



Company Profile

World-class leading edge with MOCVD

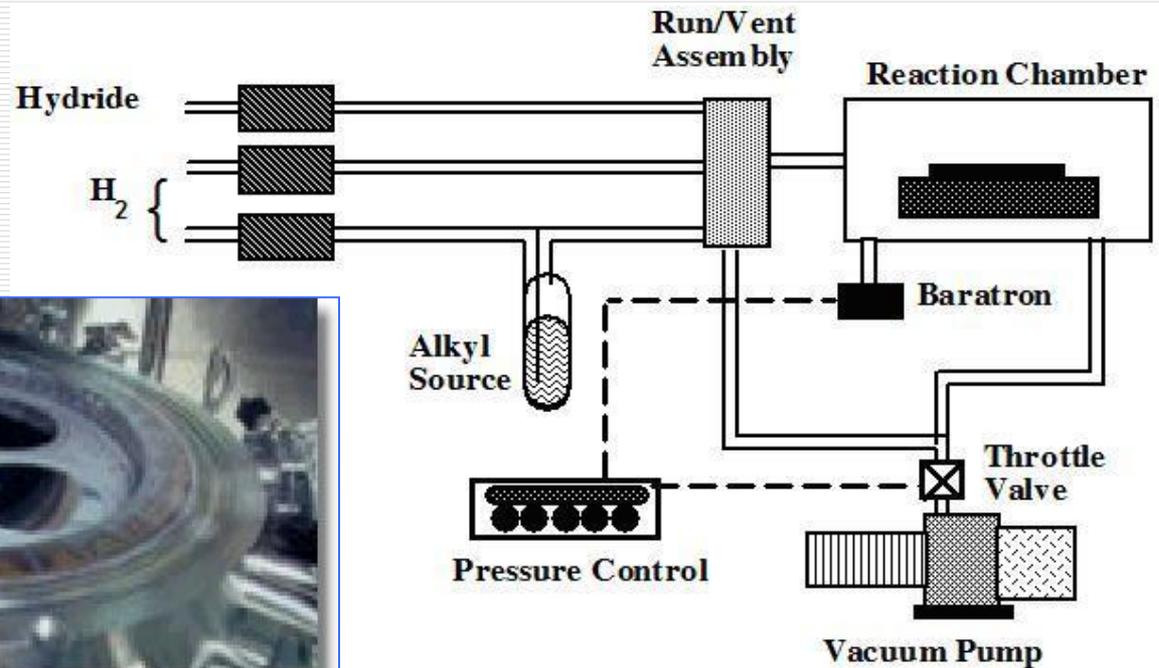




Core Technology

MOCVD (有機金屬氣相沉積法)

- Metal Organic Chemical Vapor Deposition





Core Technology

Production
Reactor

MOCVD Metal Organic Chemical Vapor Deposition

Way to
Produce

Through the organic metal chemical vapor deposition method, the semiconductor film is grown on the substrate, and the epitaxial layer is accurately controlled through the real-time monitoring of the machine to complete the production of epitaxial wafers for different products such as GaAs、InP and GaN.

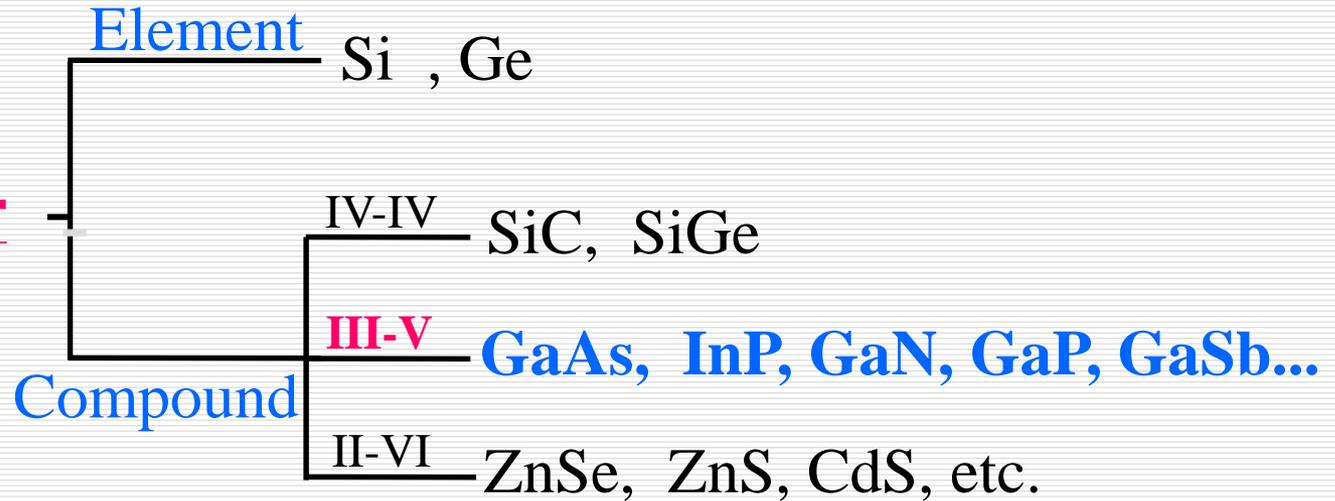
Production
Principle

The epitaxial layer is heated by MOCVD in the cavity of the substrate, and an atomic layer is stacked layer by layer to form an epitaxial layer.



Semiconductor (by Material)

Semiconductor



Period	Column II	III	IV	V	VI
2	Be 鈹 Beryllium	B 硼 Boron	C 碳 Carbon	N 氮 Nitrogen	O 氧 Oxygen
3	Mg 鎂 Magnesium	Al 鋁 Aluminum	Si 矽 Silicon	P 磷 Phosphorus	S 硫 Sulfur
4	Zn 鋅 Zinc	Ga 鎵 Gallium	Ge 鍺 Germanium	As 砷 Arsenic	Se 硒 Selenium
5	Cd 鎘 Cadmium	In 銦 Indium	Sn 錫 Tin	Sb 銻 Antimony	Te 碲 Tellurium
6	Hg 汞 Mercury	Tl 鉈 Thallium	Pb 鉛 Lead		

二元化合物 Binary : GaAs, InP, GaP, GaN, etc.

三元化合物 Ternary : InGaAs, InGaP, AlGaAs, etc.

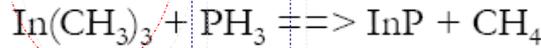
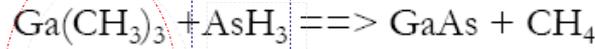
四元化合物 Quaternary : AlGaInP, InGaAsP, etc.

五元化合物 Pentanary : AlGaInAsN, etc.



Chemical Reaction During Epitaxy

化學反應式：



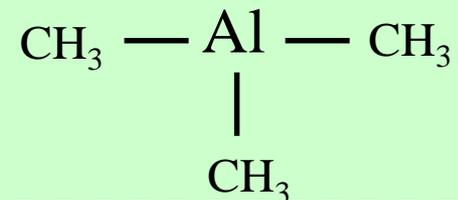
主要原物料：

MO Source + **Hydride** + Carrier Gas : **H₂**

- TEAl : Tri-ethyl-Aluminum (C₂H₅)₃Al
- TMGa : Tri-Methyl-Gallium (CH₃)₃ Ga
- TMIn : Tri-Methyl-Indium (CH₃)₃In
- DETe : Di-ethyl-Tellurium (C₂H₅)₂Te
- DEZn : Di-ethyl-Zinc (C₂H₅)₂Zn
- CP₂Mg : Bis (cyclo-penta-dienyl) Magnesium 環戊二烯鎂

- AsH₃ : Arsine
- PH₃ : Phosphine
- SiH₄ : Silane
- Si₂H₆ : Disilane
- H₂Se : Hydrogen Selenide
- CBr₄ : Carbon Tetrabromide

TMAI Tri - Methyl - Aluminum (CH₃)₃Al
 三 甲 基 鋁





Advantages of Compound Semiconductor

1. High Electron Mobility 高電子移動速率 (5.7x higher than CMOS)
2. High Frequency Response 高頻率響應
3. Wide Band Width 寬幅之頻寬
4. High Linearity 高線性度
5. High Power 高功率
6. Alternative Choice of Material 材料選擇多元性
7. 抗輻射

適用於微電子產品—HBT、pHEMT、BiHEMT、GaN on XX
光電子產品—PIN (PD、APD)、VCSEL、LD、SC、
CW-Laser、GaN on XX



GaAs in Wireless Communication Supply Chain

Sumitomo, Freiburger, AXT

2~6 "GaAs Substrate

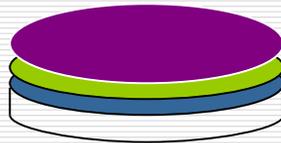


GaAs Epi- Wafer
磊晶片



MOCVD Reactor

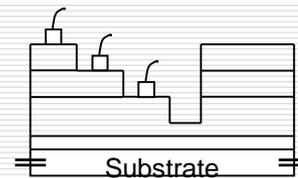
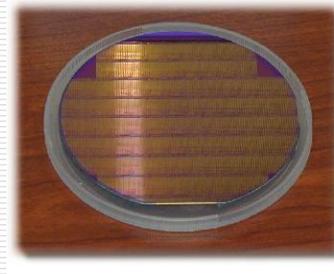
VPEC is a Pure
Epi Provider



IDM : Qorvo, Skyworks

Fabless : Avago,
Qualcomm, Richwave,

Microelectronics
IC Process



Foundry :
WIN, AWSC



Wireless
Communication



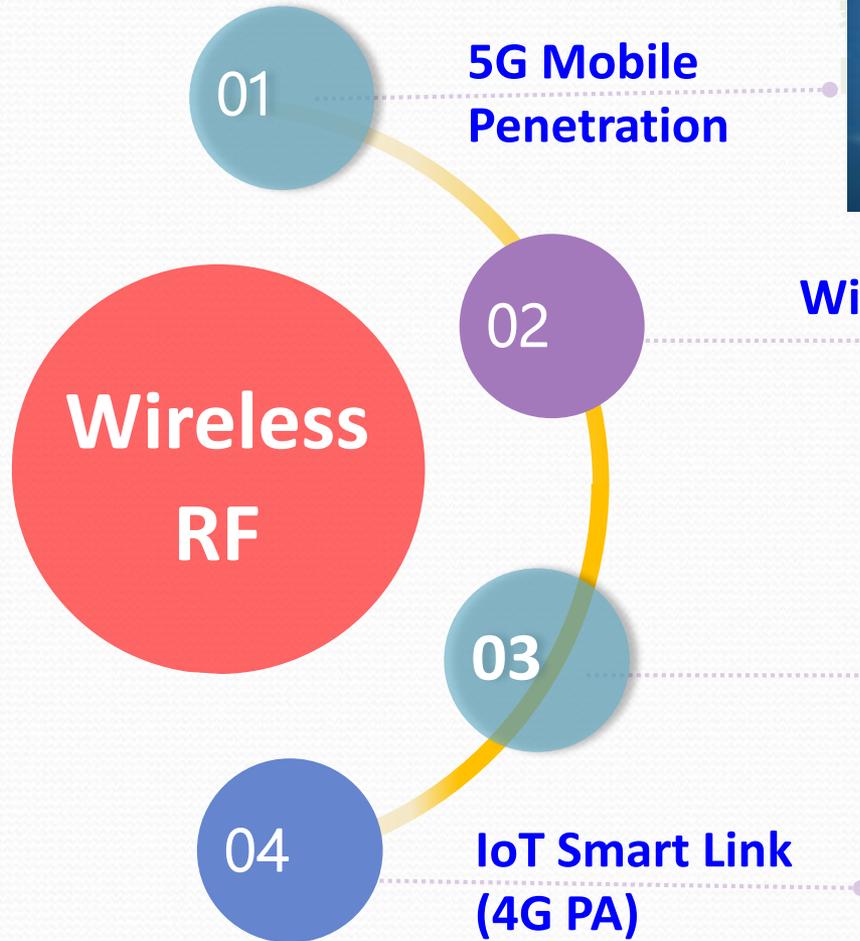
IC Package & Testing



2022-2025H1 Financial Result

	2025 H1	%	2024	%	2023	%	2022	%
Revenue	1,507,750	100%	3,241,217	100%	2,694,104	100%	2,603,629	100%
Gross margin	562,216	37%	1,278,964	39%	1,108,914	41%	1,089,007	42%
Operating Profit	301,054	20%	721,214	22%	542,069	20%	579,950	22%
Non-operating income & expense	-80,027	-5%	96,460	3%	-347	0%	87,533	3%
Tax	-27,431	-2%	-146,619	-5%	-91,490	-3%	-122,755	-5%
Net income	193,596	13%	671,055	21%	450,232	17%	544,728	21%
EPS	1.05		3.63		2.43		2.95	

2025 Outlook



2025 Outlook



Opto electronics

01

Data Center
High Speed Connectivity



PD for 800G
VCSEL for 400G & 800G

02

3D-sensing



VCSEL / PD

03

AR/VR



VCSEL

04

Future Driving Engines

UAV



AI glass

CPO

P-sensor、3D Sensing、ToF



LEO Solar Cell



Car LiDAR (LD/PD)

