



## FPA1280x1024\_P15-1.7-T2

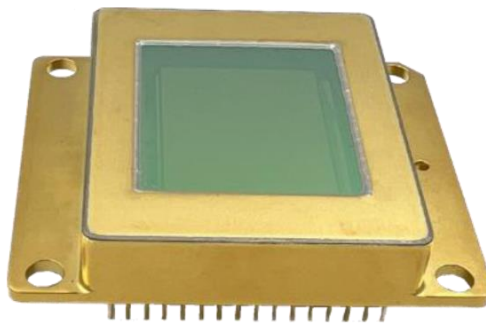
### Near-Infrared (0.9 $\mu\text{m}$ - 1.7 $\mu\text{m}$ ) InGaAs Focal Plane Array with 2-Stage Thermoelectric Cooler

#### FEATURES

- 1280 x 1024 Array Format
- 0.9  $\mu\text{m}$  - 1.7  $\mu\text{m}$  Spectral Range
- 32-pin Metal SDIP Package
- Embedded Thermoelectric Cooler
- Typical Pixel Operability > 99.5 %
- Quantum Efficiency > 70 %
- Built-in Temperature Sensor
- Snapshot ITR / IWR and IMRO Readout Modes
- 2, 4 or 8 Outputs with up to 22 MHz Pixel Rate
- Windowing Capability

#### APPLICATIONS

- Near-Infrared Imaging
- Covert Surveillance
- Semiconductor / Solar Panel Inspection
- Medical Science and Biology
- Fiberoptic Telecommunication
- See through Fog / Smoke
- Ice / Slush / Moisture Mapping
- Industrial Thermal Imaging
- Astronomy and Scientific



#### GENERAL DESCRIPTIONS

PARAMETER	UNIT	VALUE
Sensor Technology	--	Planar InGaAs PIN
Spectral Range	$\mu\text{m}$	0.9 - 1.7
Actual Pixel Array	--	1280 x 1024
Pixel Pitch	$\mu\text{m}$	15
Image Size	mm	19.20 x 15.36
Package Type	--	32-pin Metal SDIP Package
Package Size L x W x T	mm	45.7 x 38.1 x 8.0 (without pins)
Weight	g	38.0 ( $\pm$ 0.5)



## SPECIFICATIONS (ITS<sup>1</sup> = 20°C)

PARAMETER	UNIT	TYPICAL VALUE	COMMENTS
Dark Current <sup>2,3</sup>	fA	≤ 50	Photopixel Biased @ -0.5 V Mean Value
Quantum Efficiency * Fill Factor (QE <sub>EFF</sub> ) <sup>2</sup>	%	≥ 70	λ = 1.0 μm - 1.6 μm
Response Nonuniformity <sup>2,3</sup>	%	≤ 10	At 50 % Well Occupation
Response Nonlinearity <sup>2,3</sup> (Max. Peak-to-Peak Deviation)	%	≤ 4	15 % - 85 % Well Occupation Range
Charge Capacity	@ High Gain	53.3	ROIC Specifications
	@ Mid Gain	16	
	@ Low Gain	1	
Readout Noise Floor <sup>4</sup>	e <sup>-</sup>	< 40	In High Gain Mode
Output Swing	V	1.8	
Minimum Integration Period <sup>3</sup>	μs	< 1	
Pixel Operability <sup>2,4</sup>	%	≥ 99.5	Percentage of Pixels with QE <sub>EFF</sub> Deviation within ± 30 % (QE <sub>EFF</sub> Mean)
Maximum Cooling Capability (ΔT <sub>MAX</sub> ) <sup>5</sup>	°C	≥ 55	T <sub>Heatsink</sub> = 20 °C

1. Readings from Integrated Temperature Sensor (ITS).
2. These items are defined for central effective pixel array (1280x1024). Their values correspond to default operation conditions.
3. Contact us for further information.
4. FPA with pixel operability lower than 99.5% (< 99.5%) is categorized as a test grade device, which, if available in stock, can be provided on request.
5. Adequate heatsink and thermal interface material are the prerequisite for stable operation.

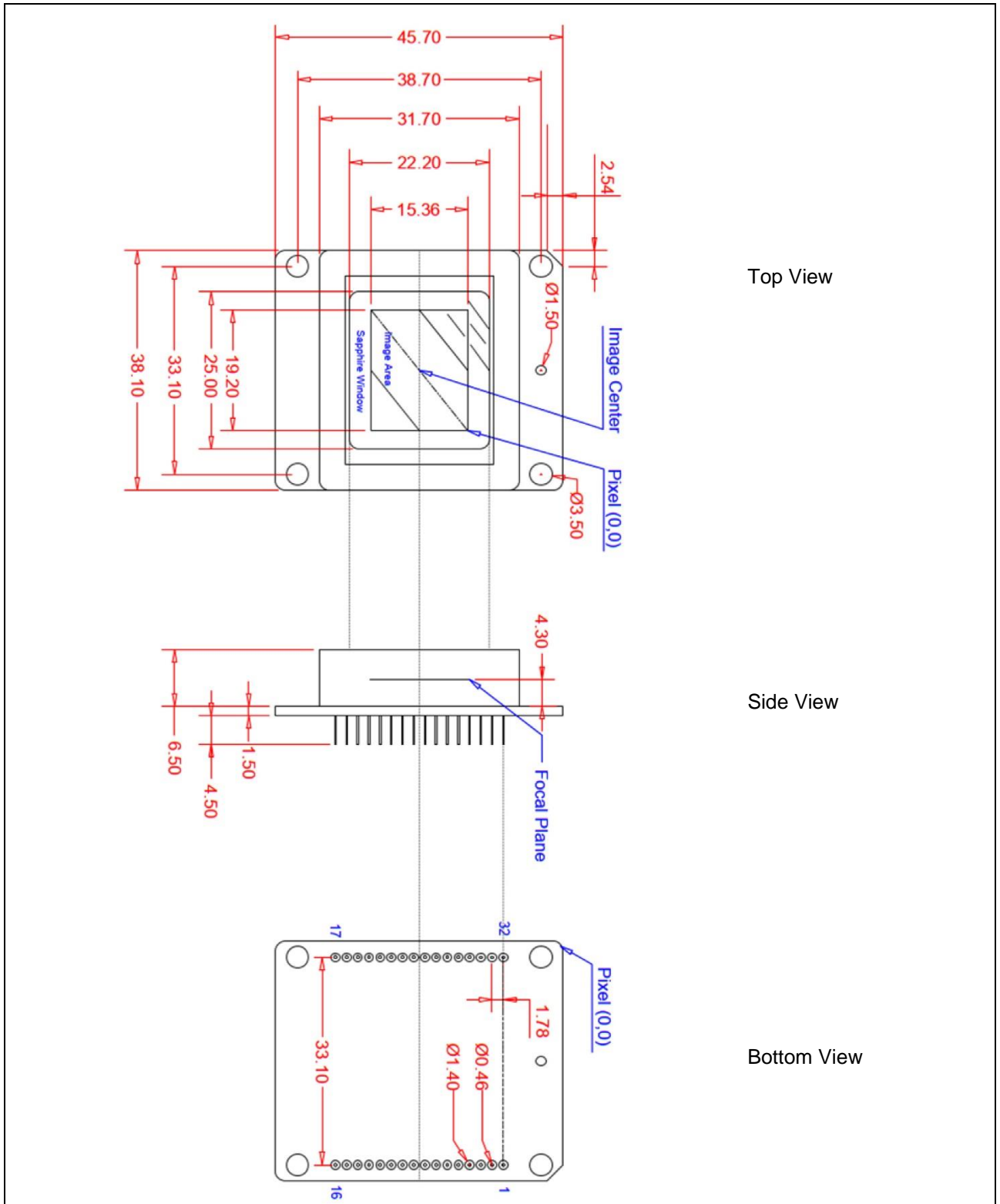
## ABSOLUTE MAXIMUM RATINGS

PARAMETER	UNIT	MIN.	MAX.
Operating Temperature <sup>6</sup>	°C	-40	+70
Storage Temperature <sup>6</sup>	°C	-40	+70
Power Consumption <sup>7</sup>	mW	--	500
TEC Bias <sup>8</sup>	V	--	6.0
TEC Current <sup>8</sup>	A	--	2.7

6. Non-condensing environment.
7. Without powering on the thermoelectric cooler.
8. Applied to Pin-1 for cooling operation. Operation above these maximum ratings causes excessive (local) heat accumulation and may result in permanent damage to the cooler.



## PACKAGE OUTLINE (Unit: mm)



Copyright ©2024 ANDANTA GmbH.

The information in this document is subject to change without notice. All rights reserved.