

Driver Vision Enhancement

Thermal imaging technology that enhances night-time road safety



Silicon infrared imaging sensor for transportation applications

Thermal Imaging Technology

Improving vision at night and in adverse weather conditions is critical for improving safety. By more easily identifying roadside hazards, thermal imaging technology provides an important solution.

Thermal imaging technology can be used to create images from the heat that is naturally radiated by objects such as pedestrians, cyclists, animals and other roadside objects. Since these objects may not otherwise be visible because of darkness, weather or ineffective illumination, a thermal imaging system offers the driver incomparable vision enhancement enabling the detection of potential dangers on the road ahead.

As a result, the use of thermal imaging can dramatically reduce potential fatal collisions day or night, in foggy or rainy conditions, without any additional illumination. Compared to other technologies such as radar, lidar or near-infrared, thermal imaging has been proved to be the preferred solution delivering reliable information to the driver with a minimum of false warnings.



Visible



Visible



FIR



FIR

The key component - the silicon microbolometer

At the heart of the thermal imaging system is a silicon microbolometer, an infrared imaging sensor that converts infrared radiation into images that are visible by a driver. Even tiny temperature differences can be easily detected, resulting in excellent night vision performance at a distance more than three times longer than high beam headlights.

First developed over twenty years ago, silicon microbolometers have significantly matured and are now found in many commercial products such as thermal imaging cameras for night vision, for firefighters to see through smoke, for search and rescue, and for home energy loss inspection.

ULIS, your partner in thermal imaging for Driver Vision Enhancement

Since its inception in 2002, ULIS has been developing silicon microbolometers for use in a wide range of applications. As a result of its ongoing product development, ULIS now offers high performance and economically priced sensors for high volume applications.

Today, ULIS brings a global solution to meet the growing demand for transportation night vision.

- High performance products delivering crisp, high resolution images at night
- Proven silicon technology based on established semiconductor manufacturing processes
- High production capacity
- Dedicated support to customers, from development to production
- Strong experience in partnership with technology business units.

The performance you need

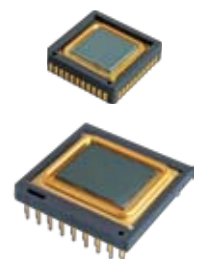
ULIS is the leader of infrared imaging sensor based on amorphous silicon microbolometer technology. Amorphous silicon microbolometers have been developed using MEMS technology and enjoy all the advantages of silicon processing including low cost and high yield. In addition, because they are highly sensitive to infrared radiation, they are ideal for use in thermal imaging cameras.

Designed in a high reliability package qualified for severe environments, amorphous silicon is ideally suited to meet the high quality and reduced cost demands necessary for automotive applications.



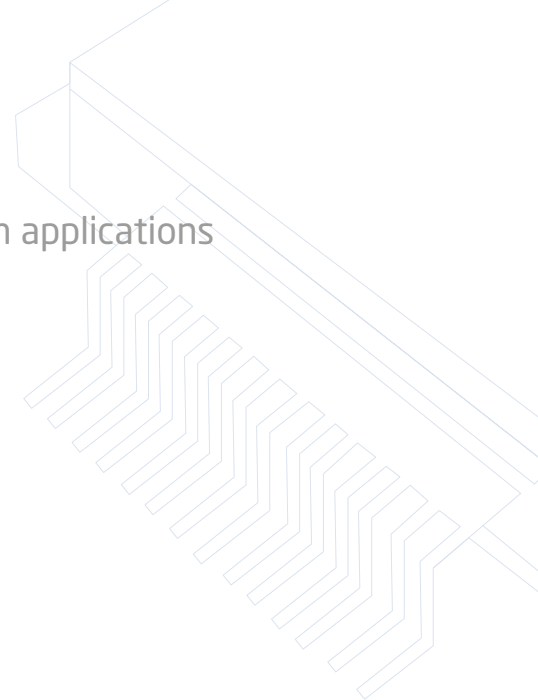
Key performance specifications of ULIS infrared imaging sensors:

- High sensitivity (< 50 mK thermal resolution)
- Fast response time (capable of producing images at >60 Hz frame rate)
- Small pixel size (17µm pitch for compactness and lowest cost)
- Multiple resolutions (from VGA/16, VGA/4, VGA, XGA)
- Designed for use in harsh environments (AEC_Q100 / MIL STD 810/883)



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About ULIS

ULIS manufactures high-volume infrared (IR) imaging sensors for cost-effective, low power, lightweight IR cameras. It offers a range of small and large form factor IR products for industrial, professional, and security applications. ULIS is the leader of far infrared imaging sensors based on an amorphous silicon technology called microbolometers, an easy and reliable semiconductor material to manufacture. Customers recognize ULIS' IR sensors for their low weight, low power consumption and availability in large volumes. ULIS offers unique advantages in enabling OEMs, worldwide, to custom-design IR systems, allowing them to achieve true differentiation with their IR camera products.

ULIS is located in Veurey-Voroize, near Grenoble, France and employs more than 120 people.

- A subsidiary of Sofradir and GE Equity
- 4,500 m² of facility (including 500 m² of clean rooms)
- High production capacity



ZI Les Iles Cordées

BP 27 - 38113 Veurey-Voroize - FRANCE

Phone: +33 4 76 53 74 70 - Fax: +33 4 76 53 74 80

www.ulis-ir.com - ulis@ulis-ir.com

