

## Extended InGaAs Photodiodes IG24-Series

### Description

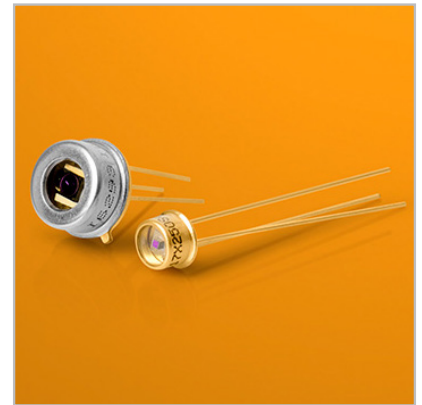
The IG24-series is a panchromatic PIN photodiode with a nominal wavelength cut-off at 2.4  $\mu\text{m}$ . This series has been designed for demanding spectroscopic and radiometric applications. It offers excellent shunt resistance in combination with superior responsivity over a wide range.

### Features

- 50 % cut-off wavelength  $\geq 2.35 \mu\text{m}$
- Typical peak responsivity: 1.40 A/W
- Excellent temperature stability
- Reduced edge effect

### Applications

- Spectrophotometer
- Diode laser monitoring
- Non-contact temperature measurement



Optical Characteristics, Specifications @ 25 °C <sup>c</sup>

Part Number	Diameter [μm]	50% Cut off Wavelength <sup>a</sup> [μm]	Peak Wavelength <sup>a</sup> [μm]		
			Typ.	Min.	Typ.
IG24X250S4i	250	≥2.35	2.20	1.25	1.40
IG24X500S4i	500				
IG24X1000S4i	1000				

<sup>a</sup> Parameter tested on batch level<sup>b</sup> Responsivity measured at 0 V Bias.<sup>c</sup> Data are prior to window integration

## Electro-Optical Characteristics, Specifications @ 25 °C

Part Number	Diameter [μm]	Shunt Impedance @ V <sub>r</sub> = 10 mV <sup>b</sup> [kOhm]		Dark Current @ V <sub>r</sub> = 0.25 V <sup>b</sup> [μA]		Peak D* <sup>a</sup> @ f = 1 kHz [cm Hz <sup>1/2</sup> /W]		Peak NEP <sup>a</sup> @ f = 1 kHz [W/Hz <sup>1/2</sup> ]		Capacitance @ V <sub>r</sub> = 0 V <sup>a</sup> [pF]
		Min.	Typ.	Typ.	Max.	Min.	Typ.	Typ.	Max.	Typ.
IG24X250S4i	250	120	240	0.2	2.5	1.6 E+11	2.4 E+11	2.1 E-13	3.0 E-13	60
IG24X500S4i	500	40	80	0.6	7.5	1.3 E+11	1.9 E+11	3.6 E-13	5.2 E-13	140
IG24X1000S4i	1000	10	20	2.5	25	0.9 E+11	1.4 E+11	7.2 E-13	1.1 E-12	1040

<sup>a</sup> Parameter tested on batch level<sup>b</sup> Parameter 100% tested

### Absolute Maximum Ratings

		Min.	Max.
Storage temperature [°C]		-55	+125
Operating temperature [°C]		-40	+85
Reverse bias, cw [V]		-	1
Forward current, cw [mA]		-	1
Soldering temperature, 5 sec. [°C]		-	260
ESD damage threshold, human body model class 0*, [V]		0	<250
TE cooler voltage [V]	T7	-	0.8
	T9	-	3.7
TE cooler current [A]	T7	-	1.9
	T9	-	1.2

\*ANSI/ ESD STN5. 1-2007

Fig. 1: Spectral Response

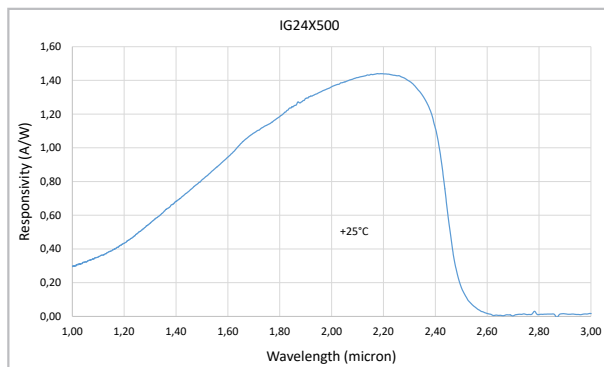
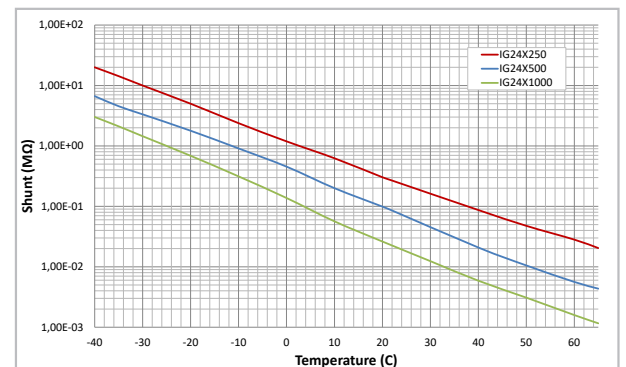


Fig. 2: Shunt Resistance vs. Temperature



## Nomenclature

<b>C-</b>	<b>I</b>	<b>G</b>	<b>2</b>	<b>4</b>	<b>X</b>		<b>2</b>	<b>5</b>	<b>0</b>	<b>S</b>	<b>4</b>	<b>i</b>	
Chip only	Type					Diameter				Package Style			
	Extended InGaAs PIN Photodiode					250 = 250 µm				S4i - TO-46, isolated			
						500 = 500 µm				S4ix - TO-46, no window			
						1000 = 1 mm				G1i - TO-39, isolated			
										G1ix - TO-39, no window			
										T7 - TO-37, single stage TEC			
										T9 - TO-66, dual stage TEC			
										M2 - 2 pad PCB SMD			
										L5 - TO-46 lens cap			

Standard window: Borosilicate glass

Package drawings, TEC and thermistor curves can be found on a separate datasheet.

## Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

## Ordering Information

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