

Innovative Semiconductor Solutions



HANA Micron, Inc.

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Email contact@hanamicron.com

www.hanamicron.com



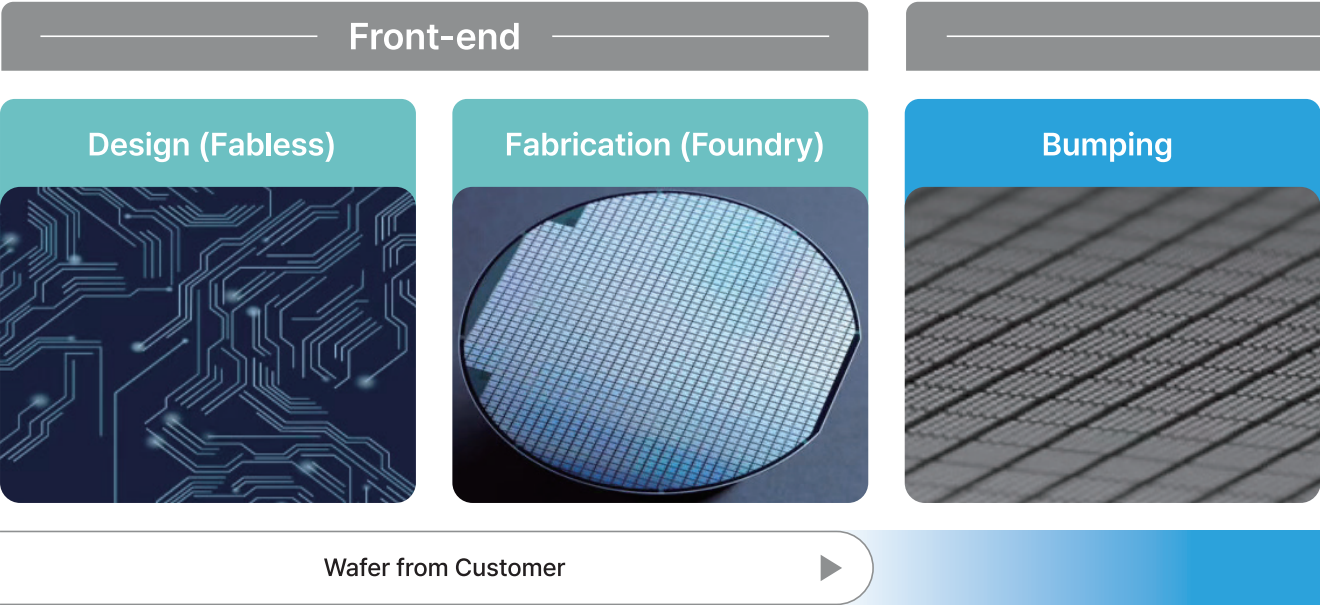
HANA MICRON

Enabling the next generation
technology to the reality

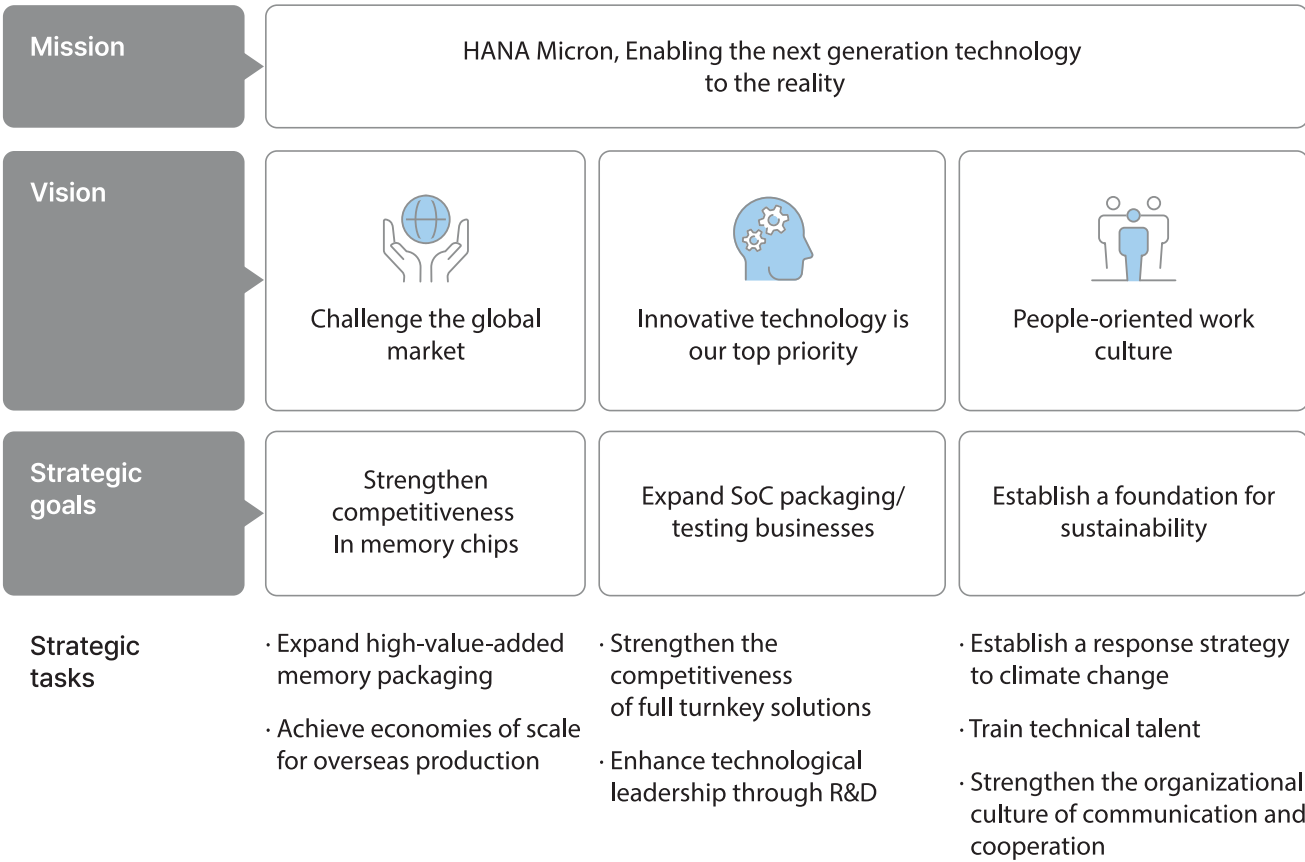
Company overview

Company	HANA Micron, Inc.
CEO	Dong-Cheol Lee
Establishment	August 23, 2001
Sales Revenue	KRW 1,250.7 billion (As of December 31, 2024)
Business area	Semiconductor packaging and testing
Global employees	4,000+
Global network	6Plants (KOR, VNM, BRZ)
Address in Korea	· Head office (Manufacturing) : 77 Yeonamyulgeum-ro, Eumbongmyeon, Asan-si, Chungcheongnam-do · Pangyo (R&D) : 8~9FL, 35, Pangyo-ro 255beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do

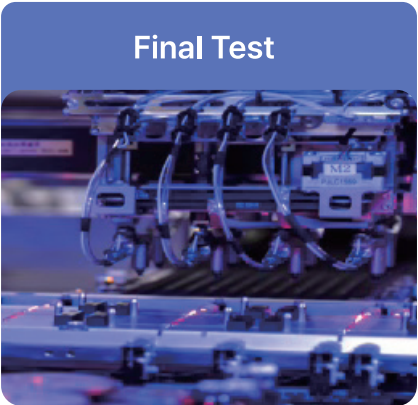
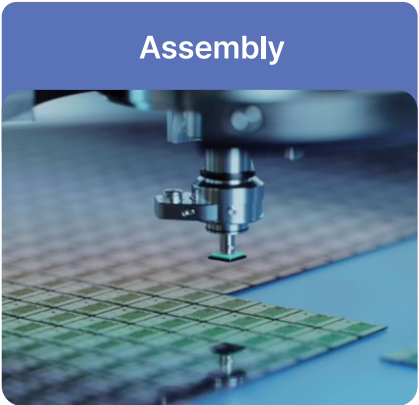
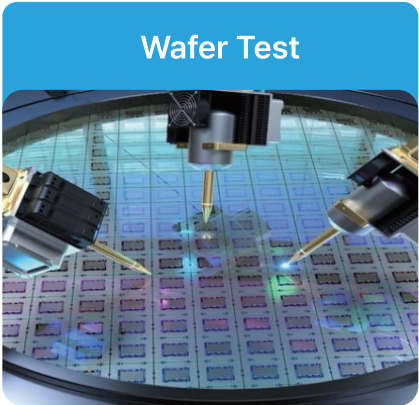
Business area



Vision and Strategy



Back-end



HANA WLS



HANA Micron

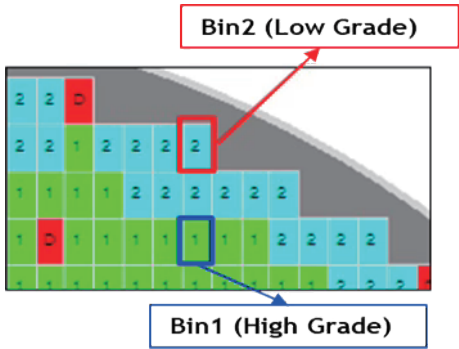


Core Technology



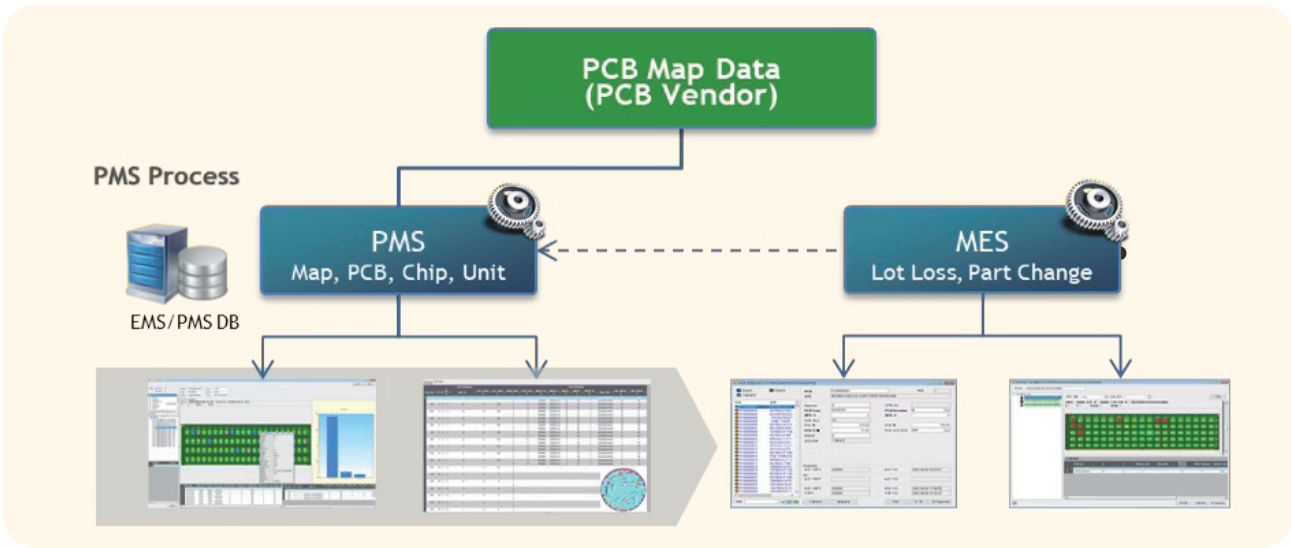
Dual Bin Die Attach Solution (DD-100, Fasford)

It's equipped with a dual pickup & bond head & dual lane, which enables categorization of wafers. It's a high productivity die bonder that supports various different types of production.



Unit Trace ability Solution (PMS System w.PCB 2D Marking)

Unit traceability can be secured using PMS systems and 2D PCB marking machines, which can be used to accurately identify Wafer, PCB, and Unit locations.

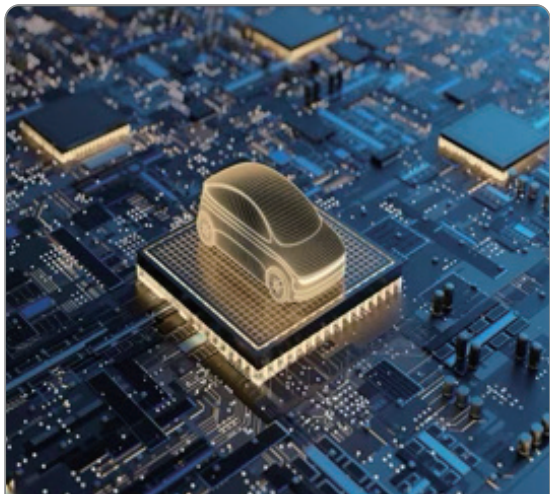


Large body flip chip solution



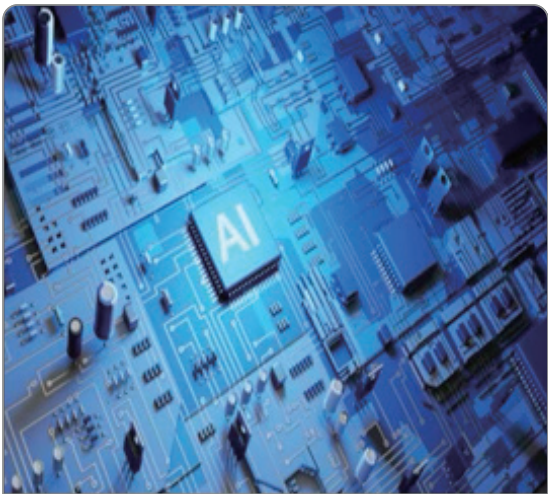
Large Body Flip Chip Target Market

AI Packaging, Automotive(ADAS, In-Vehicle Network), FCBGA(CPU for Sever, Datacenter, Module)



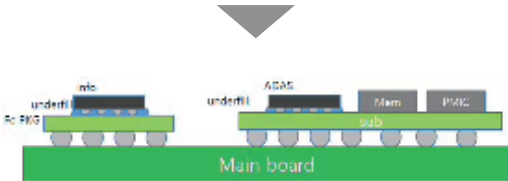
Automotive
ADAS/Chip let

Automotive Biz. expansion
➔ ADAS / In-Vehicle Network

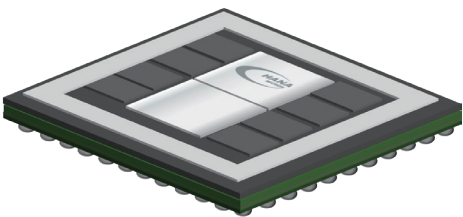


Large body
High Performance & 2.5D

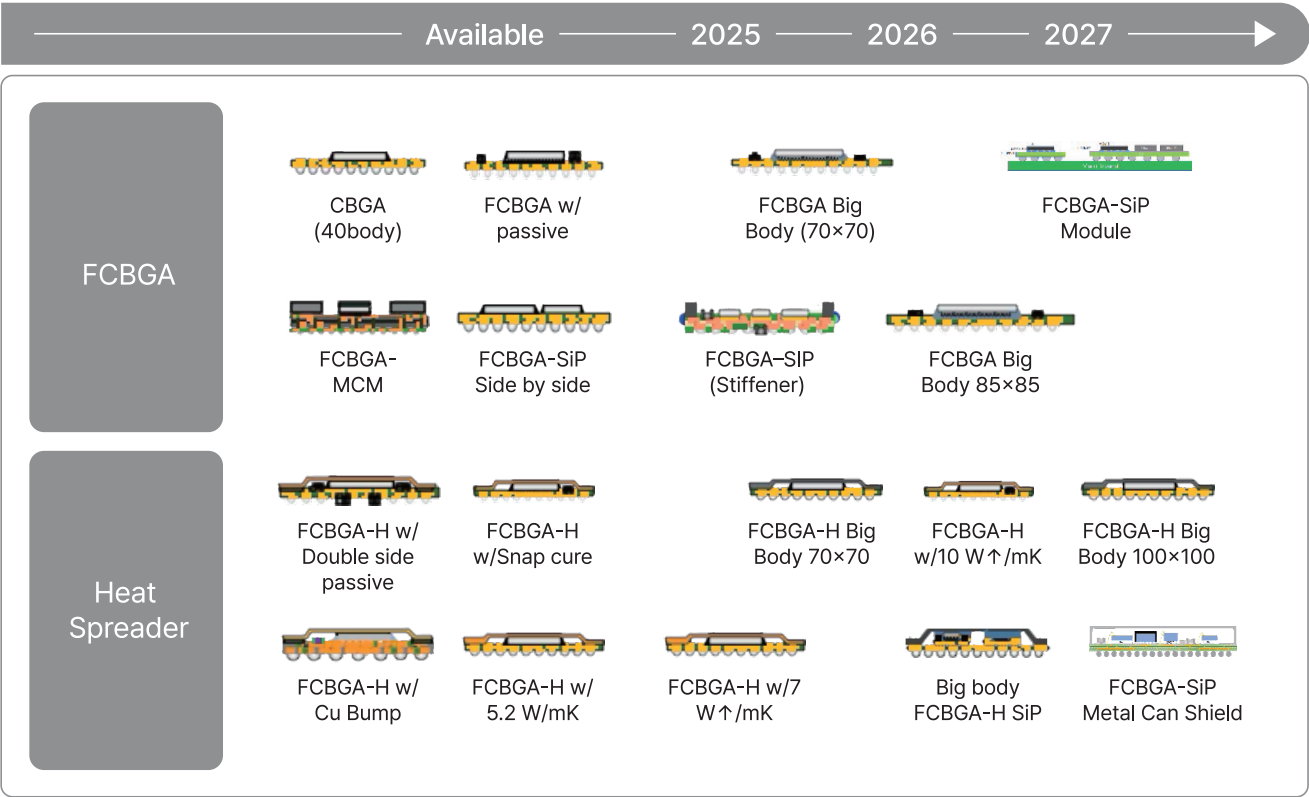
High pin count & Large body FC
➔ High performance computing



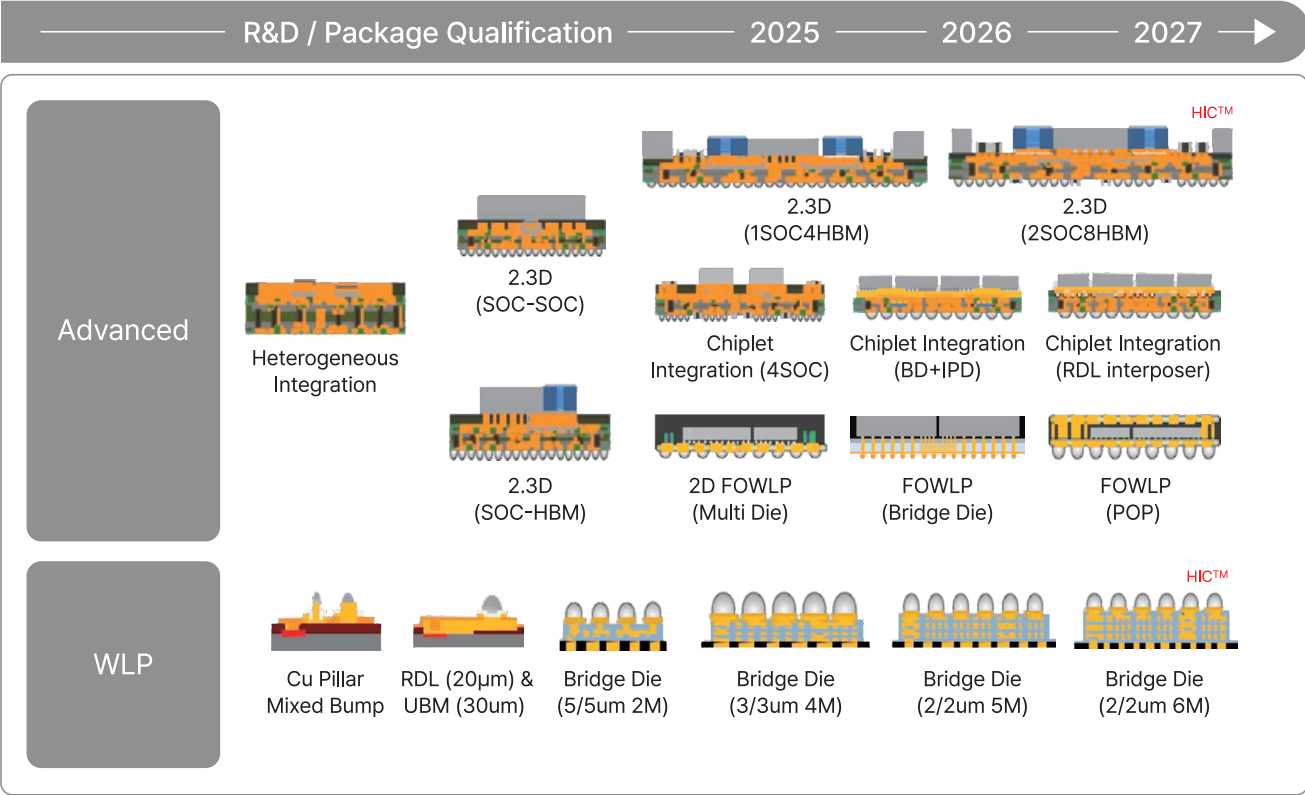
Fabless Co-development



Package tech roadmap



Item	Available	2025	2026	2027
Package Size	58 × 58mm	70 × 70mm	85 × 85mm	100 × 100mm
Die Size	15 × 15mm	25 × 25mm	35 × 35mm (Interposer Size)	"50 × 50mm (Interposer Size)
Fab Node	6nm	5nm(Dev. 3nm)	5nm(Dev. 3nm)	3nm
Bump Count	5,000ea	> 9,000ea	> 12,000ea	> 16,000ea
Ball Count	1,600ea	> 4,000ea	> 6,500ea	> 8,000ea
Bump Pitch (Cu Pillar)	90um(MR)	90um(MR)	80um(TCB)	70um(TCB)
Bump Pitch (SnAg)	125um	125um	120um	110um
Thermal Conductivity	5W/mk	7W/mk(Paste)	10W/mk ↑ (Paste) 70W/mk ↑ (Graphene)	"15W/mk ↑ (Paste) 170W/mk ↑ (Graphene)
Substrate Layer	12Layer	14Layer	16Layer	16Layer
Reliability (Automotive)	AEC Q100 Grade 2	AEC Q100 Grade 2	AEC Q100 Grade 2	AEC Q100 Grade 1



Advanced Package

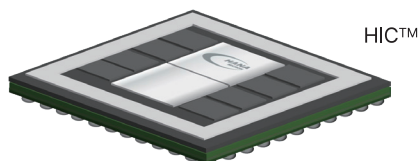
2.xD

Features

- Chipset : SOC 2 ea + HBM 8 ea + Bridge Die 9 ea
- Dimension : 70 × 70 × 5 mm
- Bump : Cu pillar, Mixed bump
- Die bump pitch : Min. 73 μ m
- Bump : Cu pillar (Cu/Ni/Cu/SnAg)

Application

- AI Data centers and cloud servers
- Smart surveillance systems
- Smart manufacturing and predictive maintenance
- AR/VR experiences with real-time AI enhancements



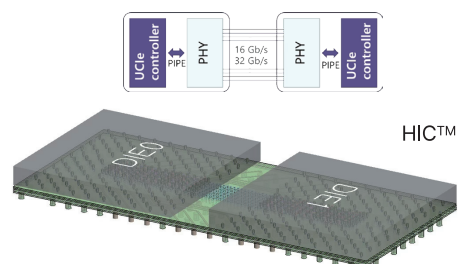
UCle

Features

- Chip size : 3.55×3.55mm (UCle IP Chips)
- Dimension : 35.4 × 21.8 × 1.2 mm
- Die bump size / Pitch : 60 / 110 μ m
- Bump : Cu pillar (Cu/Ni/Cu/SnAg)
- Interface : UCle ver2.0

Application

- AI Data centers and cloud servers
- Integrated AI accelerators
- Smart surveillance systems
- Autonomous Vehicles and ADAS Systems



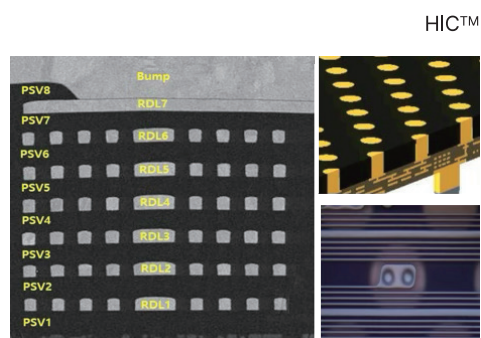
Bridge Die and RDL Interposer

Features

- Chip size : 9.1 × 12.23 mm
- Dimension : 8 inch / 200 mm
- RDL : 2 μ m, 4 layer
- Bump : Top side - Cu pillar, Btm side - SnAg

Application

- HBM & Chiplet Interconnect
- 2.xD Advanced Packaging



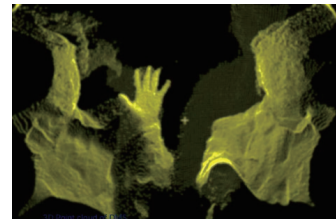
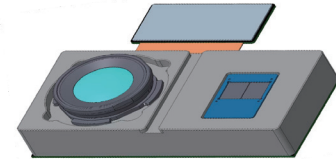
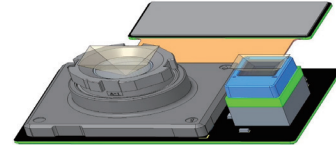
ToF Module

Features

- Dimension : 18.5(W) x 23.7(H) x 6.0(D) mm
- Resolution VGA / QVGA (H/W ISP(QVGA) integrated)
- High frame rate : 30 fps, High Accuracy : under 1%
- Multi camera scenario support with MUIC algorithm
- Detection range : 7 m (Eye safety : IEC60825-1 Class1)

Application

- Robotics
- Security, Gaming, AR/VR



3D Point cloud of DMS

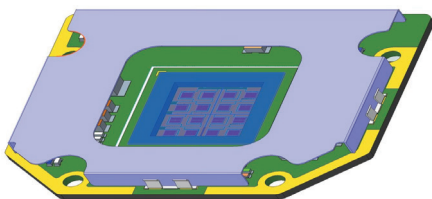
LiDAR Tx Module

Features

- Dimension : 40(W) x 35(H) x 5.0(D) mm
- Wave length : 940nm $\pm$ 10
- FOI: 92 $\times$ 70°
- FOI: 92 $\times$ 70°, Optical power : 50W
- Operating temperature : -40 ~ 105°C

Application

- Robotics
- Security, Industrial



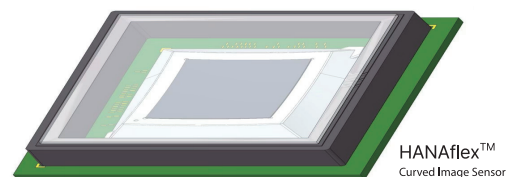
Curved Sensor

Features

- SPAD sensor for dToF LiDAR (Interface : MIPI CSI-2)
- Chip size : 10.56 $\times$ 9.0 mm (Sensor)
- Dimension : 25 $\times$ 27 mm
- Radius of curvature (r) : 50 mm

Application

- Automotive, Robotics
- Security

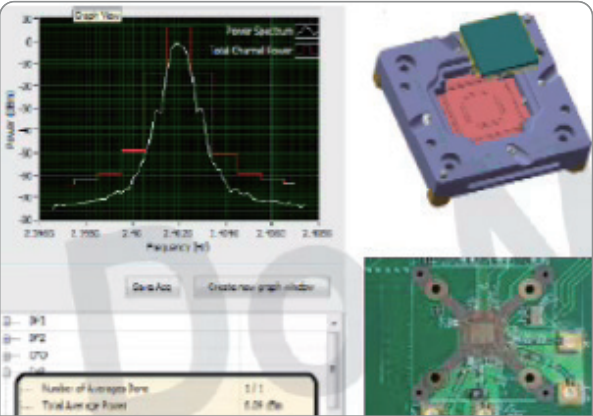


HANAflex™
Curved Image Sensor

Test service

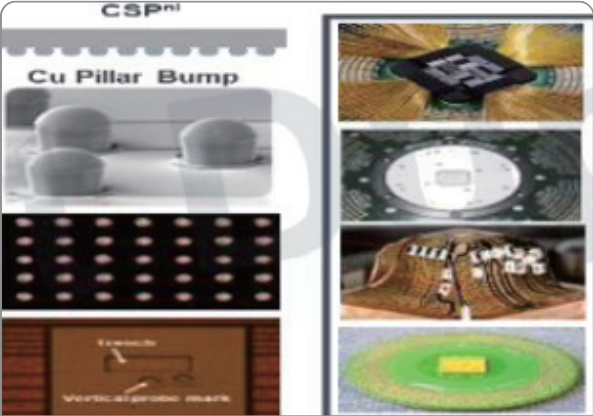
Test Offerings

We offer the best solution in the optimal platform that meets customer requirements. Our test solution covers wafer test, package test, and module test and shortens the development time frame by supporting test program development and design solution.



TEST LAB

- Test Consultation
- SW/HW Development
- Technical Support



Wafer Test

- 6", 8", 12" Wafer Test
- Advanced Probe Solution
- Tri-Temp & Direct Probe

Production :

Premium Mobile AP(FOWLP/IPOP), RF, Automotive AP, DDR5 Memory, Controller & Sensor WLCSP Solution (Bump – Test – DPS - 4S IR Insp. – T&R)

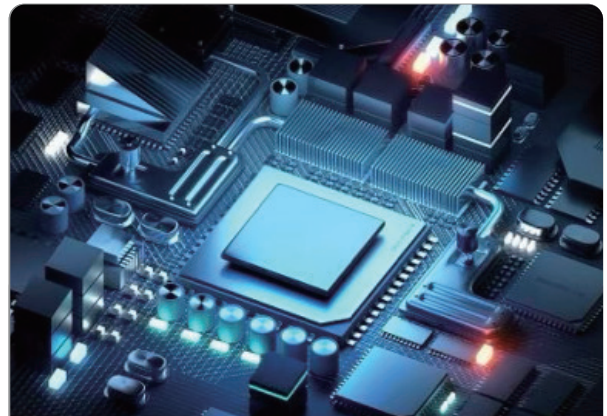
Equipment :

Teradyne UFLEX+ & UFLEX / Advantest V93K & T2K



Final Test

- Singulated PKG Test
- Latest Test Platforms
- Tri-Temp/Multi-Parallel



System Level Test & Module Test

- Mobile AP/Modem
- Automotive SLT
- Memory Module(HMV*)

Development man power :

- Test Program Development
- Test HW(Probe card, COK) Design
- IT System Development

Test Lab (Test Development Center @ Pan-Gyo) :

- Provide the most effective Test Platform and fixtures
- Test PGM development & Production release , Test Engineering Support

FA/Reliability Test Capabilities

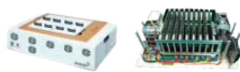
- One of the best capability among OSATs
- Various FA & reliability test equipment to satisfy the quality requirements

Electrical Test

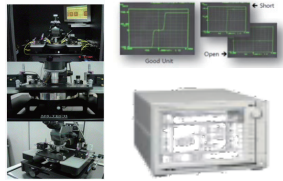
TDR (Time Domain Reflectometry)



DC Tester



Probe Station
Parameter Analyzer



Thermal
Emission Microscope



Photo
Emission Microscope



Structure/Element

[Structure/Element Analysis]

SEM (Scanning Electron Microscope)

EDS (Energy Dispersive X-ray Spectrometer)



[Non Destructive Analysis]

X-ray CT System / SAT



[Sample Preparation]

Polisher/Ion Miller/Plasma Etcher/
Laser & Wet Decaper/ Heat Spreader Decap.



Out-Of-Plane Displacement
Measurement System
Shadow Moire



Material Analysis

Thermal Analyzer
(DSC/TMA)



X-ray Fluorescence
Spectrometry



Universal
Testing Machine



Environment Test

Temperature Cycling Tester



Pressure Cooker Tester



IR reflow



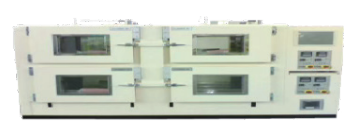
High Accelerated Temperature
and Humidity Stress Tester



Temperature Humidity
Storage Tester

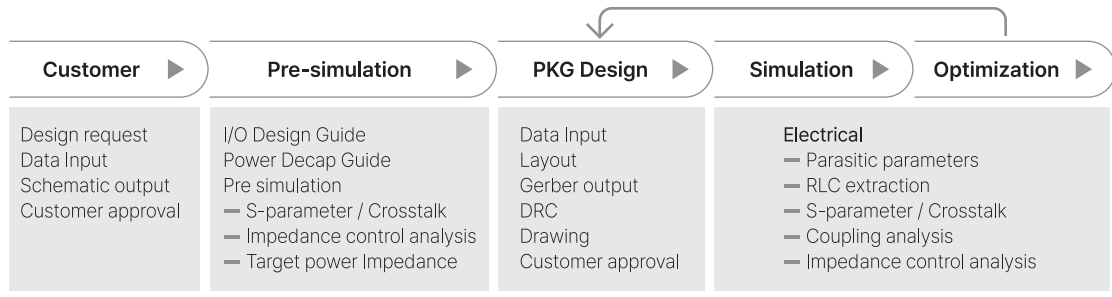


High Temperature
Storage Tester

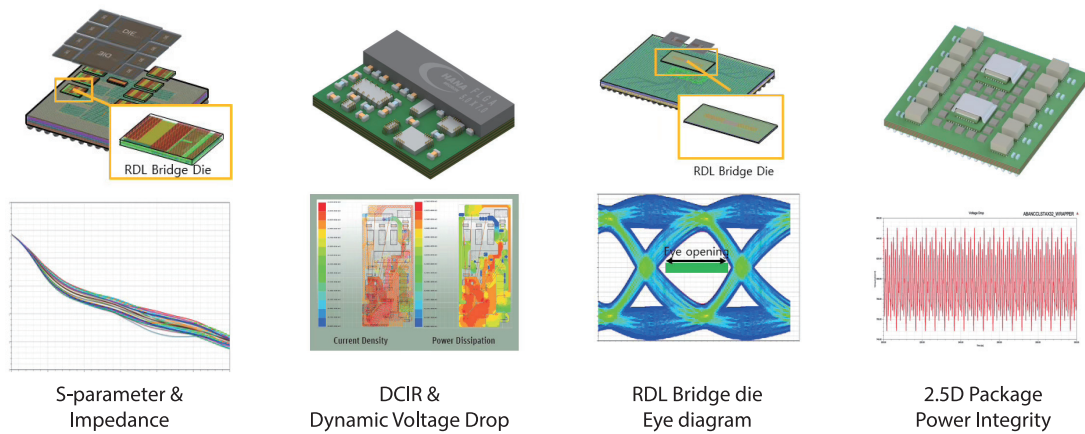


Design & Simulation

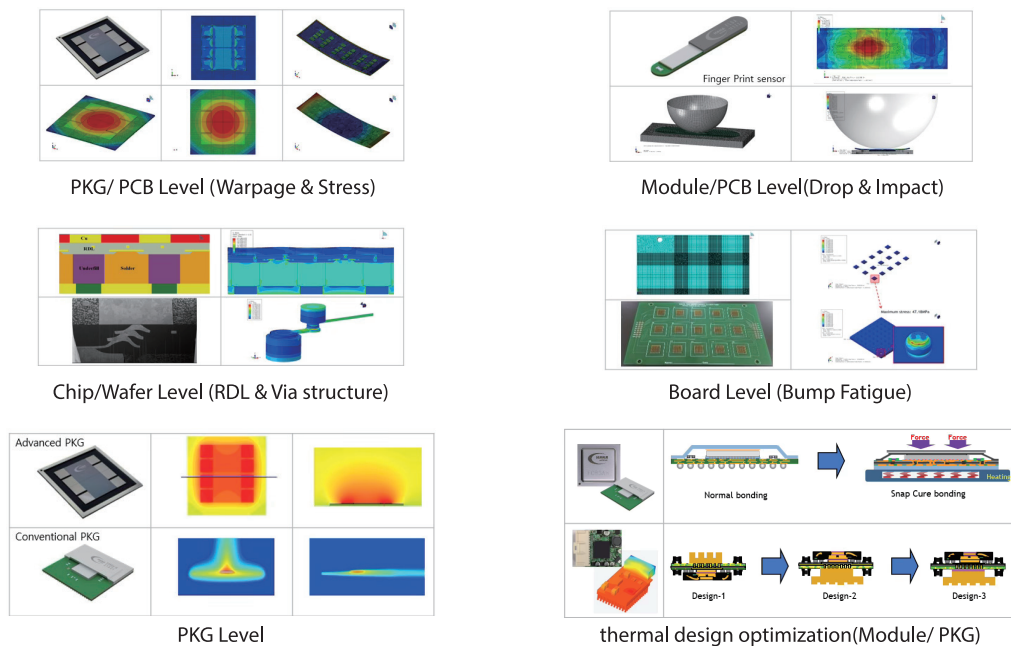
Design



Electrical



Structure / Thermal



A person wearing a white cleanroom suit, hood, and mask is holding a large, circular semiconductor wafer. The wafer is illuminated, showing a complex, colorful pattern of circuitry. The background is a blurred cleanroom environment.

Founded in 2001,

Hana Micron is Korea's No.1 OSAT company and ranks 8th globally (2024), specializing in packaging and testing.

We provide Full-Turnkey solution –

including Bump, Wafer Test (Probe Test), Assembly, Final Test and Module.

We are expanding our business from memory packaging to non-memory packaging and testing.

With our production sites in Korea, Brazil and Vietnam, we have built a solid global presence.

Hana Micron continues to develop advanced technology such as 2.5D packaging through ongoing R&D and drive future growth by collaborating with global customers.

HANA Micron, Inc.

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Global Network



HANA Micron (HQ)

Korea Asan (23Ksqm)
Bump, BGA, FCCSP, FCBGA, SiP & Test



R&D Center

Korea Pangyo
R&D, Sales, Test Support Center



HANA Micron Vietnam

Vietnam Bac Ninh (9Ksqm)
FBGA, QFN, SiP, FCCSP, FCBGA(P)



HANA Micron VINA

Vietnam Bac Giang (60Ksqm)
BGA, FCCSP A/T Memory Module A/T



HT Micron

Brazil Porto Alegre (6Ksqm)
BGA, Test, Memory Module A/T



HANA Micron America

America Santa Clara, CA; Austin, TX;
Sales office