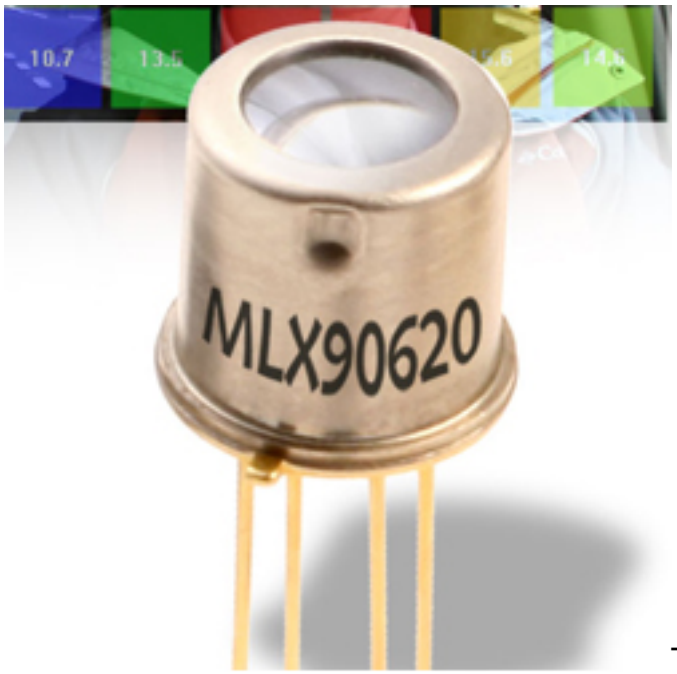
Active pixel infrared thermometer array overcomes cost hurdles associated with thermal imaging



The MLX90620 FIRray sensing device, from Melexis, utilizes the company's innovative non-contact temperature measurement technology to create a highly cost-effective thermography solution. Covering a -20°C to 300°C temperature range, this 16 x 4 element far infrared (FIR) thermopile sensor array produces a map of heat values for the target area in real time, avoiding the need to scan the area with a single point sensor or to use of an expensive microbolometer device.

The MLX90620 can greatly simplify the thermal imaging system it is integrated into by immediately capturing 64 pixel images in 2D, thus keeping the price point in the range needed for high volume, low cost applications. By integrating an amplifier and ADC in every pixel, the array offers an adjustable frame rate from 0.5 Hz to 64 Hz. Accuracy levels of ±1.5°C are maintained when operating in the 0°C to 50°C range. Two field of view (FoV) options are available 60º x 15º and 40º x 10º. A high speed I2C compatible digital interface and a triggered mode for synchronization with a control unit mean that the MLX90620 can be used individually or combined in multiple devices to form an array with a larger imaging resolution.

The performance of this sensor array is made possible through co-development by Melexis and Heimann Sensor GmbH - bringing together decades of thermopile and signal processing expertise to offer the industry a game-changing product.

FIR imaging is becoming very important within the automotive arena, allowing safety levels to be improved. The MLX90620 FIRray can be utilized in applications such as pedestrian detection, close range blind spot detection and occupancy

classification. Thermal measurement and occupancy functions in smart building control systems can also benefit from the accurate multi-point thermal images provided by this array. In the domestic environment it can enable smarter microwave and conventional ovens. Concerns about energy efficiency are driving demand for thermal imaging to detect heat losses in homes and graphically illustrate where improvements are required. The MLX90620 is highly suited to the consumer and contractor accessible low resolution thermal imaging cameras needed for such tasks. In industrial environments the device opens new opportunities for smart process controls and thermal testing. Finally, as a smart fire detection sensor it will help fire fighters and other emergency service personnel to detect hot spots, escape routes and hidden fires.

The MLX90620 is packaged in an industry standard TO-39 can. An evaluation board and PC demonstration software enable quick product development for system integration. It is priced at 53.77 USD in 100 pc. quantities.

For more information please visit: www.melexis.com/MLX90620 [1].

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[1] http://www.melexis.com/MLX90620