



The World Best IR · Automotive Sensor Provider

## About Us

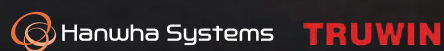
Hanwha Intelligence was established in November 2021 as a joint venture between Hanwha Systems, which has advanced technologies in aerospace, defense and ICT industry, and TRUWIN, a company specializing in automotive sensors. Based on our advanced semiconductor facility, we have developed and supplied thermal image sensors and automotive sensor chips. With our overwhelming technical skills and production infrastructures, we are able to supply our sensors at a competitive price with best quality.



**Hanwha Intelligence offers the world's most intelligent and cost-effective sensor**



### Shareholders



### Main Business Areas

IR Sensor(Micro-bolometer)  
Automotive Sensor Chip



### Company Location

Daejeon, Republic of Korea

# About Us



On-site Production



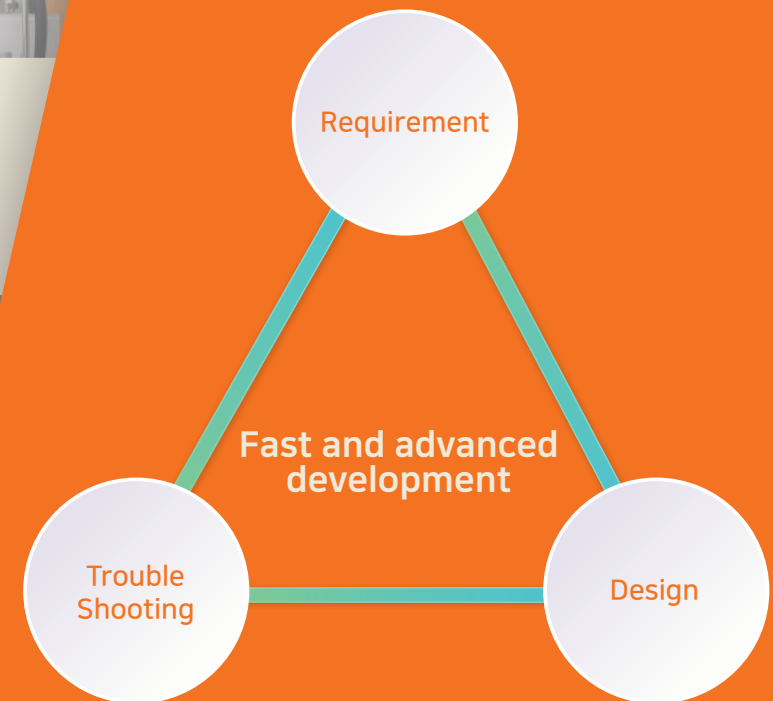
CLASS 100

8"/200mm  
Facilities

Size  
450m<sup>2</sup>

CLASS 10

In-house ASIC Design



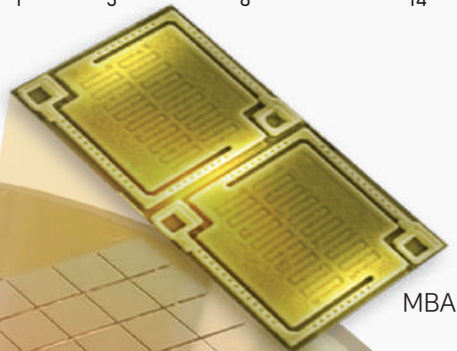
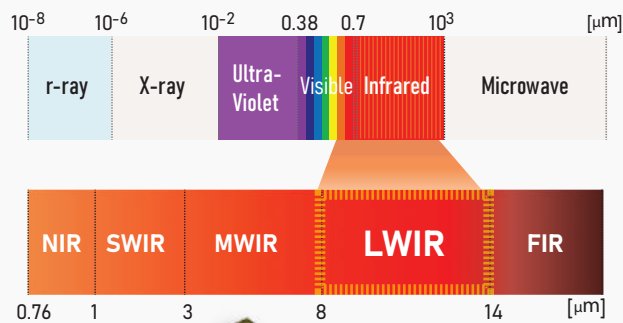
\*ASIC : Application Specific Integrated Circuit



## Business Area IR Sensor (Micro-bolometer)

Hanwha Intelligence's IR sensor, which is used in a thermal imaging camera, is uncooled, LWIR wavelength. Based on cost-competitive design and pixel technology (12 $\mu$ m and 17 $\mu$ m), it has resolution range from QQVGA to VGA. Hanwha Intelligence's IR sensor is used in automotive night vision, surveillance/security, thermography, machine vision, fire fighting, etc.

### Spectral Range of Infrared



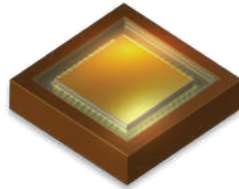
MBA

WLVP



# IR Sensor(Micro-bolometer)

**QQVGA HI1612**



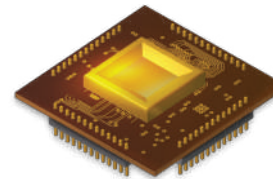
## Performance

Detector Type	Micro-Bolometer Focal Plane Array
Array Format	160 X 120
Pixel Pitch	12 $\mu$ m
NETD	$\leq 100\text{mK@F/1, 300K, 30Hz}$
Operability	$\geq 99\%$
Frame-Rate	Max 60Hz
Digital Output	Serial 14bits
Input Interface	I2C
Thermal Time Constant	$\leq 10\text{msec}$
Operating Temperature	$-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$

## Features

Wavelength Band	LWIR
Spectral Range	8 ~ 14 $\mu$ m
Package Type	44-Pin PLCC Package

**QVGA HI3217**



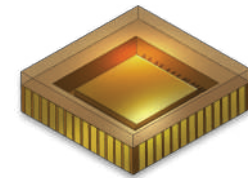
## Performance

Detector Type	Micro-Bolometer Focal Plane Array
Array Format	320 X 240
Pixel Pitch	17 $\mu$ m
NETD	$\leq 70\text{mK@F/1, 300K, 30Hz}$
Operability	$\geq 99\%$
Frame-Rate	Max 60Hz
Digital Output	Parallel 14bits
Input Interface	I2C
Thermal Time Constant	$\leq 10\text{msec}$
Operating Temperature	$-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$

## Features

Wavelength Band	LWIR
Spectral Range	8 ~ 14 $\mu$ m
Package Type	44-Pin PLCC Package

**VGA HI6412**



## Performance

Detector Type	Micro-Bolometer Focal Plane Array
Array Format	640 X 480
Pixel Pitch	12 $\mu$ m
NETD	$\leq 70\text{mK@F/1, 300K, 30Hz}$
Operability	$\geq 99\%$
Frame-Rate	Max 60Hz
Digital Output	Parallel 14bits
Input Interface	I2C
Thermal Time Constant	$\leq 10\text{msec}$
Operating Temperature	$-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$

## Features

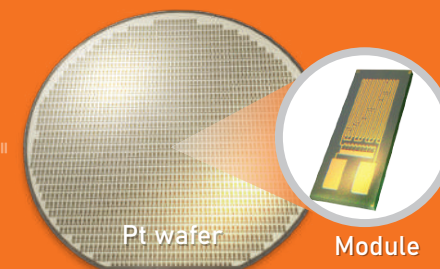
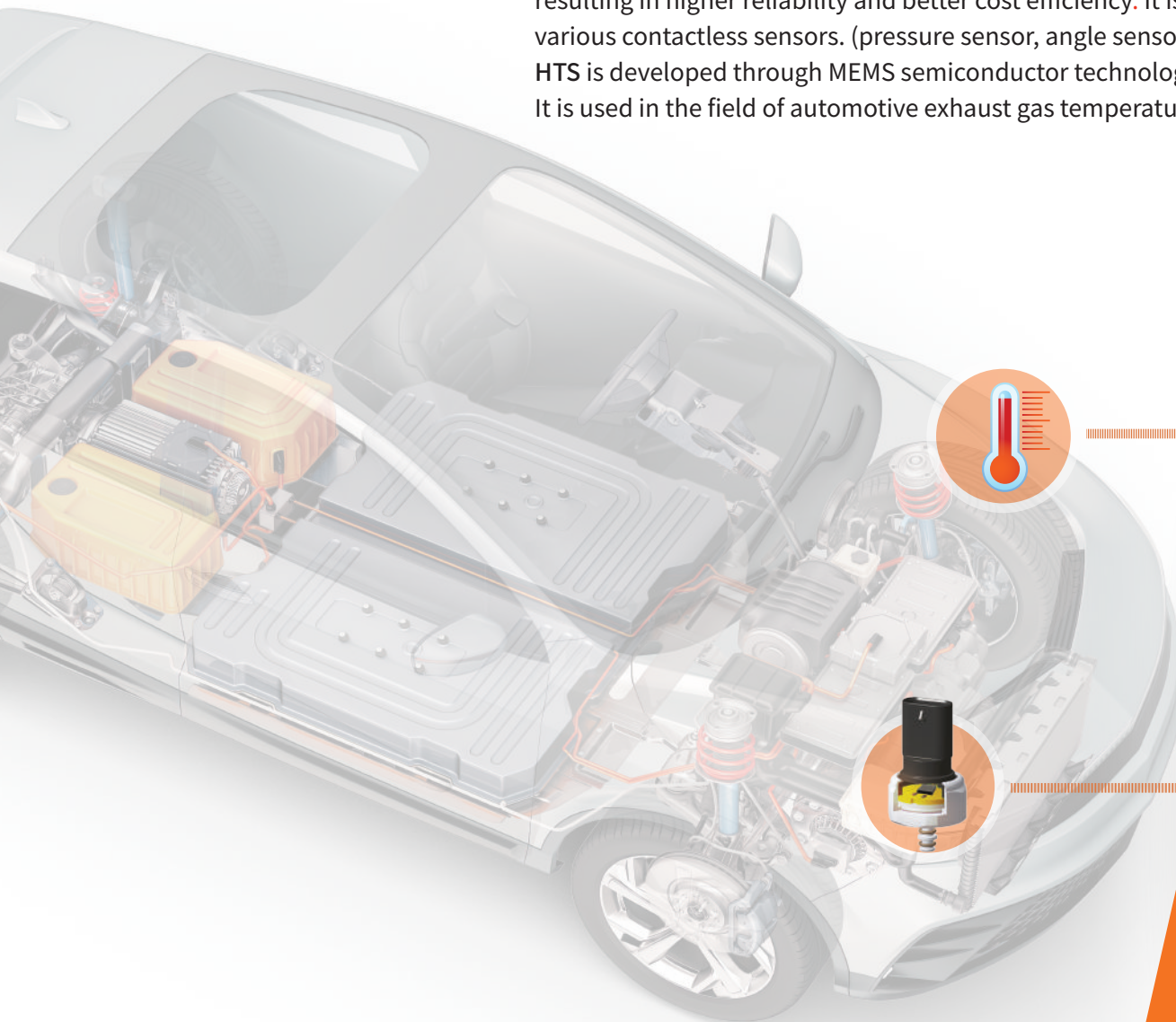
Wavelength Band	LWIR
Spectral Range	8 ~ 14 $\mu$ m
Package Type	CLCC Package

## Business Area Automotive Sensor Chip

Hanwha Intelligence's Automotive Sensor Chip was developed and produced based on its own advanced technology. ASIC chip is the only inductance-based component in Korea, and its structure is less complicated compared to other methods, resulting in higher reliability and better cost efficiency. It is used as an automotive electronic component and is applied to various contactless sensors. (pressure sensor, angle sensor, position sensor, speed sensor, etc.)

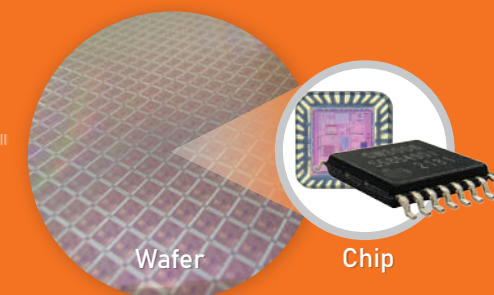
HTS is developed through MEMS semiconductor technology, which enables mass production.

It is used in the field of automotive exhaust gas temperature sensors and industrial high temperature measurement.



### HTS

High temperature sensor that electrical resistance changes with temperature

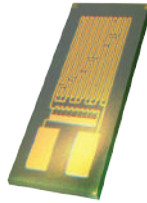


### ASIC Chip

Electronic components that detects change of coil inductance caused by transition(distance/ angle) of metal conductors

# Automotive Sensor Chip

## HTS HIT-200



### Performance

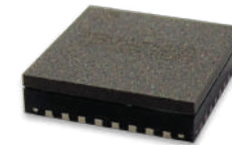
Sensor Type	RTD / Pt200
Resistance Element Material	Pt(Platinum)
Wafer's Size	8" / 200mm
Operating Temperature	-40℃ ~ 900℃
Accuracy	≤2.5℃
TCR	0.38285%/K ± 10ppm/K
Load	≤0.03A @5VDC

### Electrical spec

### Input / Output

### Reliability

## ASIC for Pressure Sensor HIA-100



### Category

### Specification

Supply Voltage	+5V±10% (4.5V~5.5V)	
Supply Current	Typ. 5mA (Max. 7mA)	
Output Current	1.5mA	
Over Voltage	+32V	
Reversal Voltage	-24V	
On Sequence Time	2ms±20us	
Output Characteristic	Analog	
Accuracy	±0.5%Vsupply	
System Response Time	Max. 3ms	
Operating Temperature	-40℃ ~ +150℃	
Storage Temperature	-55℃ ~ +155℃	
ESD	Human Body	±2KV
	Machine	±0.2KV
	Charge Discharge-Corner	±0.75KV
	Charge Discharge-Other	±0.5KV



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