

強茂集團

PANJIT International Inc.

Investor Relations

Accountability



Customer Focus



Mutual Trust and  
Collaboration



Innovation



Learning and  
Growth





## 無錫至極動能科技有限公司

Sumnergy

成立: 2017.6

營業項目:

電池管理系統, 電池組

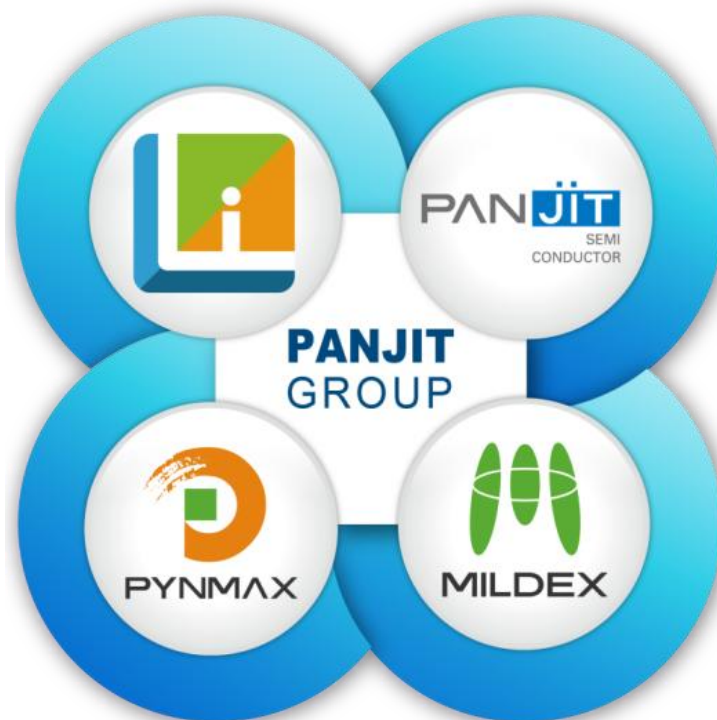
## 環茂科技股份有限公司

PYNMAX

成立: 2000.3

營業項目:

晶圓製造



## 強茂股份有限公司

PANJIT

成立: 1986.5

營業項目:

功率式元件、封裝測試

## 熒茂光學股份有限公司

MILDEX

成立: 2005.5

營業項目:

觸控面板 (工業/軍用)



# 強茂 生產據點



前端晶圓



後端封測

- 上市公司：台灣2481 (2000上市)
- 總部：高雄, 台灣
- 市場排名
  - 全球二極體 # 7
  - 大中華區 分離式器件公司 # 1
- 營業額
  - 2017 集團營收 3.91 億美金, 集團營業利益 0.31 億美金
  - 2017 汽車應用占比 0.27億美金
  - 主要客戶包含了全球 EMS, 汽車應用, 工業應用, 發光二極體以及觸控面板, 包含了台灣區, 中國, 韓國區, 日本區, 美洲區, 和歐亞區

# 全球二極體排名

No.	2016		2017	
1	Vishay	10%	Vishay	11%
2	Rohm	9%	Rohm	10%
3	ON Semiconductor	7%	ON Semiconductor	8%
4	Microsemi	7%	Infineon Technologies	7%
5	Infineon Technologies	7%	Microsemi	7%
6	NXP	6%	Diodes	6%
7	STMicroelectronics	6%	<b>PANJIT</b>	<b>5%</b>
8	Diodes	6%	STMicroelectronics	5%
9	<b>PANJIT</b>	<b>5%</b>	Nexperia	4%
10	Semtech	4%	Good-ark	4%
	Others	33%	Others	33%

- 全球二極體營收排名: # 7<sup>th</sup>

\*Diodes above 0.5 amps.

Excluding RF diode

# 全球分離器件排名

No.	2016		2017	
1	Infineon Technologies	13%	Infineon Technologies	14%
2	ON Semiconductor	8%	ON Semiconductor	10%
3	NXP	8%	Mitshubishi	6%
4	Mitsubishi	6%	Nexperia	6%
5	STMicroelectronics	6%	Rohm	6%
6	Vishay	5%	Toshiba	5%
7	Toshiba	5%	Vishay	5%
8	Rohm	5%	STMicroelectronics	5%
9	Renesas Electronics	4%	Renesas Electronics	4%
10	Fuji Electric	3%	Fuji Electric	3%
11	Diodes	3%	Diodes	3%
12	Fairchild Semiconductor	2%	Microsemi	2%
13	Microsemi	2%	AOS	2%
14	Toyota	2%	<b>PANJIT</b>	<b>2%</b>
15	<b>PANJIT</b>	<b>2%</b>	Shindengen Electric	2%
16	Shindengen Electric	2%	Toyota	2%
17	Denso	1%	Denso	1%
18	IXYS	1%	IXYS	1%
	Others	22%	Others	21%




























- 分離式器件(包括二極管, MOSFET, IGBT and etc.)全球營收排名:15<sup>th</sup>

Excluding RF diode



# IGBT 世界級競爭對手

## IGBT製造商排名(依伏特數)

	No.1	No.2	No.3	No.4	No.5
400V and Less			 Leading Innovation >>>	 life.augmented	
600-650V					 life.augmented
1200V					 life.augmented
1700V				<b>HITACHI</b>	
2500V-3300V				<b>HITACHI</b>	
4500V and More			<b>HITACHI</b>		 中国中车 CRRC

- IGBT器件行業正在改變，隨著電動汽車市場的成長，電源模組正在成為價值鏈中的關鍵部分；2013年以后，中國市場約占全球IGBT器件市場的三分之一，中國市場為強茂未來重點發展對象

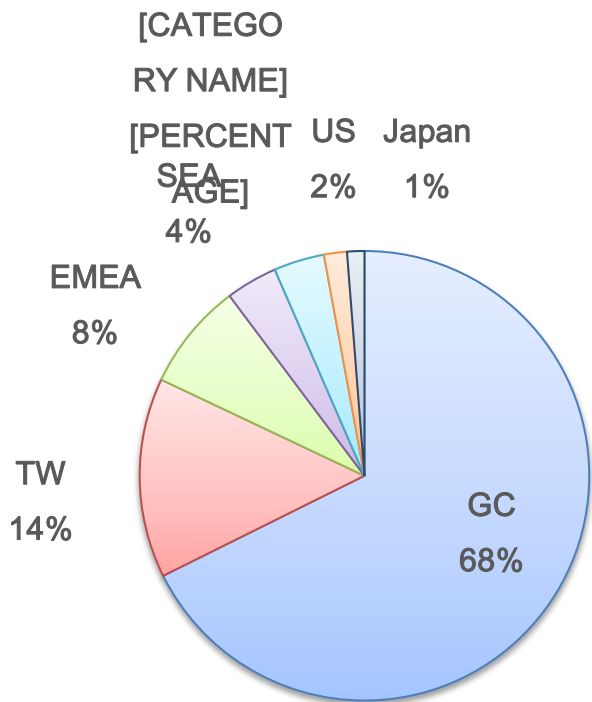
單位: 仟元 美金	2018 Q1	%	2017 Q1	%
現金	55,902	8%	41,521	7%
應收款項	147,767	20%	113,134	18%
存貨	84,639	11%	59,916	10%
資產總計	727,709	100%	627,632	100%
短期借款	76,012	10%	39,474	6%
應付款項	75,050	9%	53,038	8%
長期借款	191,816	26%	194,559	31%
負債總計	459,054	62%	366,940	58%
股東權益	268,655	38%	260,692	42%
每股淨值 (NTD)	17.47		18.05	

# 財務訊息

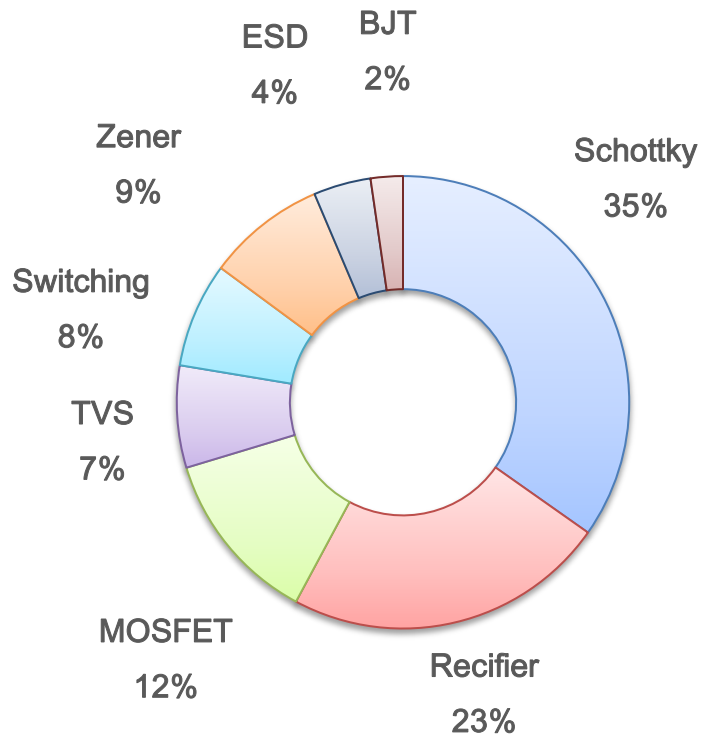
## 合併綜合損益表

單位: 仟元 美金	2018 Q1	%	2017 Q1	%	Diff
二極體事業處	82,162	87%	65,541	70%	16,621
光學面板事業處	10,501	11%	22,113	24%	-11,612
太陽能事業處	1,800	2%	5,146	6%	-3,346
其他	17	0%	187	0%	-170
營業收入	94,480	100%	92,987	100%	1,493
營業毛利	21,852	23%	20,368	22%	1,484
營業費用	13,583	13%	13,816	15%	-233
營業利益	8,269	10%	6,552	7%	1,717
稅前淨利(損)	8,641	10%	7,846	8%	795
所得稅	1,521	2%	1,236	1%	285
稅後淨利(損)	7,120	8%	6,610	7%	510
EPS (NTD)	0.6		0.34		0.26

## 區域別

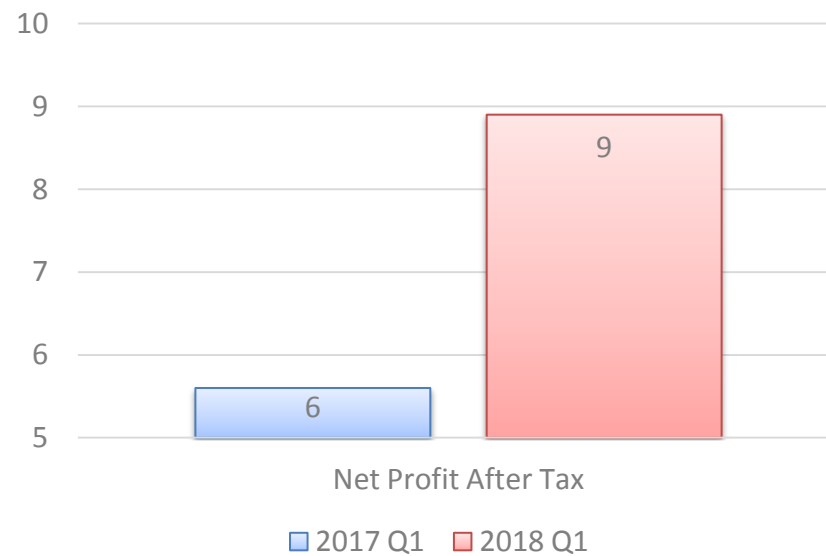
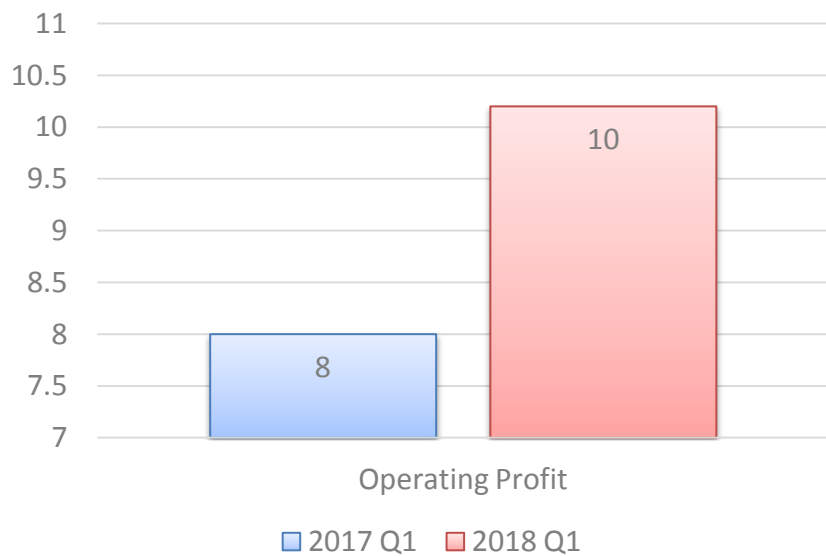
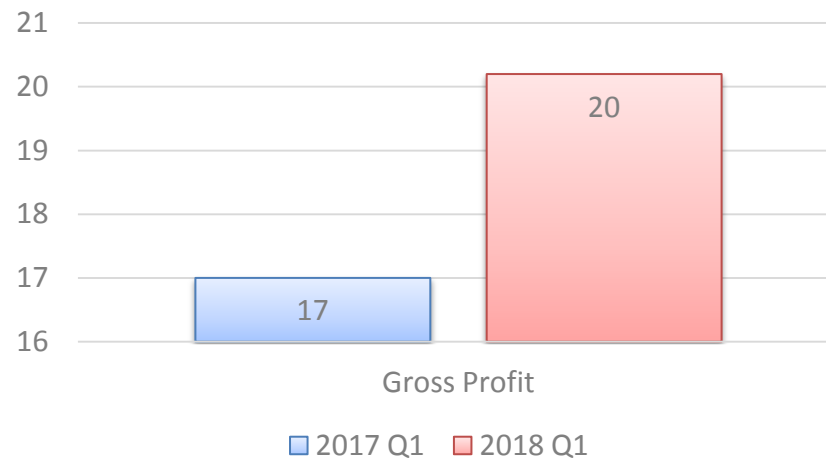
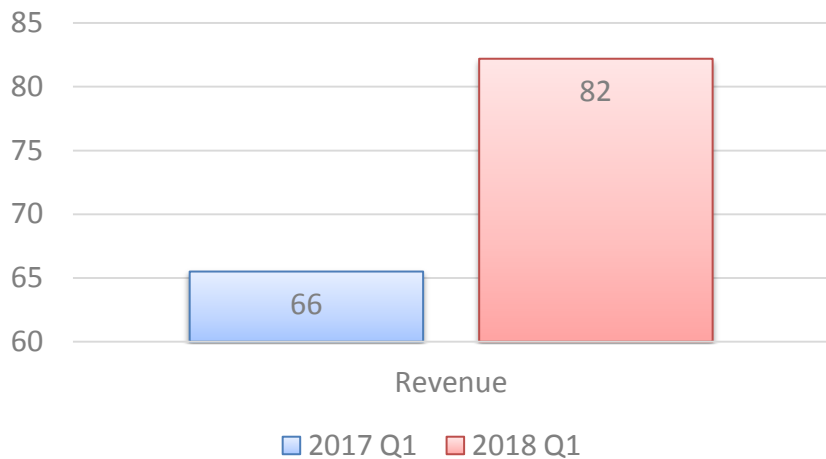


## 產品別



# 2018 Q1 二極體事業處財務重點

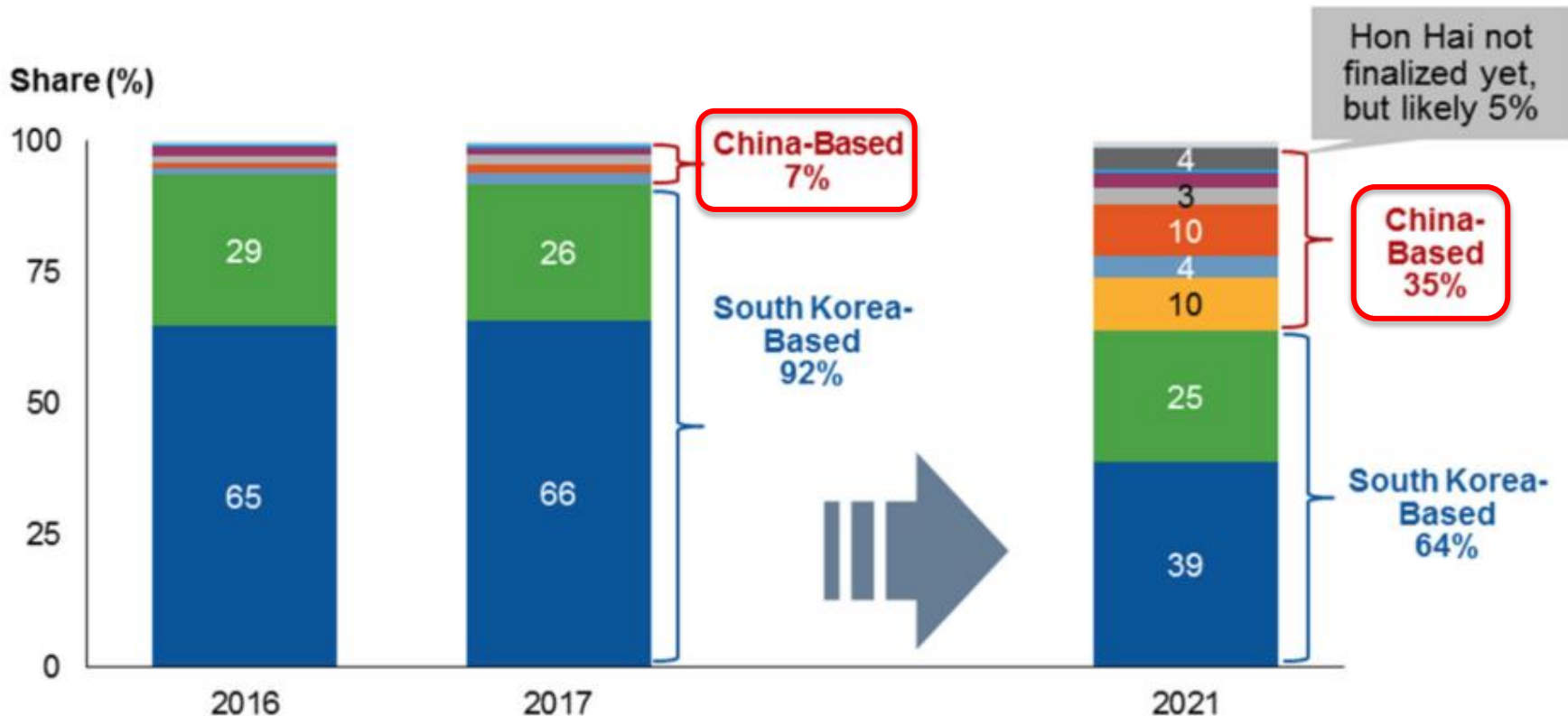
Unit: M' USD



# 消費性電子市場

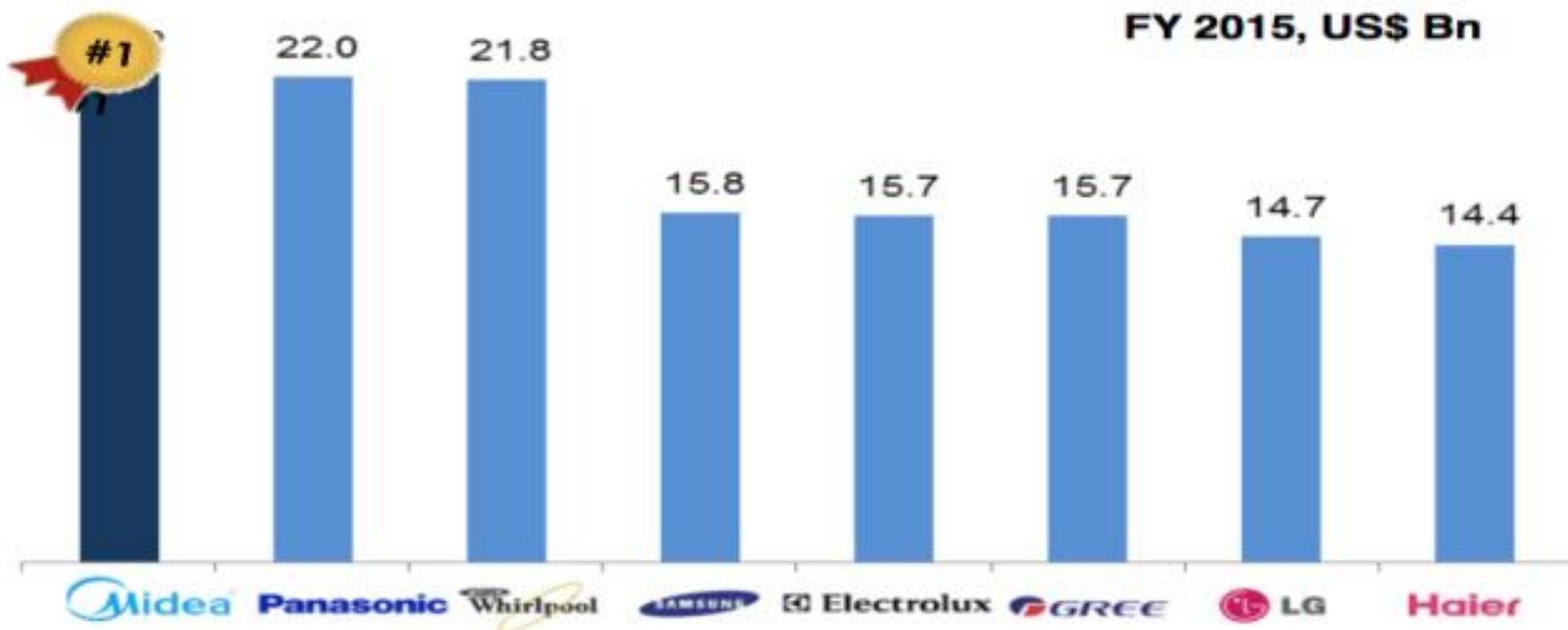
## AMOLED 全球產能市場占比 2016-2021

■ SDC ■ LGD ■ LGD JV in China ■ Tianma ■ BOE ■ Visionox ■ EDO ■ Truly ■ CSOT ■ AUO ■ JDI



- 2021 AMOLED市場，中國廠商將佔全球產能35%

## 全球消費性家電營業額排名

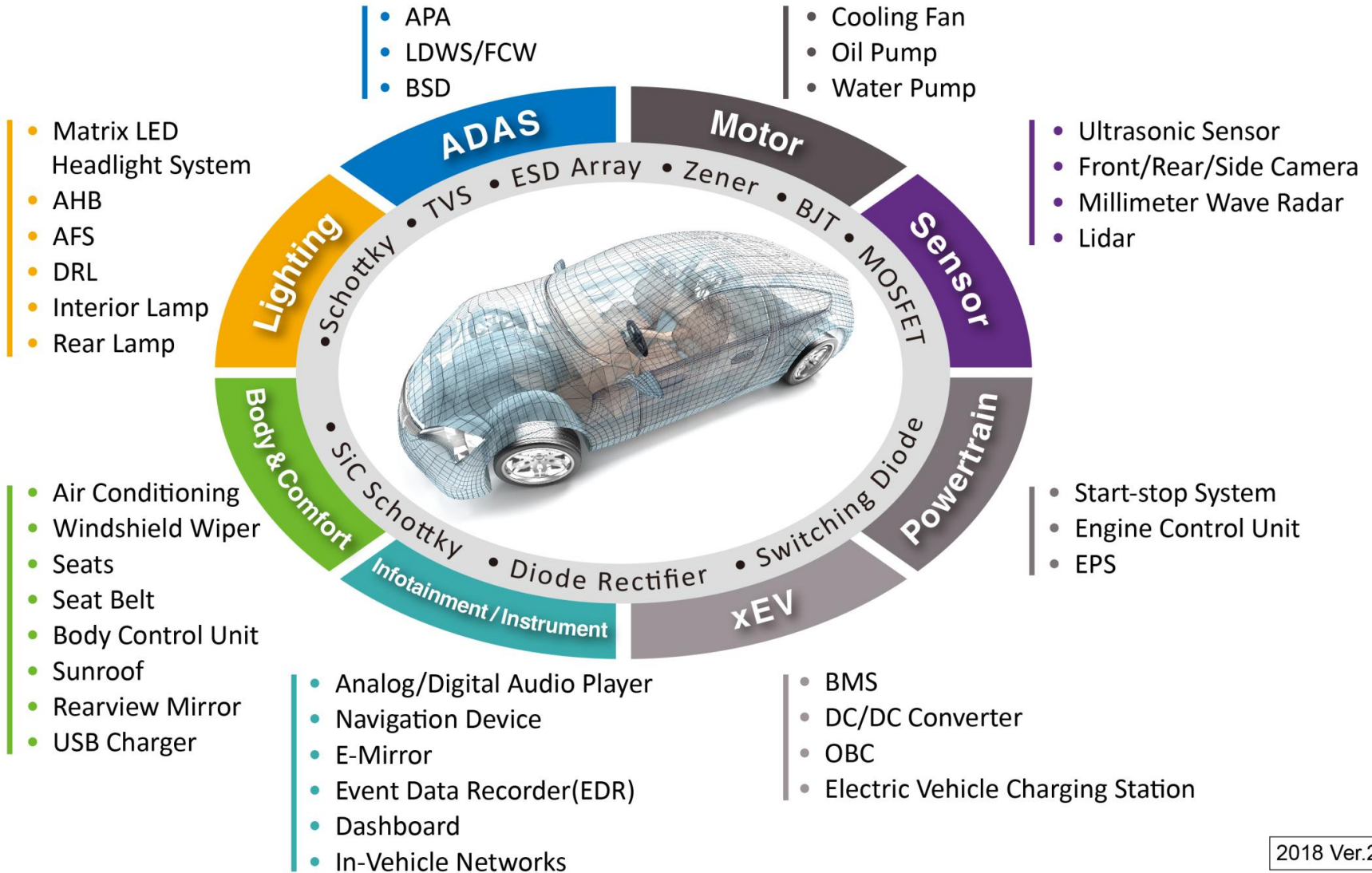


- 2021，市場主要家用電器產值預計達到 281億美金

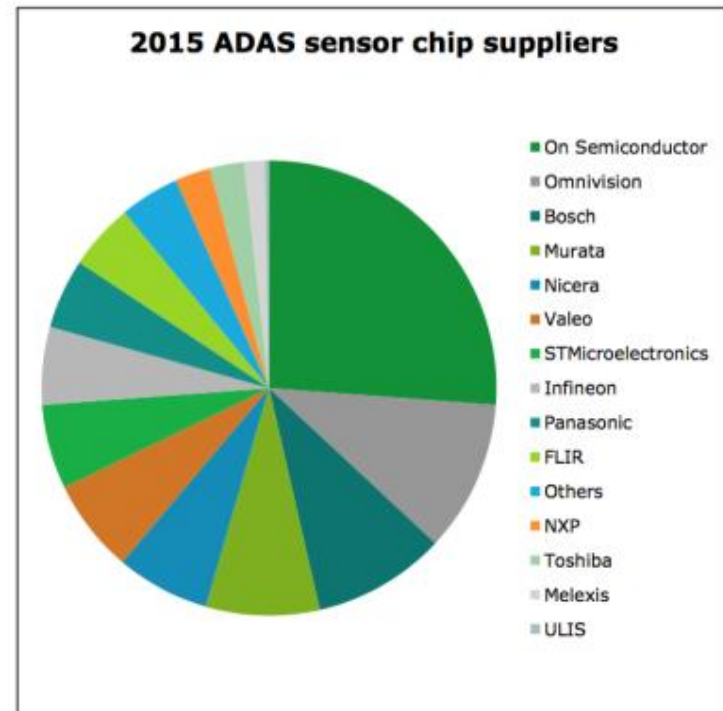
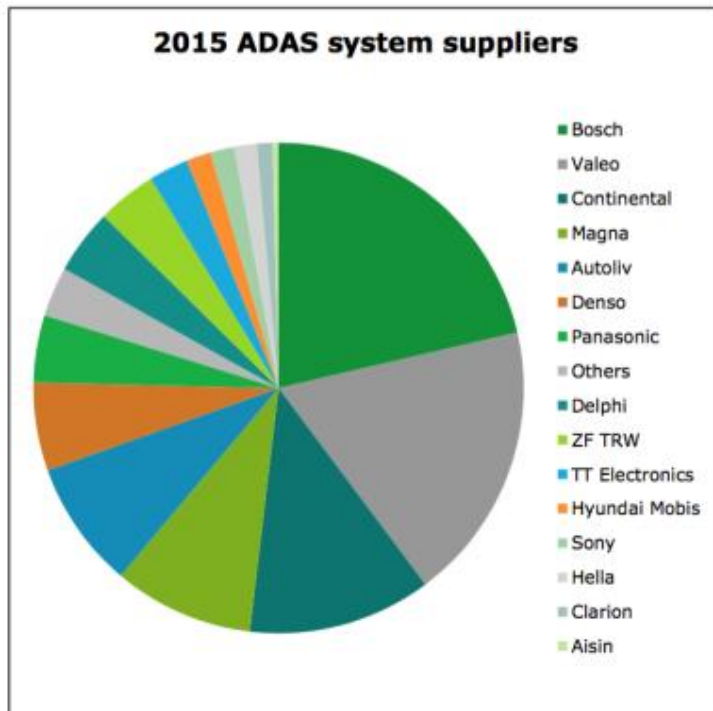
source: Home Improvement Research Institute



# 汽車應用市場



- More than 50% of ADAS systems are supplied by 4 companies
- > More than 50% of Sensors supplied in ADAS systems are manufactured by 4 companies with the largest CIS sensor company not in the top 10

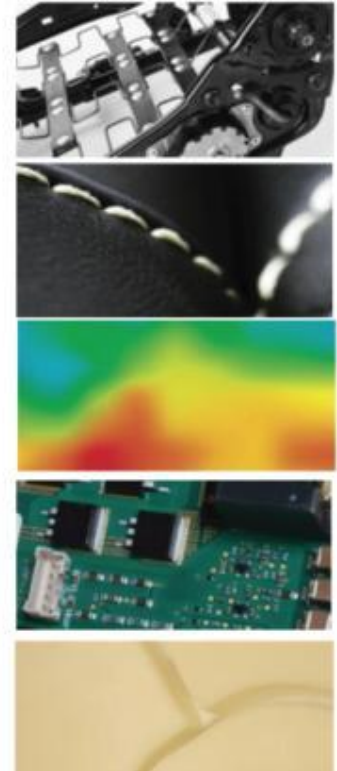


\*includes image sensors, radar transceivers, ultrasonic and infrared sensors



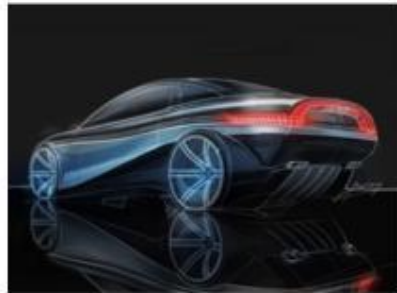
Unique competitive advantage for Lear

	2017 Estimated Market Size	Lear Share
<b>SEAT STRUCTURES</b>	\$19.9B	9%
<b>SEAT COVERS</b>	\$11.6B	17%
Leather ✓	\$3.8B	30%
Fabric	\$2.6B	17%
<b>SEAT COMFORT</b>	\$1.8B	N/A
Heat / Cool ✓	\$1.0B	
Lumbar / Massage	\$0.8B	
<b>SEAT ELECTRONICS</b> ✓	\$2.3B	9%
<b>FOAM</b>	\$6.4B	6%





**Headlamps**



**Signal Lamps**

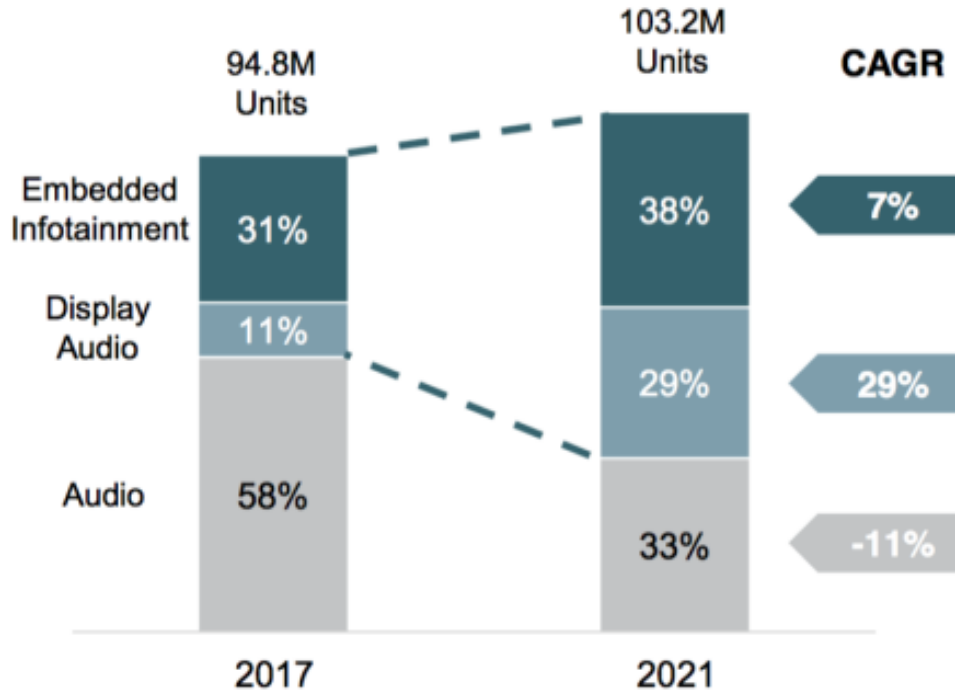


**Electronics**



**2 Wheeler Lighting**

## Audio/Infotainment Market Trends



- 顯示型音響，因為 CarPlay 以及 Android Auto 而成長數度最快
- 預計 HTML5 以及 Android 將成為嵌入式信息娛樂的關鍵技術
- 音頻系統與新興市場息息相關



SmartCore™

- Drives ECU consolidation and reduces cost to OEMs
- First tier 1 to deliver solution launching in early 2018
- Four OEM customers adopting this technology



Infotainment Solutions

- Developer friendly platform using HTML5 enables third-party applications
- AllGo acquisition complements display audio capabilities
- Highly secure and over the air upgradeable



Autonomous Driving

- Open development of AI based autonomous solution
- Complete suite of hardware and software tools for rapid development
- Launch technology platform at CES 2018



- 胎壓偵測示意圖 Tire pressure monitoring system (TPMS)
- 汽車配給4個胎壓偵測系統

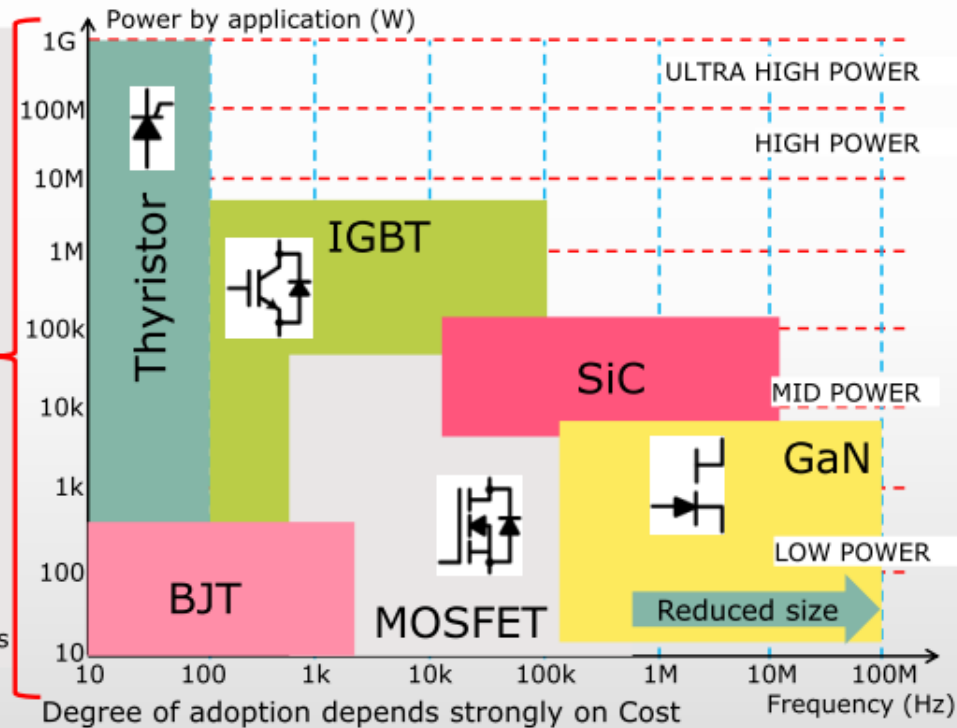


# 研發 & 趨勢

## Application

## Future Scenario Power Electronics

- > HVDC
- > HC-supplier
- > Large drives
- > Ships
- > Locomotives
- > Large solar plants
- > Trams, buses
- > Electric cars
- > On-roof PV
- > Small drives
- > Air conditioner
- > Robotics
- > Washing machine
- > SMPS
- > Chargers/Adapters



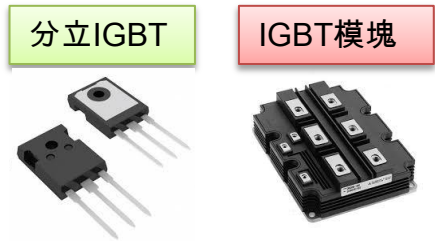
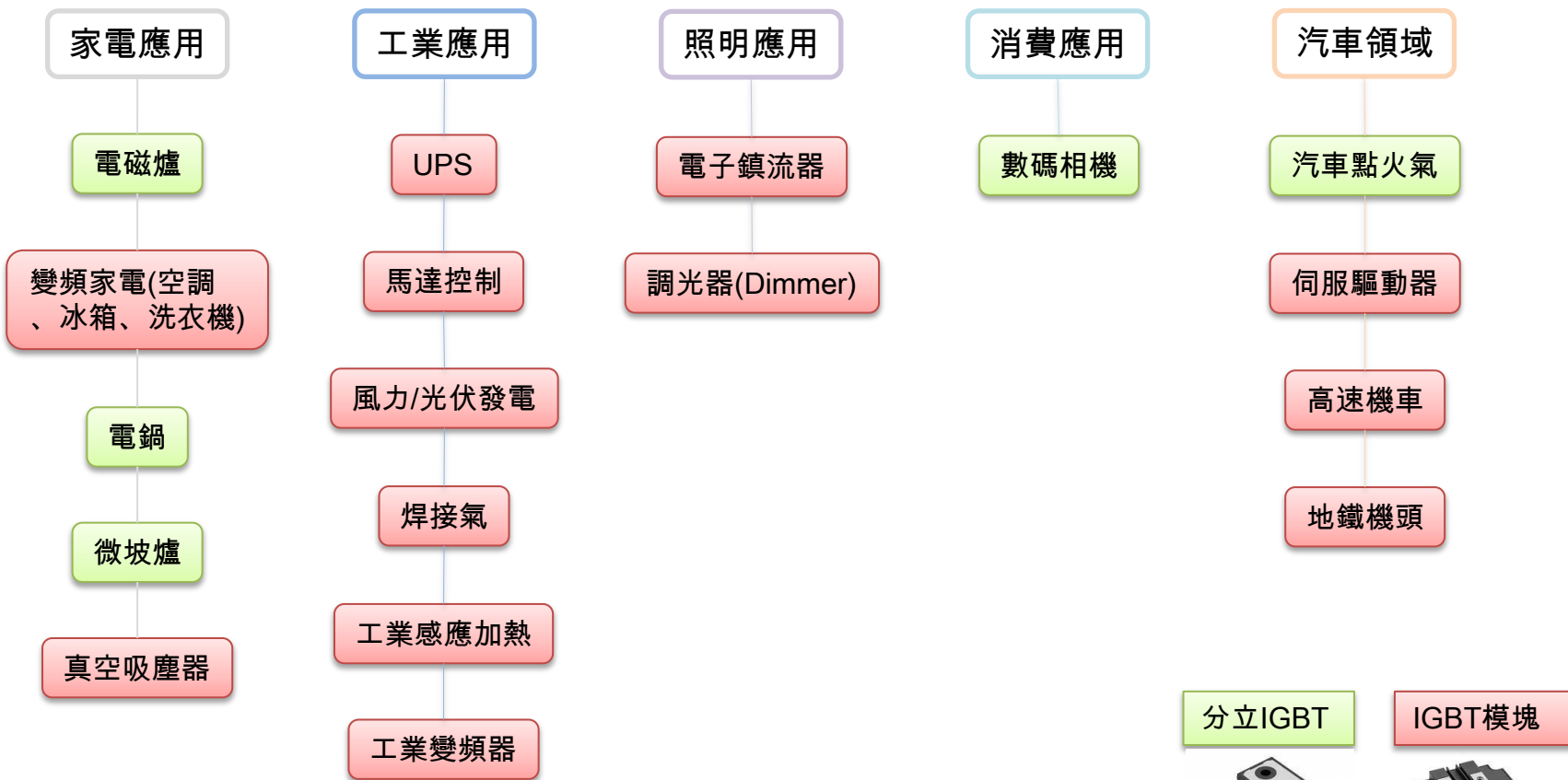
## Report covers

- IGBTs
- MOSFETs
- GaN
- SiC
- Controllers
- Passives

## Detailed discussion of

- Market Drivers
- Key Metrics
- Trends
- Challenges

## IGBT 應用範圍



# Questions & Answers

