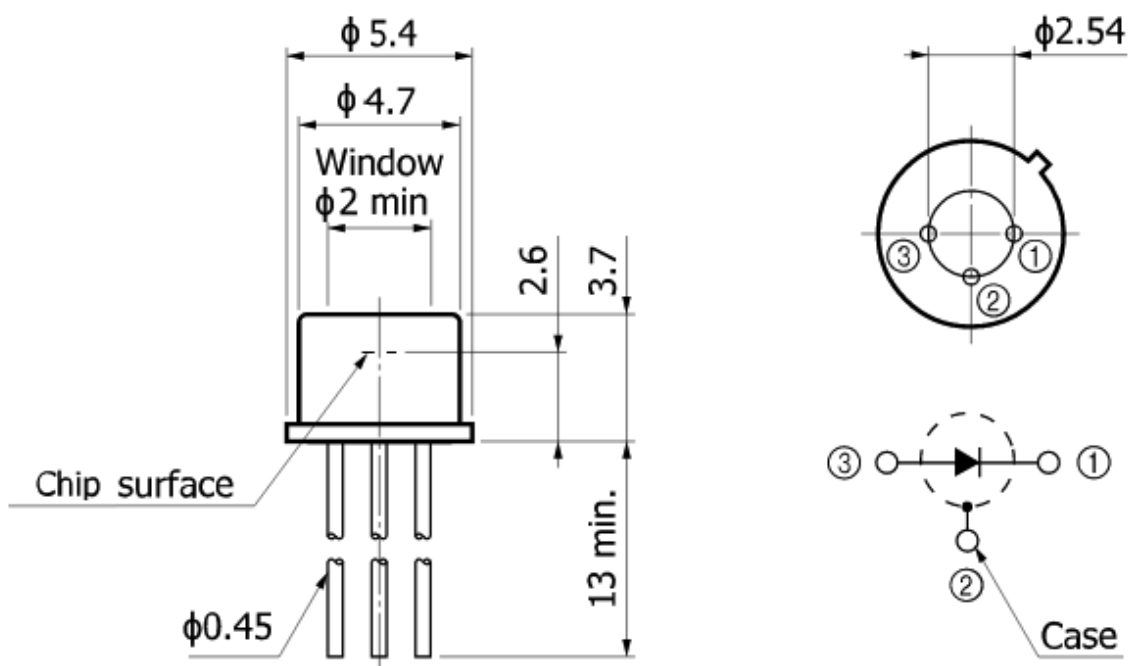
Typical Performance at 25°C

die responsivity only



Dimensional outlines (unit = mm)

TO

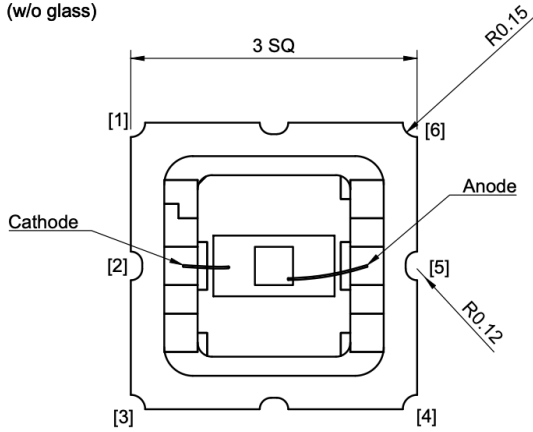


Package can be customized

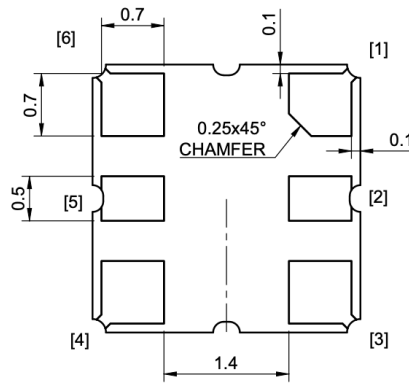


SMD

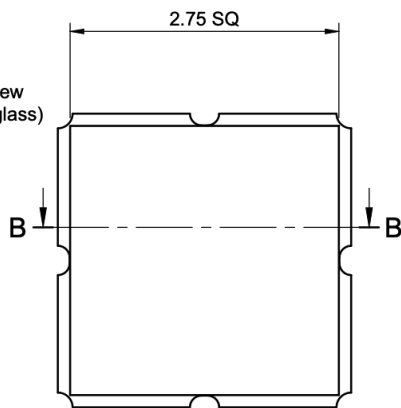
Top view
(w/o glass)



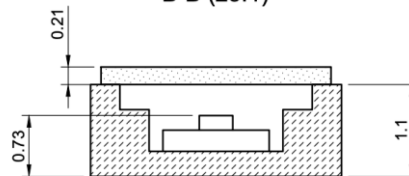
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



1mm extended InGaAs PIN PD

(P/N.: ex-InGaAs-1000-01)

Features

- 1.0mm active area diameter
- Low dark current and high responsivity

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-40	-	125	°C
Lead Soldering Temperature	T _{SOL}	-	-	260 (5s)	°C
Reverse voltage	V _R	-		0.5	V
Reverse current	I _R	-	-	1.0	mA

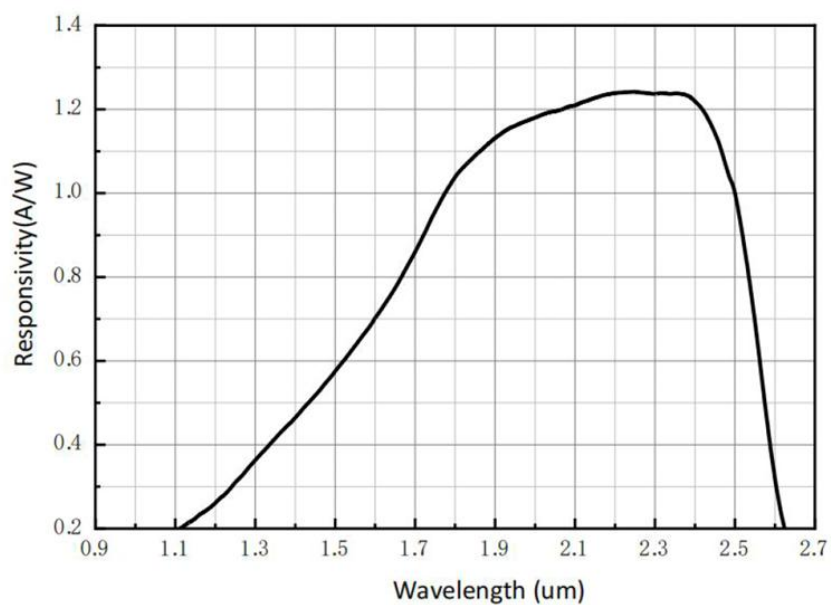
Opto-Electrical Characteristics

V_R = -0.5V, 25 °C

Parameter	Symbol	Min	Typ	Max	Unit
Active area diameter	Φ	-	1000	-	μm
Wavelength range	λ	1200	-	2600	nm
1.55 μm Responsivity	R	0.6	0.95	-	A/W
2.0 μm Responsivity		-	1.2	-	A/W
Capacitance @ f = 1MHz	C _t	-	600	-	pF
Dark current	I _D	-	10	30	uA

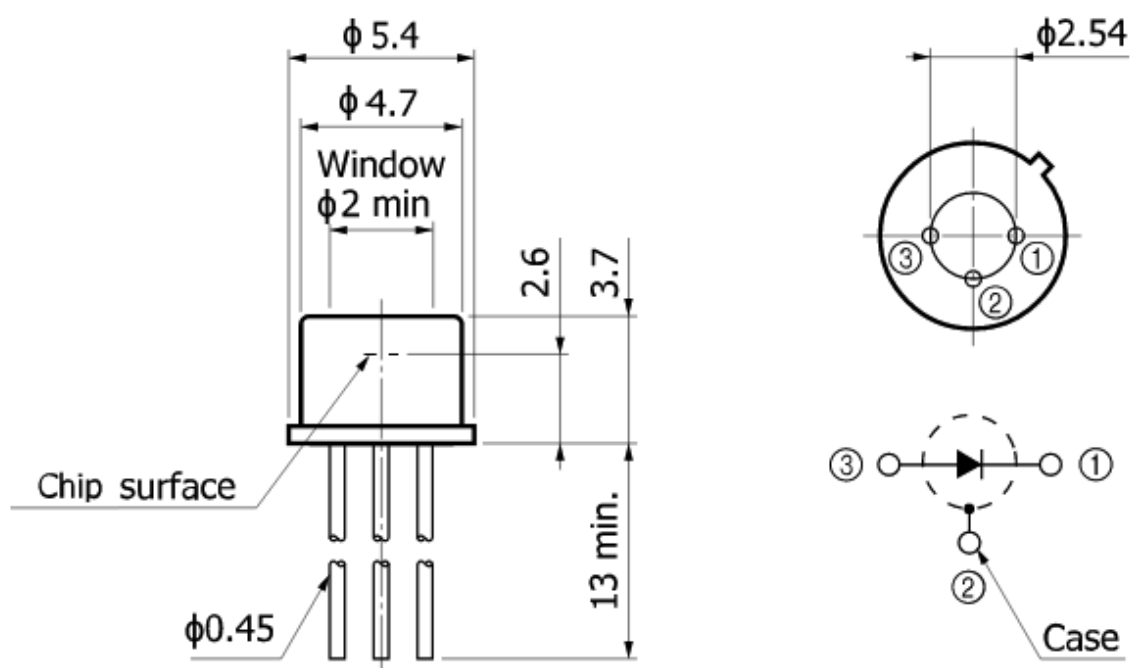
Typical Performance at 25°C

die responsivity only



Dimensional outlines (unit = mm)

TO

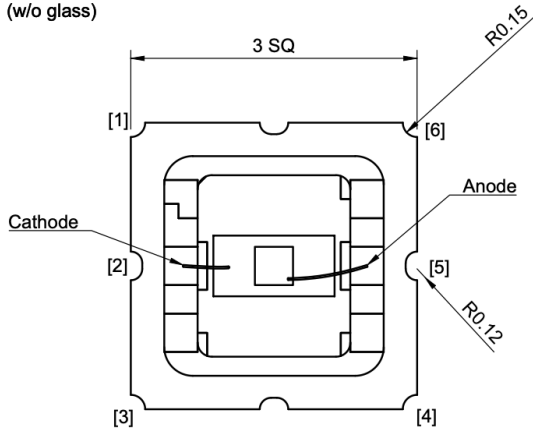


Package can be customized

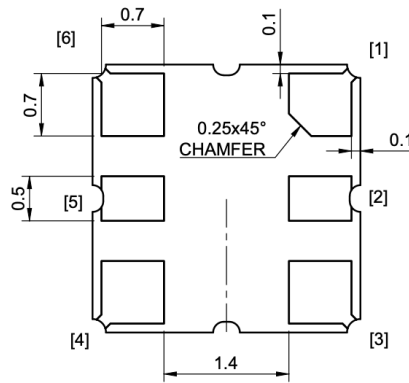


SMD

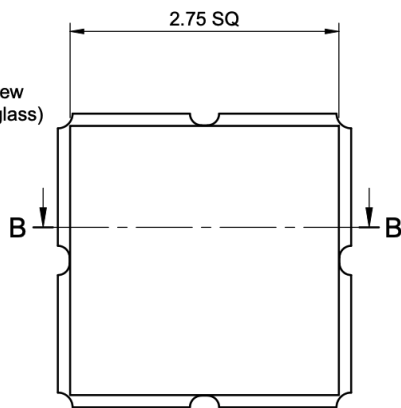
Top view
(w/o glass)



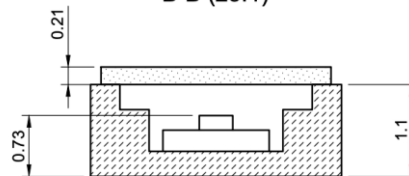
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized

75um pigtailed InGaAs PIN diode

(p/n.: InGaAs-0075-TO18-LC-APC)

Features

- 75um active area diameter
- Low dark current and high responsivity
- Pigtailed with LC/APC connector and 1m long SMF-28 fibre

Applications

- Optical fiber communication
- Laser power monitoring

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T_C	-40	-	85	°C
Storage Temperature	T_{STG}	-40	-	125	°C
Lead Soldering Temperature	T_{SOL}	-	-	260 (10s)	°C
Reverse voltage	V_R			20	V

Opto-Electrical Characteristics

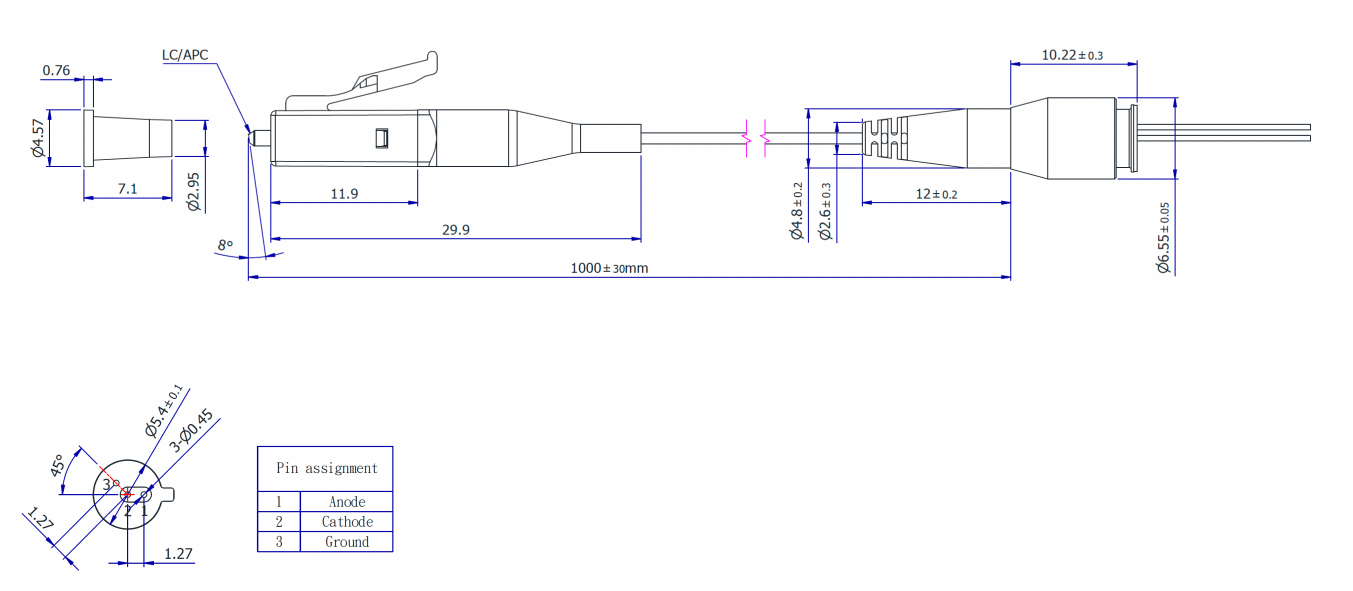
$V_R = -5V, 25^\circ C$

Parameter	Symbol	Min	Typ	Max	Unit
Active area diameter	Φ	-	75	-	μm
Wavelength range	λ	1260	-	1620	nm
1310nm Responsivity	R	0.85	0.9	-	A/W
1550nm Responsivity		0.90	0.95	-	A/W
Capacitance @ f = 1MHz	C_J	-	1.5	-	pF
Optical back reflection	RL	40	-	-	dB
Dark current	I_D	-	0.03	0.5	nA
Rise time	t_R	-	0.2	1	ns
Fibre type		SMF-28, 1m long, LC/APC connector			

Disclaimer: This datasheet and its contents are confidential and subject to a change without prior notice.

Boston Electronics | www.boselec.com | shop.boselec.com | boselec@boselec.com | +1.516.566.3821

Dimensional outlines (unit = mm)



APD



80μm InGaAs APD (Type 4)

(P/N.: Ain-080-04-01)

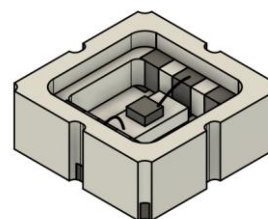
Features

- Low noise (1nA typ.) and gain $M = 10$ InGaAs APDs.
- Small Terminal Capacitance = 0.45 pF at $M = 10$.
- Active Area = 80μm.

Applications

- laser range finding

3D view (w/o glass)

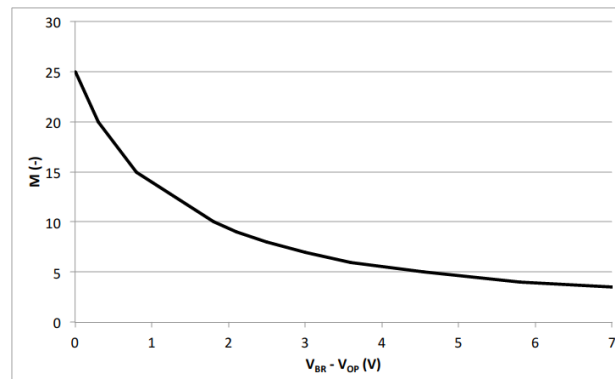
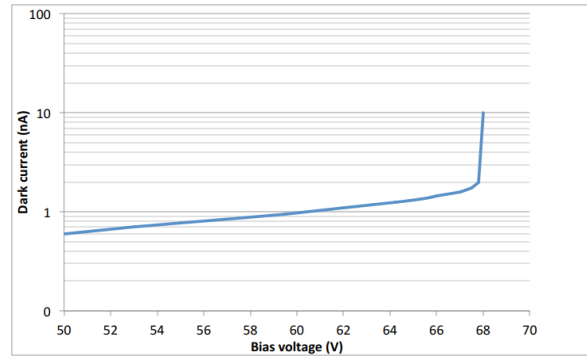
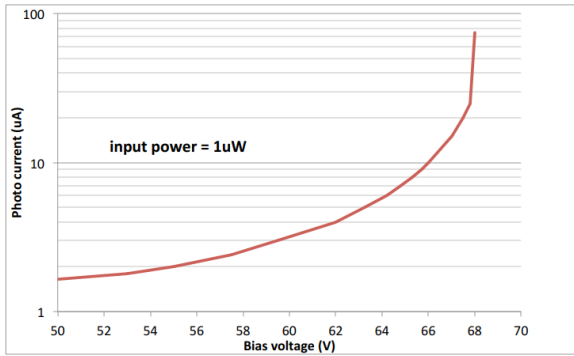


Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Forward Current	I_F	-	-	1	mA
Reverse Voltage	V_R	-	-	$0.99 \times V_{BR}$	V
Operating Case Temperature	T_C	-40	-	85	°C
Storage Temperature	T_{STG}	-40	-	85	°C

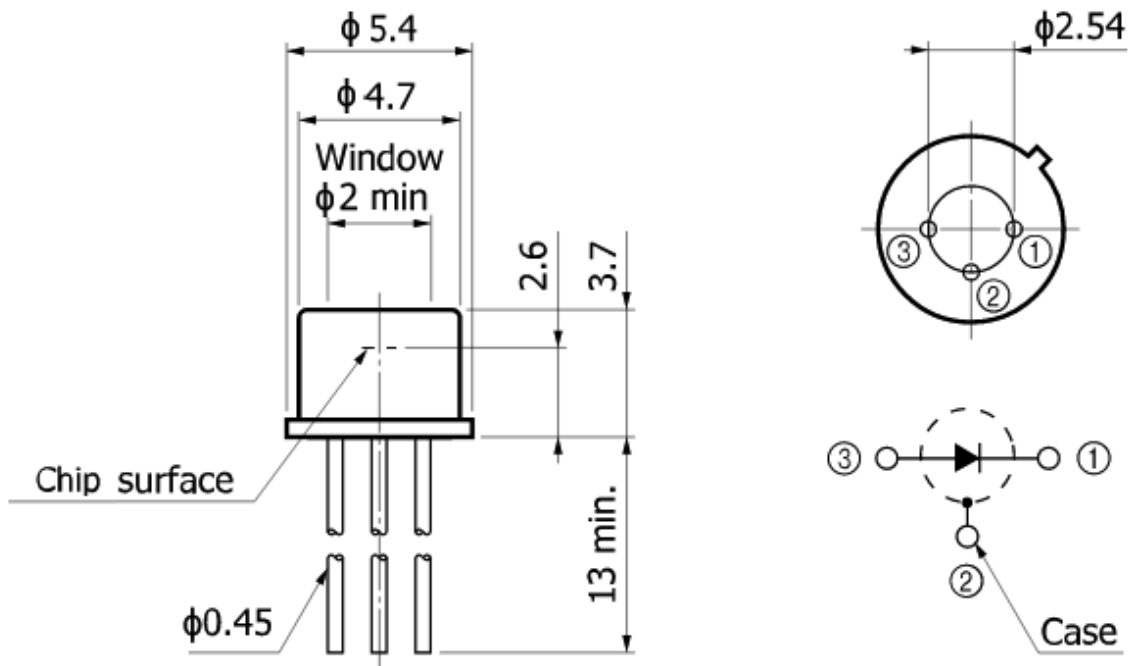
Opto-Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	950		1650	nm	
Reverse Breakdown Voltage	V_{BR}	50	60	75	V	$I_D = 10\mu A$
Multiplication Factor	M	-	10	-		$V = V_{BR} - 3V$
		-	20	-		$V = V_{BR} - 1V$
Spectral Responsivity	S	0.9	1	-	A/W	1550nm, $M = 1$
Multiplied Dark Current	I_{DM}	-	1	2	nA	$M = 10$
Terminal Capacitance	C_J	-	0.45	2	pF	$M = 10$
Temperature coeff of V_{BR}	$\Delta V/\Delta T$	-	0.1	-	V/°C	$T = 25^\circ C$



Dimensional outlines (unit = mm)

TO

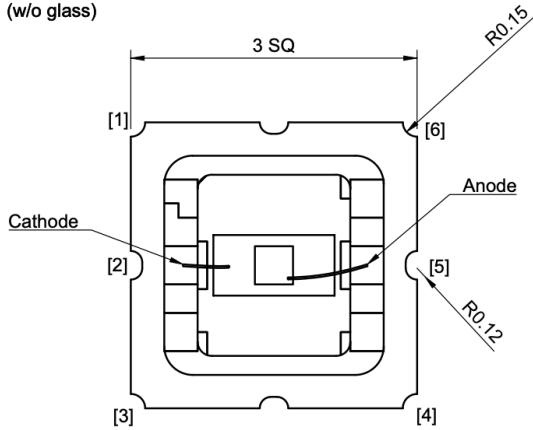


Package can be customized

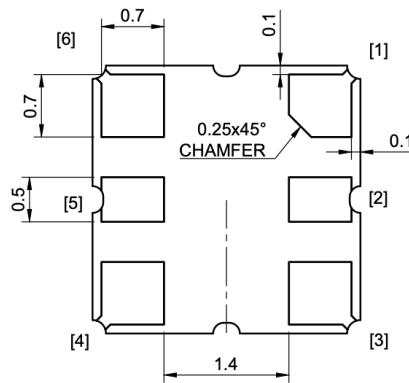


SMD

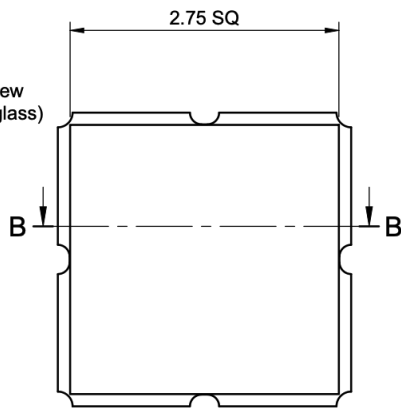
Top view
(w/o glass)



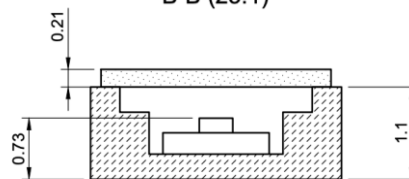
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



80μm InGaAs APD (Type 5)

(P/N.: Ain-080-05-01)

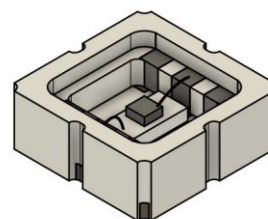
Features

- Excellent linearity, high power handling (0dBm) and high gain ($M = 10 - 20$) InGaAs APD.
- Typical operating voltage 8V ($M = 10$) below the breakdown voltage.
- Active Area = 80μm.

Applications

- High performance laser range finding
- Scientific instrumentation

3D view (w/o glass)

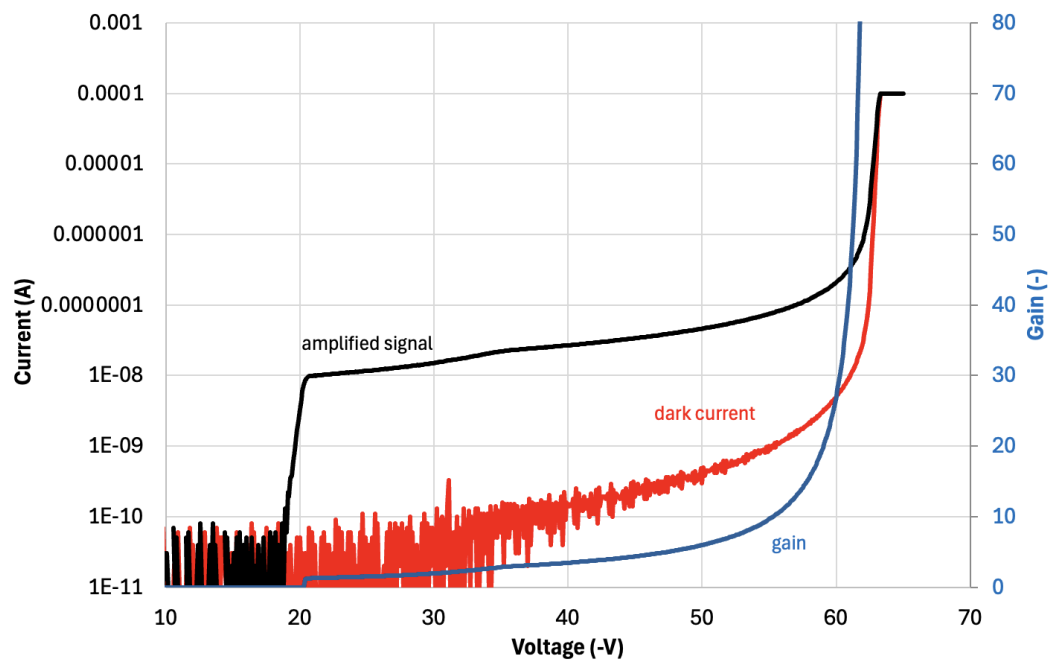


Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Forward Current	I_F	-	-	1	mA
Reverse Voltage	V_R	-	-	$0.99 \times V_{BR}$	V
CW input power	P_{MAX-CW}	-	-	1	mW
Operating Case Temperature	T_C	-40	-	85	°C
Storage Temperature	T_{STG}	-55	-	85	°C

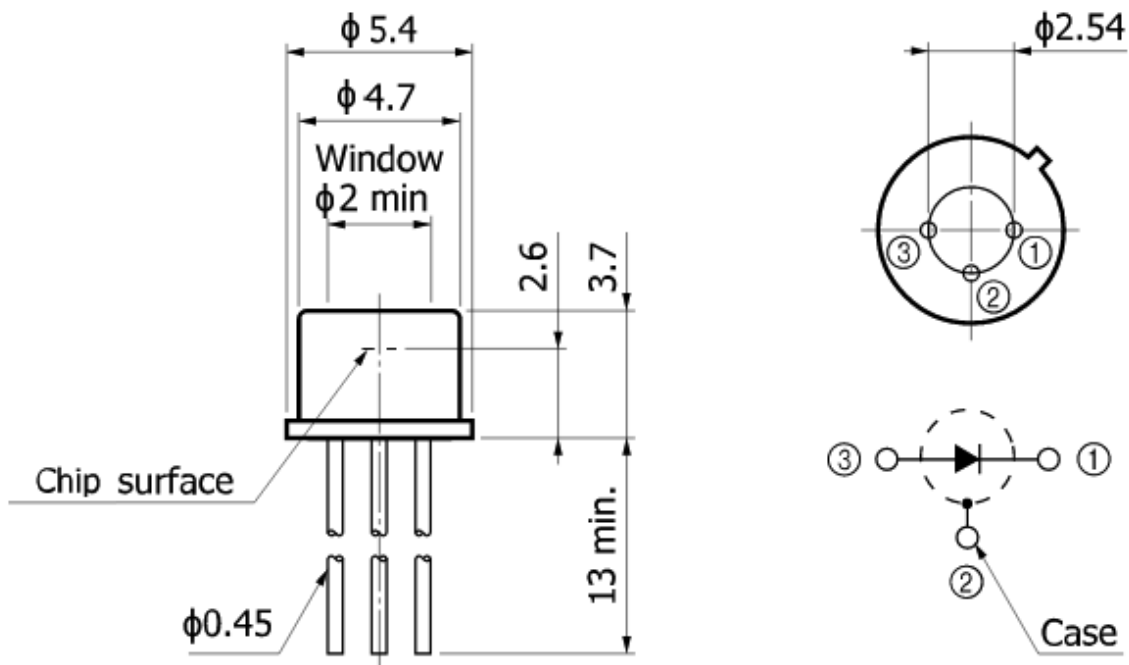
Opto-Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	1000		1630	nm	
Reverse Breakdown Voltage	V_{BR}	40	65	80	V	$I_D = 10\mu A$
Operating Voltage	V_{OP}	-	55	70	V	$M = 10$
Multiplication Factor	M	-	10	-		$V_{OP} = V_{BR} - 8V$
		-	20	-		$V_{OP} = V_{BR} - 3V$
Spectral Responsivity	S	0.85	0.9	0.95	A/W	1550nm, $M = 1$
Multiplied Dark Current	I_{DM}	-	1	15	nA	$M = 10$
Terminal Capacitance	C_J	-	0.35	0.4	pF	$M = 10$
Bandwidth	BW	2	2.5	3	GHz	$M = 10$
Rise time	τ_R	0.12	0.14	0.18	ns	$M = 10$
Temperature coeff of V_{BR}	$\Delta V/\Delta T$	-	0.06	-	V/°C	$T = 25^\circ C$
Excess Noise Factor	F	-	3.2	3.7		$M = 10$
		-	5.5	6.0		$M = 20$
Noise Equivalent Current	NEP	-	9	36	fA/Hz ^{0.5}	$M = 10$



Dimensional outlines (unit = mm)

TO

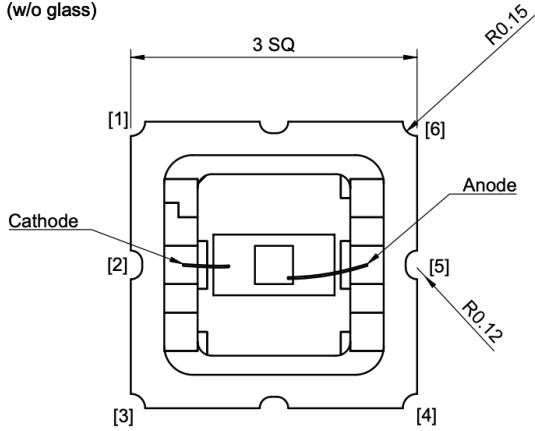


Package can be customized

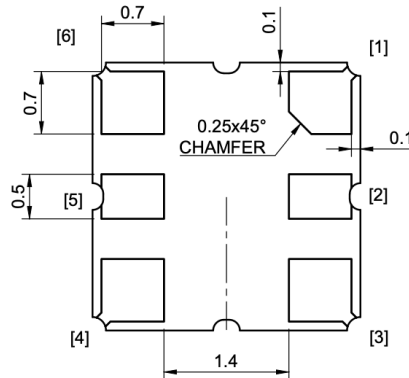


SMD

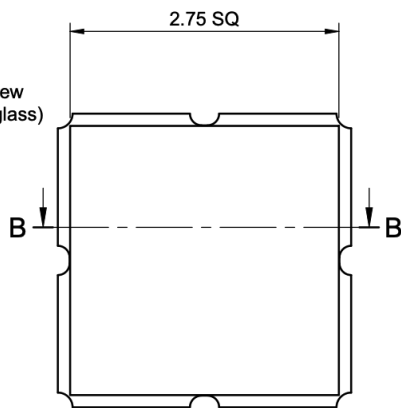
Top view
(w/o glass)



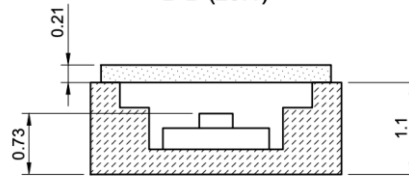
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



200 μ m InGaAs APD (Type 4)

(P/N.: Ain-200-04-01)

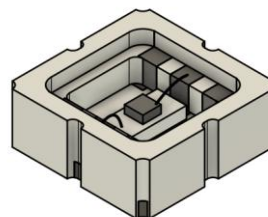
Features

- Low noise (1nA typ.) and gain $M = 10$ InGaAs APDs.
- Small Terminal Capacitance = 2.5 pF at $M = 10$.
- Active Area = 200 μ m.

Applications

- laser range finding

3D view (w/o glass)

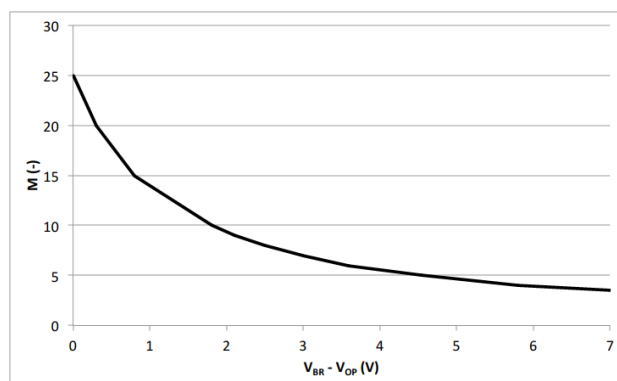
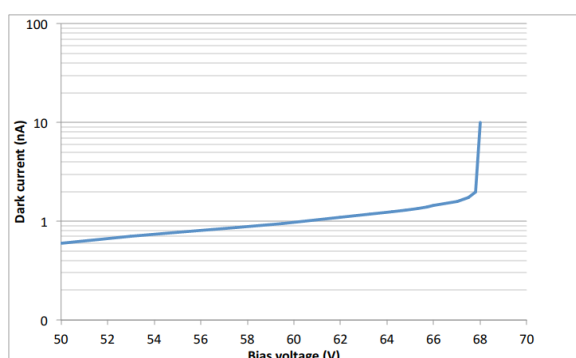
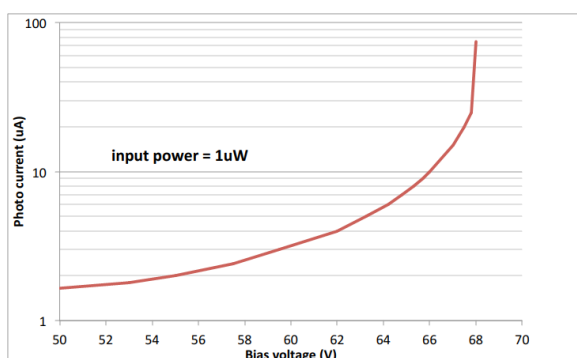


Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Forward Current	I_F	-	-	2	mA
Reverse Voltage	V_R	-	-	$0.99 \times V_{BR}$	V
Operating Case Temperature	T_C	-40	-	85	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-40	-	85	$^{\circ}\text{C}$

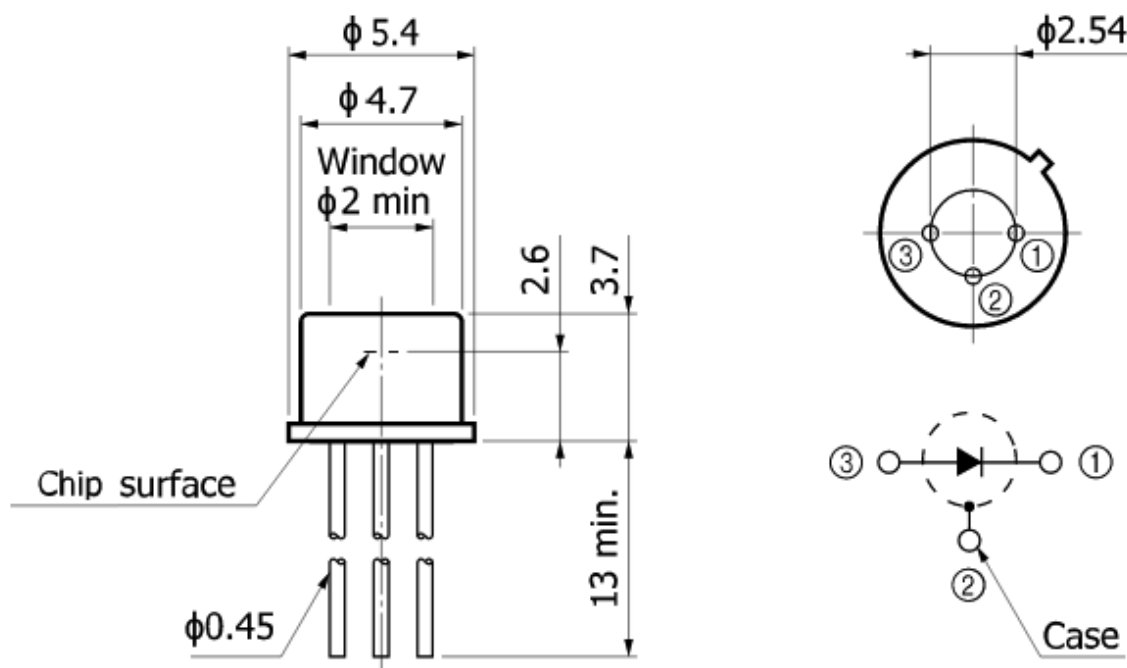
Opto-Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	950		1650	nm	
Reverse Breakdown Voltage	V_{BR}	50	60	75	V	$I_D = 10\mu\text{A}$
Multiplication Factor	M	-	10	-		$V = V_{BR} - 3\text{V}$
		-	20	-		$V = V_{BR} - 1\text{V}$
Spectral Responsivity	S	0.9	1	-	A/W	1550nm, $M = 1$
Multiplied Dark Current	I_{DM}	-	1	2	nA	$M = 10$
Terminal Capacitance	C_J	-	2.5	4	pF	$M = 10$
Temperature coeff of V_{BR}	$\Delta V/\Delta T$	-	0.1	-	V/ $^{\circ}\text{C}$	$T = 25^{\circ}\text{C}$
Noise Equivalent Power	NEP	-	10.1	-	fW/Hz ^{0.5}	$M = 10$



Dimensional outlines (unit = mm)

TO

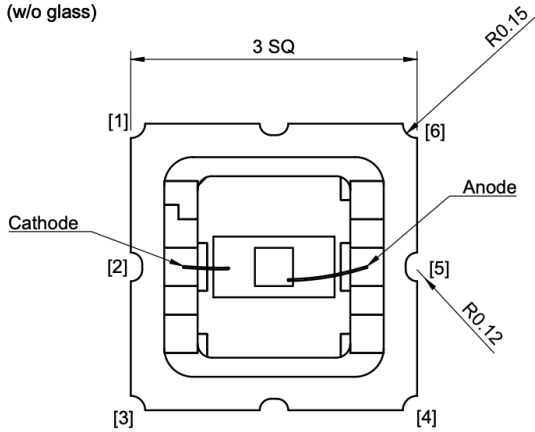


Package can be customized

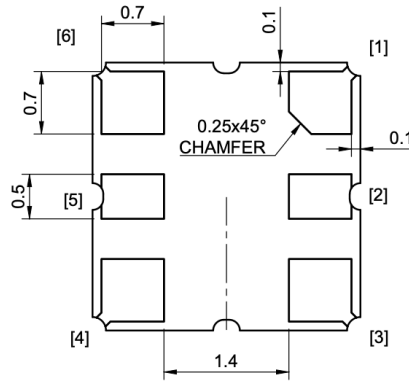


SMD

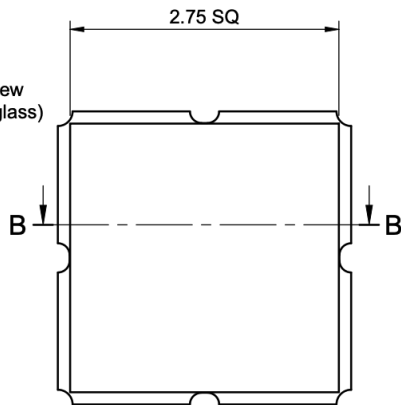
Top view
(w/o glass)



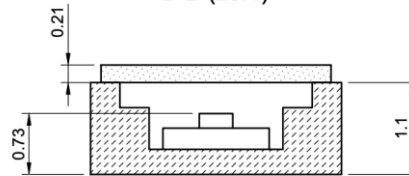
Bottom view



Top view
(with glass)



B-B (25:1)



Package can be customized



200 μ m InGaAs APD (Type 5)

(P/N.: Ain-200-05-01)

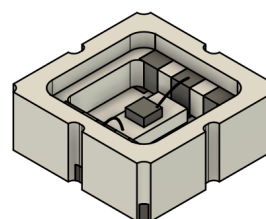
Features

- Excellent linearity, high power handling (0dBm) and high gain ($M = 10 - 20$) InGaAs APD.
- Typical operating voltage 8V ($M = 10$) below the breakdown voltage.
- Active Area = 200 μ m.

Applications

- High performance laser range finding
- Scientific instrumentation

3D view (w/o glass)

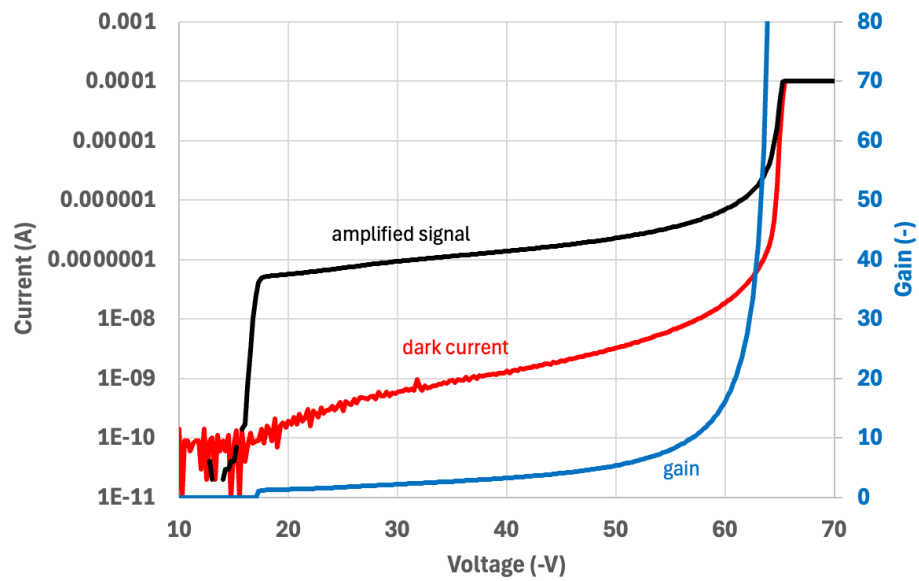


Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Forward Current	I_F	-	-	1	mA
Reverse Voltage	V_R	-	-	$0.99 \times V_{BR}$	V
CW input power	P_{MAX-CW}	-	-	1	mW
Operating Case Temperature	T_C	-40	-	85	$^{\circ}C$
Storage Temperature	T_{STG}	-55	-	85	$^{\circ}C$

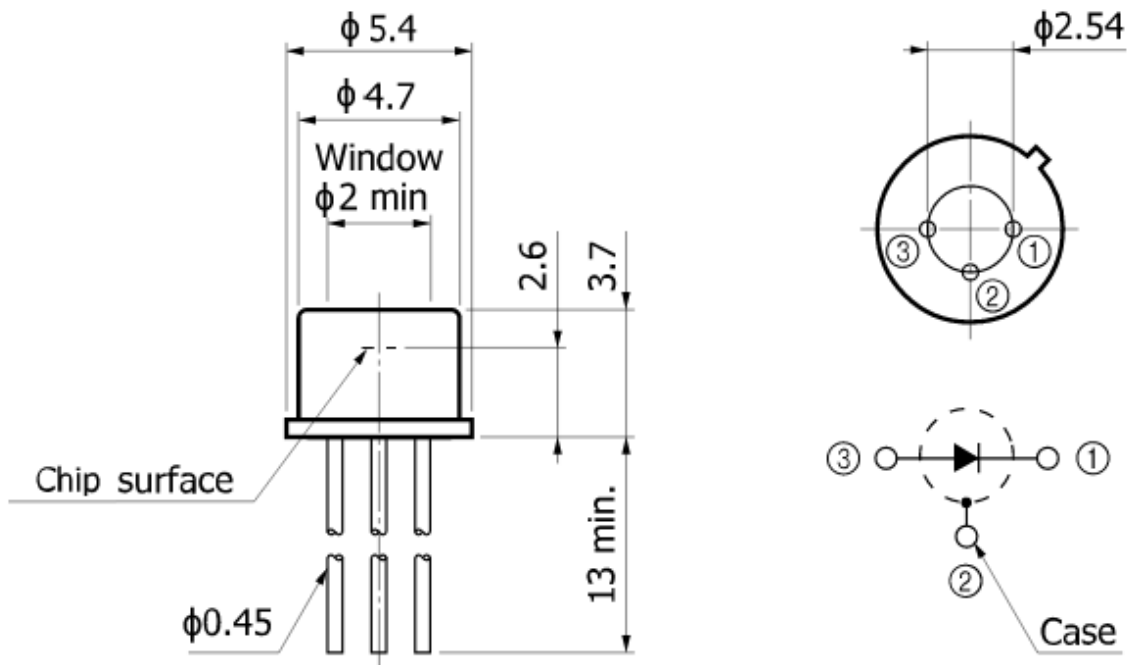
Opto-Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	1000		1630	nm	
Reverse Breakdown Voltage	V_{BR}	50	63	83	V	$I_D = 10\mu A$
Operating Voltage	V_{OP}	43	55	75	V	$M = 10$
Multiplication Factor	M	-	10	-		$V_{OP} = V_{BR} - 8V$
		-	20	-		$V_{OP} = V_{BR} - 3V$
Spectral Responsivity	S	0.85	0.9	0.95	A/W	1550nm, $M = 1$
Multiplied Dark Current	I_{DM}	-	8	25	nA	$M = 10$
Terminal Capacitance	C_J	-	1.5	2	pF	$M = 10$
Bandwidth	BW	1	1.5	2	GHz	$M = 10$
Temperature coeff of V_{BR}	$\Delta V/\Delta T$	-	0.075	-	V/ $^{\circ}C$	$T = 25^{\circ}C$
Excess Noise Factor	F	-	3.2	3.7		$M = 10$
		-	5.5	6.0		$M = 20$
Noise Equivalent Current	NEP	-	0.03	0.1	fA/Hz ^{0.5}	$M = 10$



Dimensional outlines (unit = mm)

TO



Package can be customized



500 μ m Si APD

(P/N.: ASi-500-01-01)

Features

- 500 μ m active area
- Low breakdown voltage <180V

Absolute Maximum Ratings

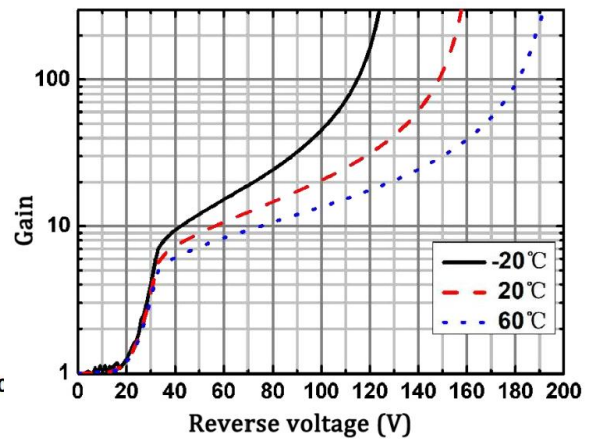
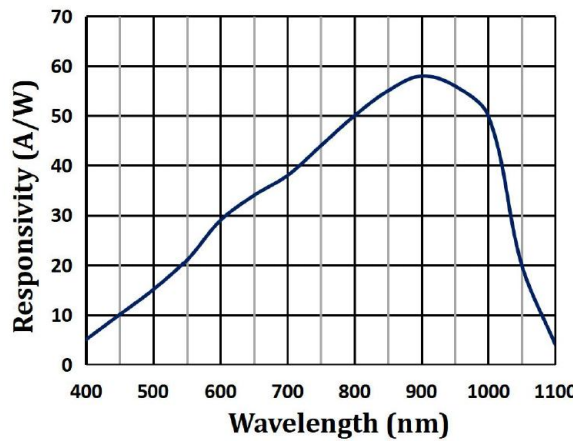
Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-40	-	85	°C
Storage Temperature	T _{STG}	-55	-	85	°C

Opto-Electrical Characteristics

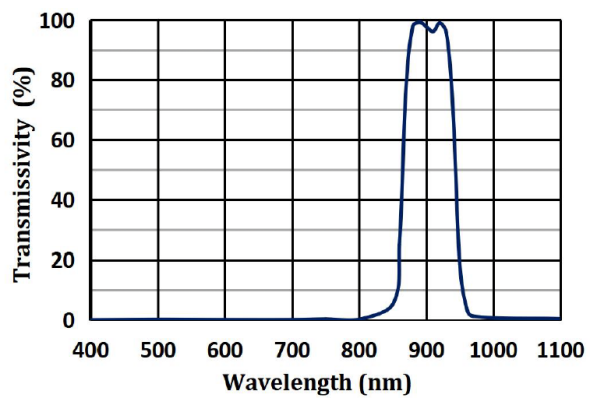
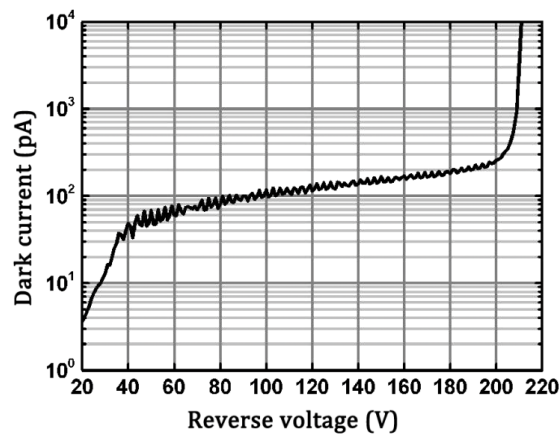
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	400		1100	nm	
Reverse Breakdown Voltage	V _{BR}	130	180	220	V	I _D = 100 μ A
Risetime (@ 905nm)	τ_{rise}	-	0.6	-	V	50Ohm, M = 100
Spectral Responsivity	S	-	0.55	-	A/W	905nm, M = 1
Multiplied Dark Current	I _{DM}	-	0.4	1	nA	M = 100
Terminal Capacitance	C _J	-	1.1	1.2	pF	M = 100
Temperature coeff of V _{BR}	$\Delta V/\Delta T$	-	1.1	-	V/°C	T = 25°C



Responsivity and gain performances



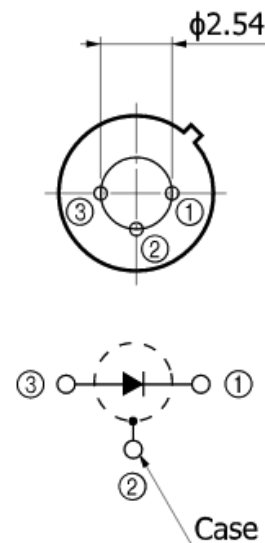
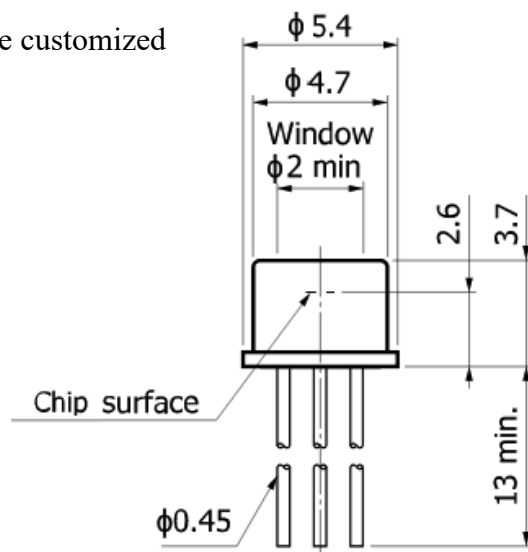
Dark current and responsivity with a filter option



Dimensional outlines (unit = mm)

TO

Package can be customized





800μm Si APD – IR enhanced (P/N.: ASi-800-02-01)

Features

- 800μm active area
- Responsivity enhanced for 1064nm

Absolute Maximum Ratings

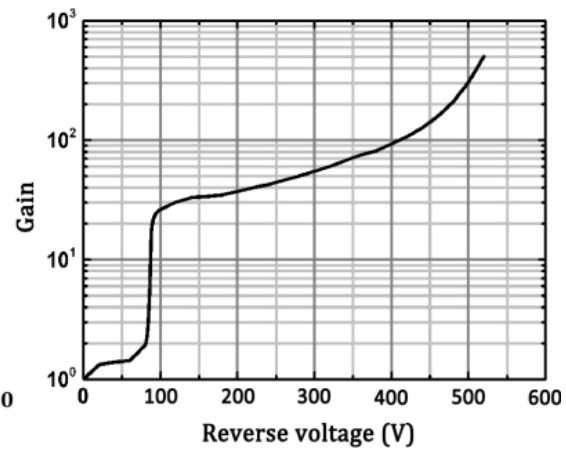
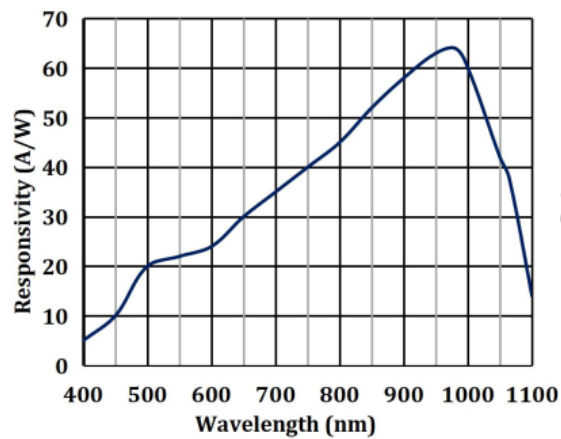
Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	T _C	-50	-	85	°C
Storage Temperature	T _{STG}	-55	-	100	°C

Opto-Electrical Characteristics

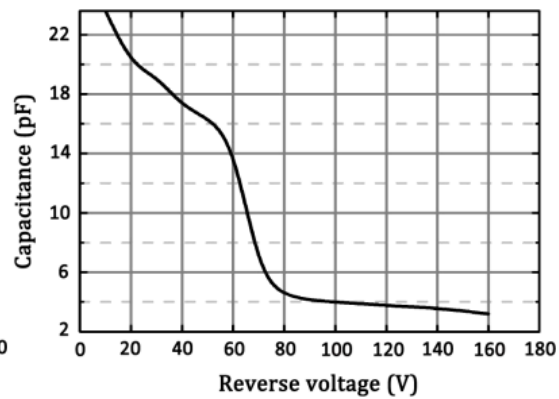
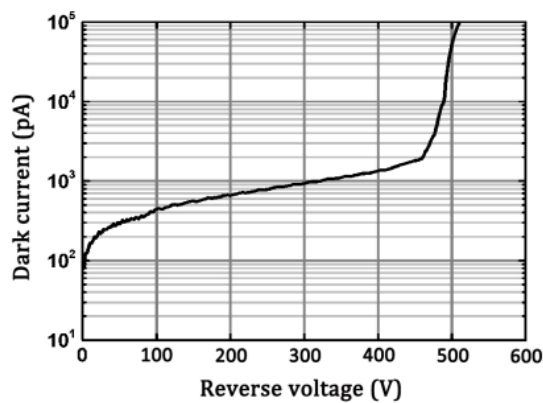
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Wavelength Range	λ	400		1100	nm	
Reverse Breakdown Voltage	V _{BR}	220		580	V	I _D = 10μA
Risetime (@ 1064nm)	τ _{rise}	-	3	-	ns	50Ohm, M = 100
Spectral Responsivity	S	-	0.38	-	A/W	1064nm, M = 1
Multiplied Dark Current	I _{DM}	-	4	20	nA	M = 100
Capacitance	C _J	-	1.5	1.7	pF	M = 100
Temperature coeff of V _{BR}	ΔV/ΔT	-	2.3	-	V/°C	T = 25°C



Responsivity and gain performances



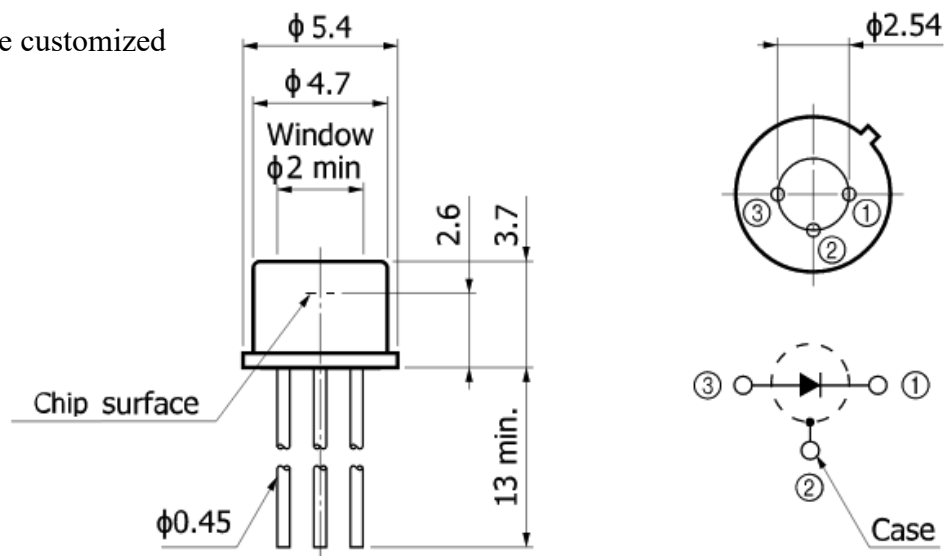
Dark current and Capacitance



Dimensional outlines (unit = mm)

TO

Package can be customized



blank page



PremierPhotonics

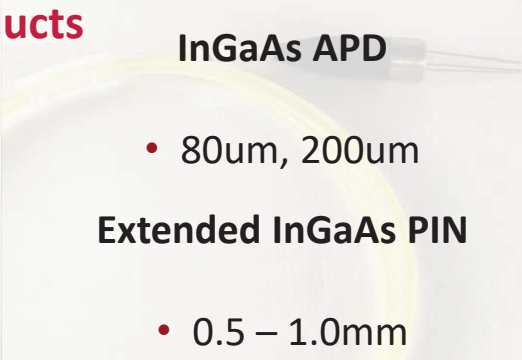
UK fabless manufacturer of photonic components.



BostonElectronics

InGaAs PIN Detectors: Secure Your InGaAs Supply Chain Today

While industry **lead times continue to stretch** and **prices are rising**, **PremierPhotonics** offers a **fast, dependable alternative** – your trusted second source or direct replacement for high-performance InGaAs

Products	
 InGaAs PIN • 75μm – 10mm • 1xN arrays • VIS enhanced • Quadrants	 InGaAs APD • 80um, 200um Extended InGaAs PIN • 0.5 – 1.0mm



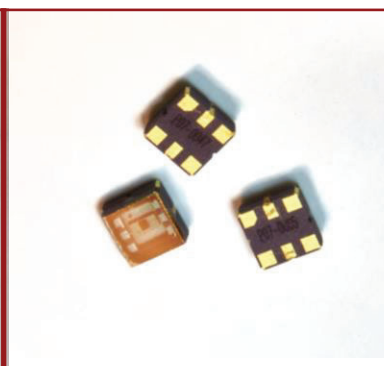
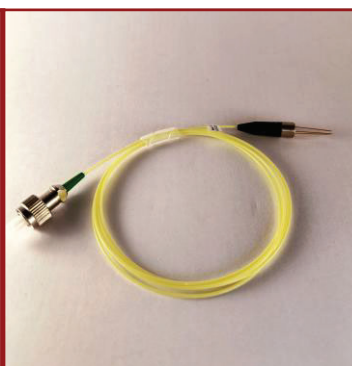
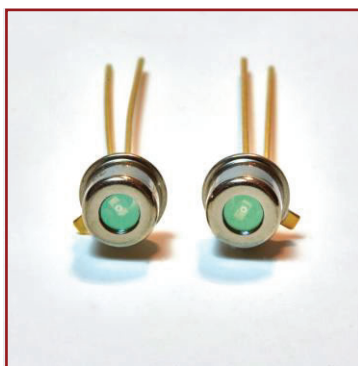
In Stock



Short Lead Times



Stable Pricing



Customization

- Drop-in replacement
 - Optical design
 - Detector design

EOL products

We specialize in manufacturing and re-designing obsolete products.

Boston Electronics | www.boselec.com || shop.boselec.com
boselec@boselec.com | +1.516.566.3821