

Extended InGaAs Linear Array Sensors IG22-Series

Description

The IG22 extended InGaAs line sensors are designed for use in process control, IR-spectroscopy and biomedical analysis.

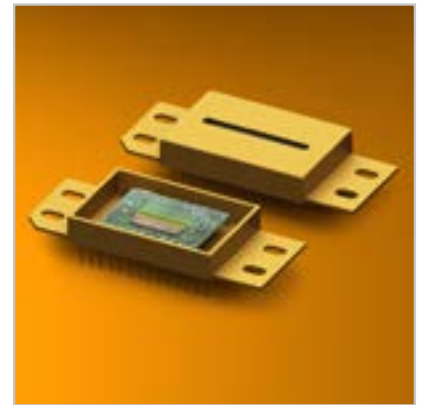
They do show innovative features that improve the state of the art for users.

Features

- 20 % Cut-off wavelength $\geq 2.10 \mu\text{m}$ (@ -40°C)
- Optimized thermal design results in 65 K temperature difference against room temperature with 2 stage TEC cooling
- Auto zeroing of input offset ($< 100 \mu\text{V}$) results in reduced dark pattern
- Eight selectable gains
- High linearity
- Built in antialias filtering
- Correlated double sampling
- 50 μm pitch
- CMOS - ROIC

Applications

- IR spectroscopy
- Photometry
- Industrial process control
- Biomedical analysis



Optical Characteristics Specifications @ 25°C Ambient and -40 °C Detector Temperature

Part Number	Pixel Size [μm]	20% Cut off Wavelength ^a [μm]	Peak Wavelength ^a [μm]	Peak Responsivity ^b [A/W]	Responsivity [A/W]		
					@ 900 nm ^a	@ 1300 nm ^a	@ 1500 nm ^a
			Typ.	Typ.	Typ.	Typ.	Typ.
IG22X50250L28-256TEC	30 x 250	≥ 2.10	1.95	1.20	0.35	0.75	0.90

^a Parameter tested on batch level

^b Parameter 100% tested

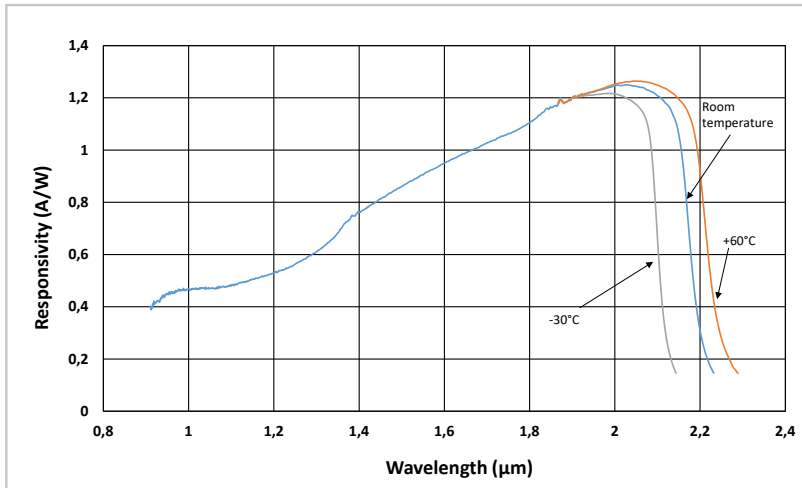
Characteristics, Specifications @ 25°C

Part Number	Category	Parameter	Unit	Symbol	Min.	Typ.	Max.	
IG22X50250L28-256TEC	Electro-Optical	Number of elements				256		
		Element width	μm			30		
		Element height	μm			250		
		Element pitch	μm			50		
		Number of bad pixels				0		
		Input offset	mV					0.1
		Nonlinearity ^a @ 1310 nm, 0.1 mW/mm ²	%				0.1	
		Output Settling	ns			<200	<400	
		Charge well capacity	Me-			2		250
		Electrical	ROIC power dissipation	mW				
Clock frequency	MHz		f			1	4	
Theoretical cooling capacity of TEC against vacuum	W		Q _{max}				5.6	

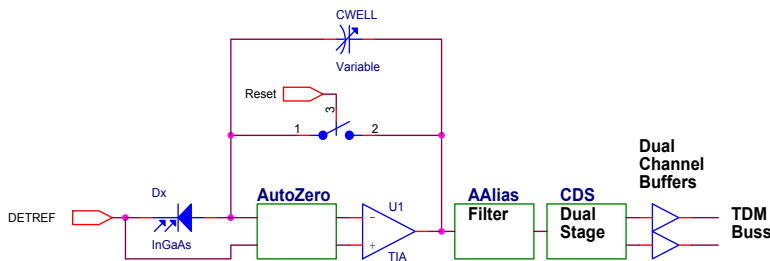
^a Parameter tested on batch level

^b Parameter 100% tested

Spectral Response



Equivalent Circuit



Absolute Maximum Ratings

	Min.	Max.	Units
Storage Temperature	-55	+125	°C
Operating Temperature	-40	+50	°C
Vdd	-	6	V
Any pin	-	Vdd +0.5, Vss -0.5	V
Soldering temperature, 5 sec.	-	260	°C
ESD Damage Threshold, Human Body Model Class 1A*	0	<250	V
TE Cooler voltage	-	2.4	V
TE Cooler current	-	6.0	A

* ANSI/ESD STN5. 1-2007

Order Code

IG22X50250L28-256TEC

Accessory

Under redesign.

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

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com