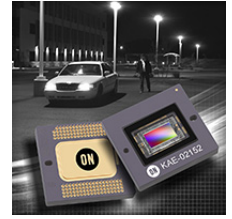


Product Overview

KAE-02152: Interline Transfer EMCCD Image Sensor, 2.1 MP

For complete documentation, see the data sheet.



The KAE-02152 Image Sensor is a 1080p CCD in a 2/3" optical format that provides increased Quantum Efficiency (particularly for NIR wavelengths) compared to KAE-02150. Each of the sensor's four outputs includes both a conventional horizontal CCD register and a high gain EMCCD register. Exceptional low light imaging performance is the result.

QE at 820 nm has approximately doubled, enabling enhanced sensitivity without any decrease in the device's Modulation Transfer Function (MTF). An intra-scene switchable gain feature samples each charge packet on a pixel-by-pixel basis. This enables the camera system to determine, based on a user selectable threshold, whether charge will be routed through the normal gain output or the EMCCD output. Scenes having bright objects in an otherwise dark setting are deftly managed. From sunlight to starlight, a single camera can capture quality images.

A vertical overflow drain structure suppresses image blooming, provides excellent MTF, and enables electronic shuttering for precise exposure control.

KAE-02152 is available in two package configurations: PGA, and PGA with integrated thermoelectric cooler (TEC).

Features

- Increased QE, with 2x improvement at 820 nm
- Intra-scene switchable gain
- Wide dynamic range
- Low noise architecture
- Exceptional low-light imaging
- Global shutter
- Excellent image uniformity and MTF
- Multiple spectral sensitivity options
- PGA package, or PGA with integrated thermoelectric cooler

- Available with Sparse CFA
- For more features, see the data sheet

Benefits

- Improved sensitivity for NIR wavelengths
- Dynamic compensation under changing conditions
- Imaging of bright regions in otherwise dark scenes
- Sub-electron noise for EMCCD gains of 20x at T = 0C
- Enables imaging in widely varying conditions, sunlight to starlight
- Excellent imaging of moving objects with minimal artifacts
- CCD technology provides excellent image quality
- Optimized for monochrome or color image capture
- Integrated cooler simplifies development of cooled camera design
- Provides color information with monochrome sensitivity

Applications

- Surveillance
- Scientific Imaging
- Medical Imaging
- Intelligent Transportation Systems

Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
KAE-02152-ABB-JP-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-135
	Halide free										
KAE-02152-ABB-JP-FA	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-135
	Halide free										
KAE-02152-ABB-SD-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-143
	Halide free										
KAE-02152-ABB-SD-FA	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-143
	Halide free										
KAE-02152-ABB-SP-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-143
	Halide free										
KAE-02152-ABB-SP-FA	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Mono	CPGA-143
	Halide free										
KAE-02152-FBB-JP-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Bayer Color	CPGA-135
	Halide free										
KAE-02152-FBB-JP-FA	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Bayer Color	CPGA-135
	Halide free										
KAE-02152-FBB-SD-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Bayer Color	CPGA-143
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	Halide free										
KAE-02152-QBB-SD-EE	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Sparse CFA	CPGA-143
	Halide free										
KAE-02152-QBB-SD-FA	Pb-free	Active	Interline Transfer-EMCCD	2.1	30	2/3 inch	Electronic	5.5 x 5.5	Analog	Sparse CFA	CPGA-143
	Halide free										

For more information please contact your local sales support at www.onsemi.com.

Created on: 6/15/2019