

# 688396.SH

IDM

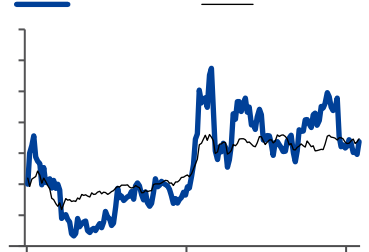
5G

MOSFET

12

8

12



2018A 2019A 2020E 2021E 2022E











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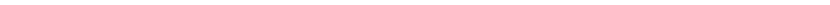
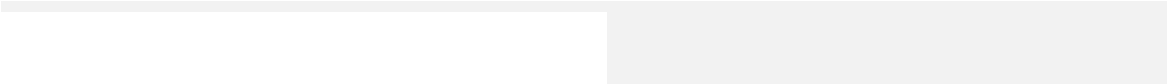
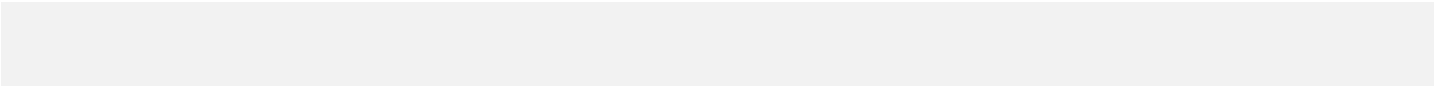
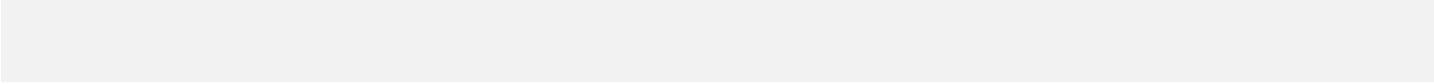
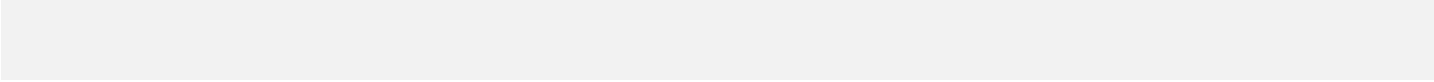
<b>2019</b>	<b>MOS</b>
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<b>16</b>
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<b>7.5%</b>
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**IC**



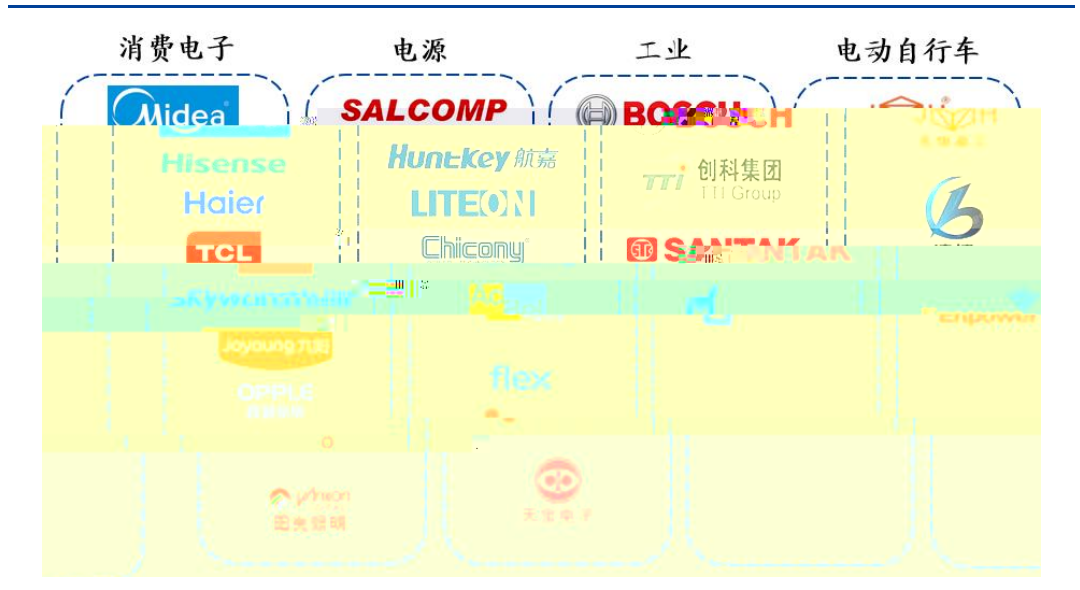
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2018

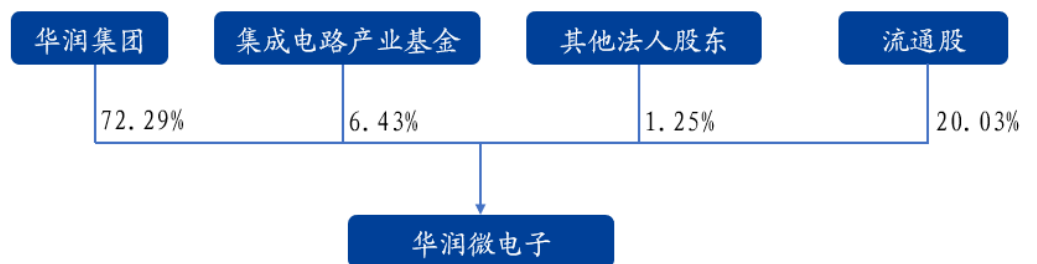
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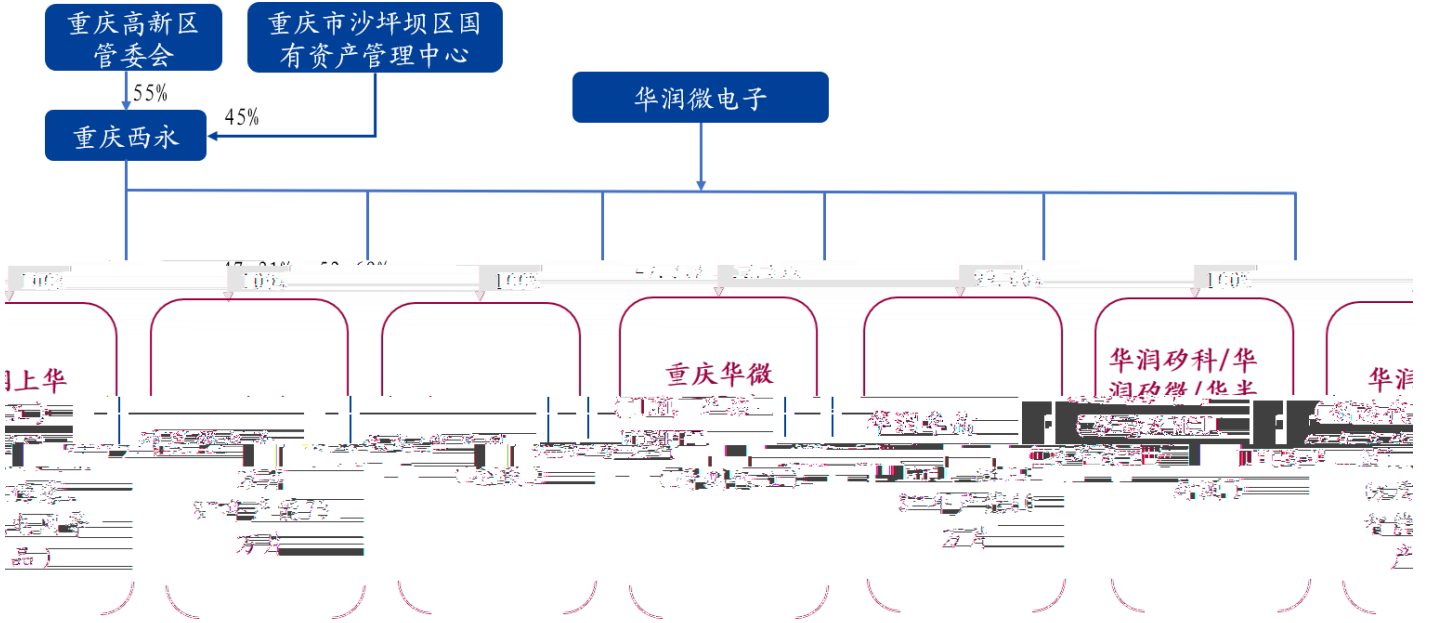
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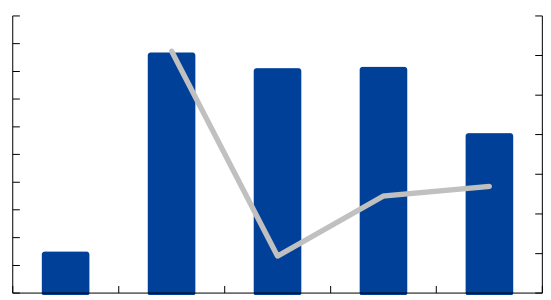
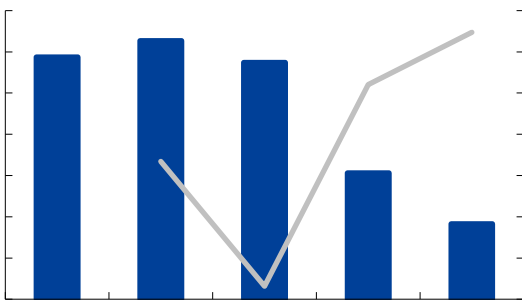


### 1.3

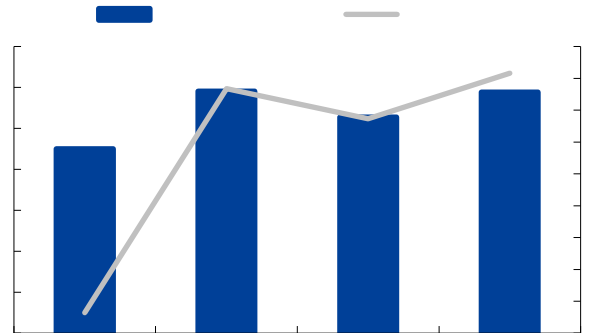
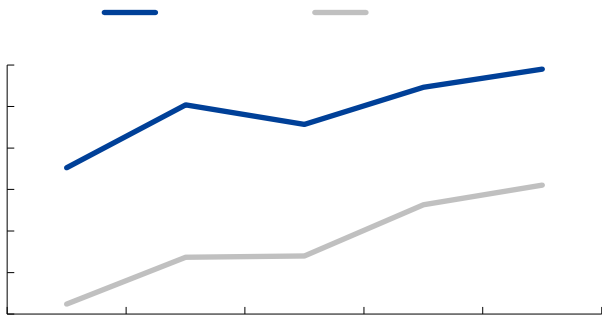


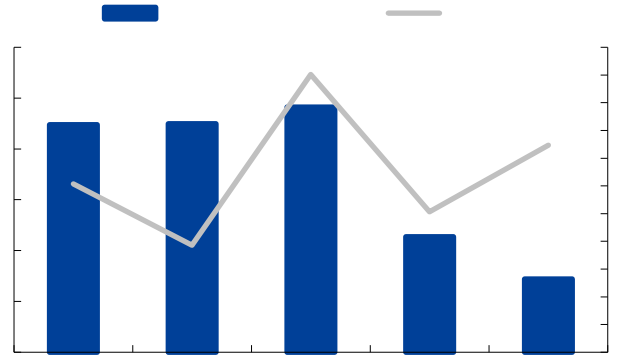
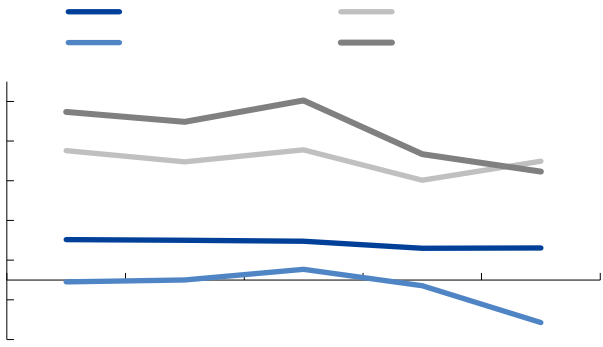


1.4



2019	2018	2017	2019	2018	2017	2019	2018	2017
25.2	26.8	23.4	44.1%	42.9%	39.9%	29.5%	34.0%	19.6%
31.8	35.7	35.2	55.9%	57.1%	60.1%	17.8%	18.6%	16.3%
57.0	62.6	58.6	100.0%	100.0%	100.0%	22.9%	25.2%	17.6%





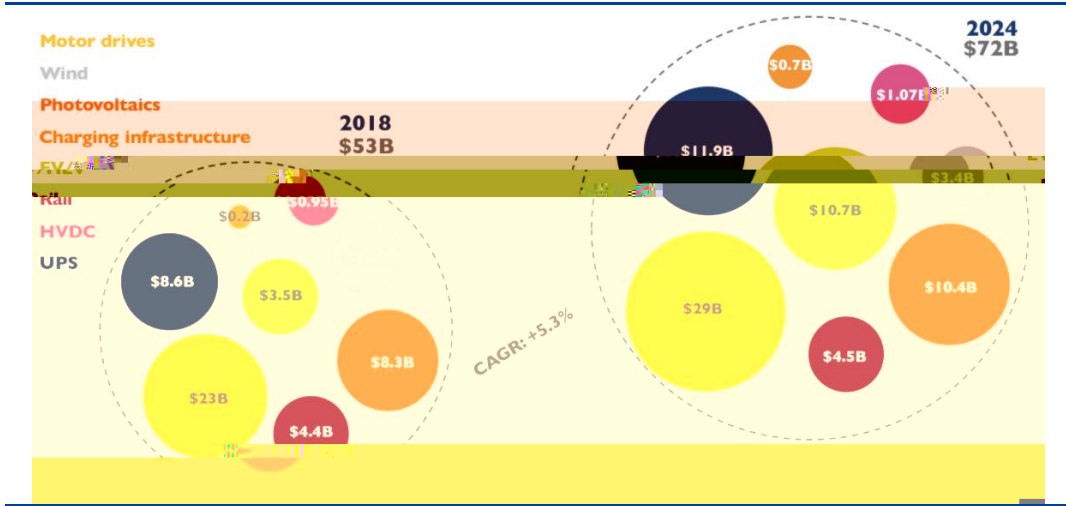
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Yole 2018

## **2.1 5G**

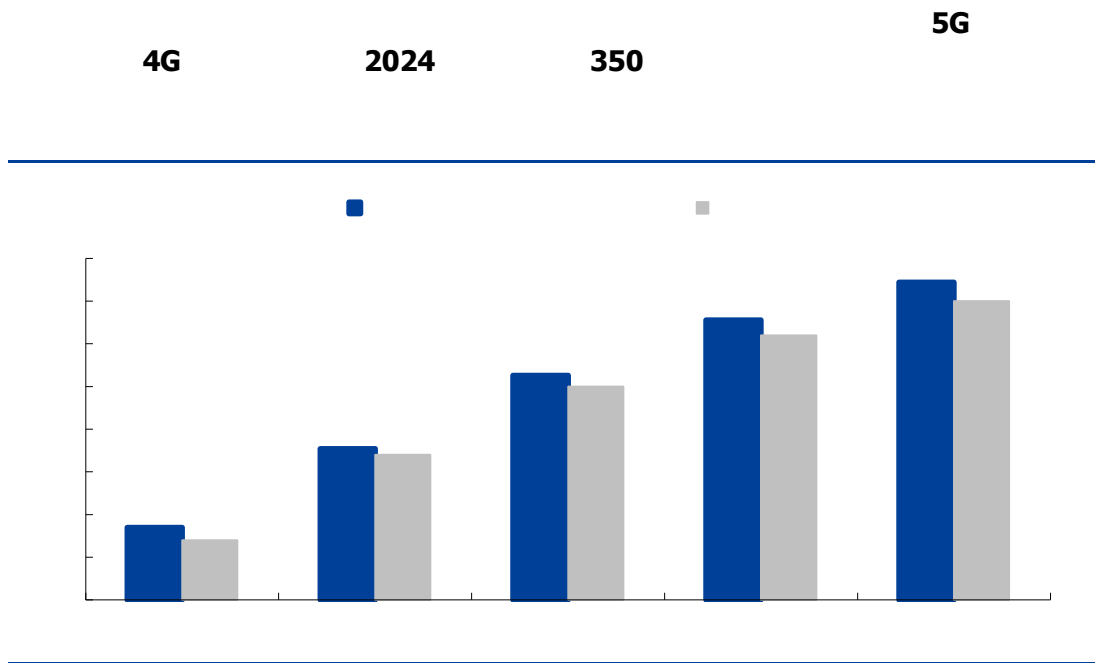


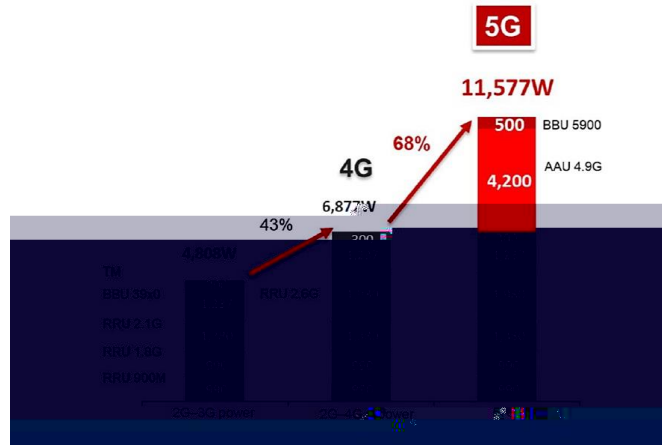




**2.1.2 5G**

5G			5G	
2.3GHz	3.5GHz	4.9GHz	26GHz	29GHz



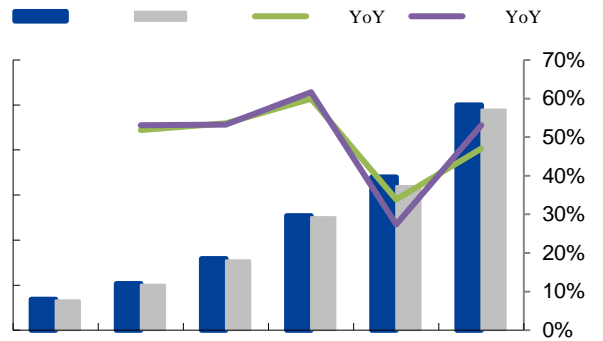
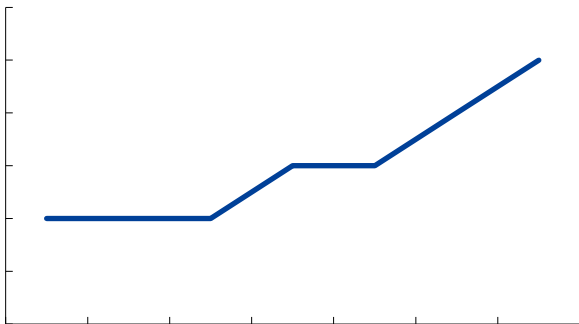


2.2

IBGT

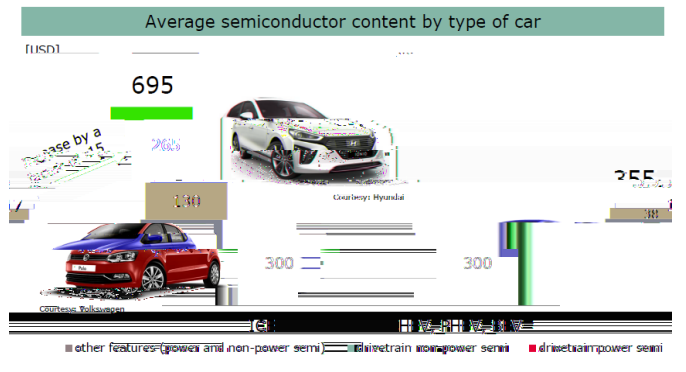
MOS

2011	8000	2017	79.4
2.7%		2012-2020	2020
500	200		

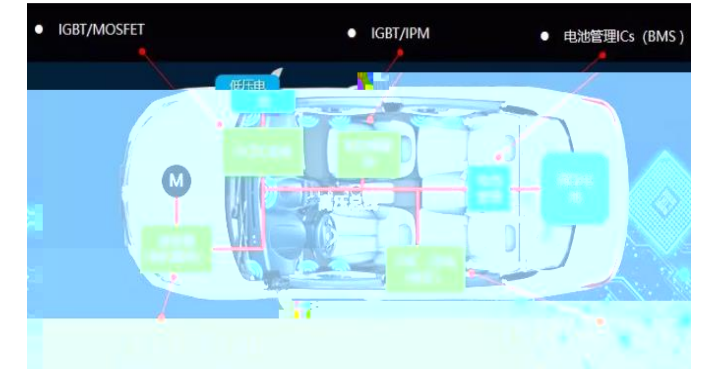


695 355 /  
15 17 /  
265

34



35

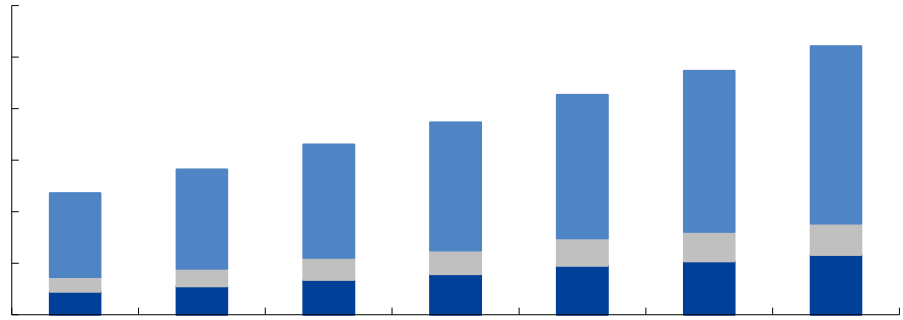


36

	SSV	Mild HEV	Full HEV	PHEV with EREV	EV BEV/FCV
/	MOSFET 1.5-10kw 3.5kw				
DC/DC			MOSFET 1.5-3kw 2.25kw		
		MOSFET/IGBT 5-20kw 15kw		IGBT 20-150kw 70kw	
OBC +				IGBT 20-40kw 30kw	MOSFET 3-6kw IGBT 10-40kw
NE	3.5kw	17.25kw	52.25kw	56.75-102.5kw	

IGBT  
SiC MOSFET

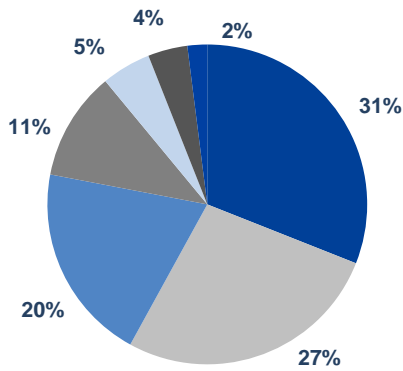




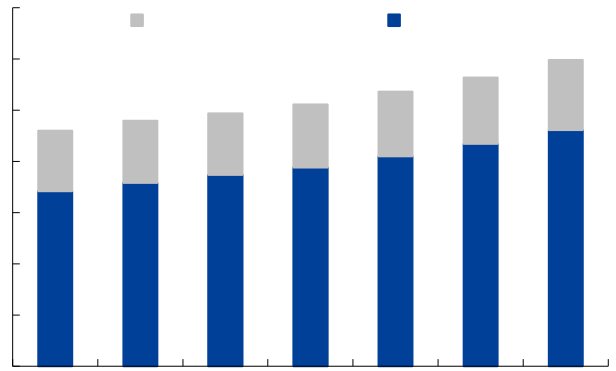
**IGBT**

IGBT  
 31% HIS Markit 2018 IGBT  
 IGBT 2017 50 IGBT 2020-2025 47.9 Yole 2019  
 CAGR 5%

2018 IGBT



IGBT



Yole

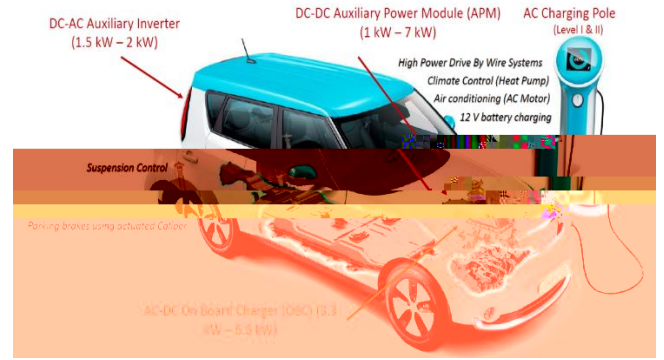
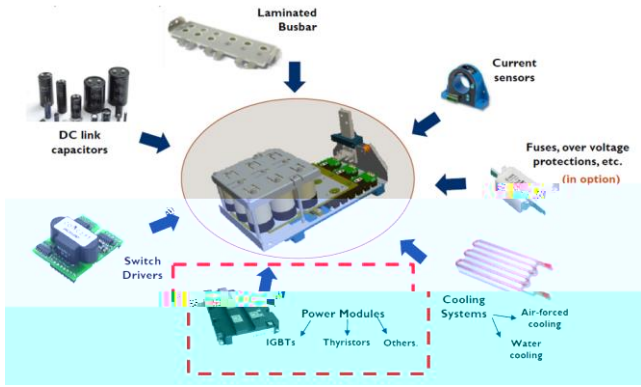
**IGBT**

50%

IGBT IGBT

IGBT

**IGBT**  
/ (DC/AC)



IGBT

36

IGBT

96

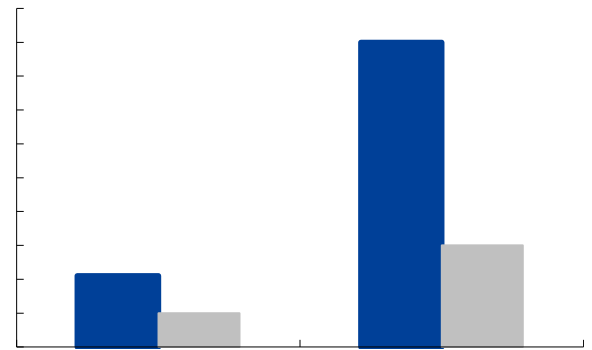
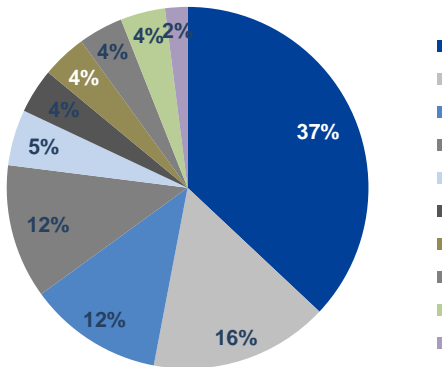
15~20%

40%

5%

IGBT  
Model X  
650

20%  
132 IGBT



Trendforce

IGBT  
2018-2025 8  
IGBT

MOSFET

MOSFET

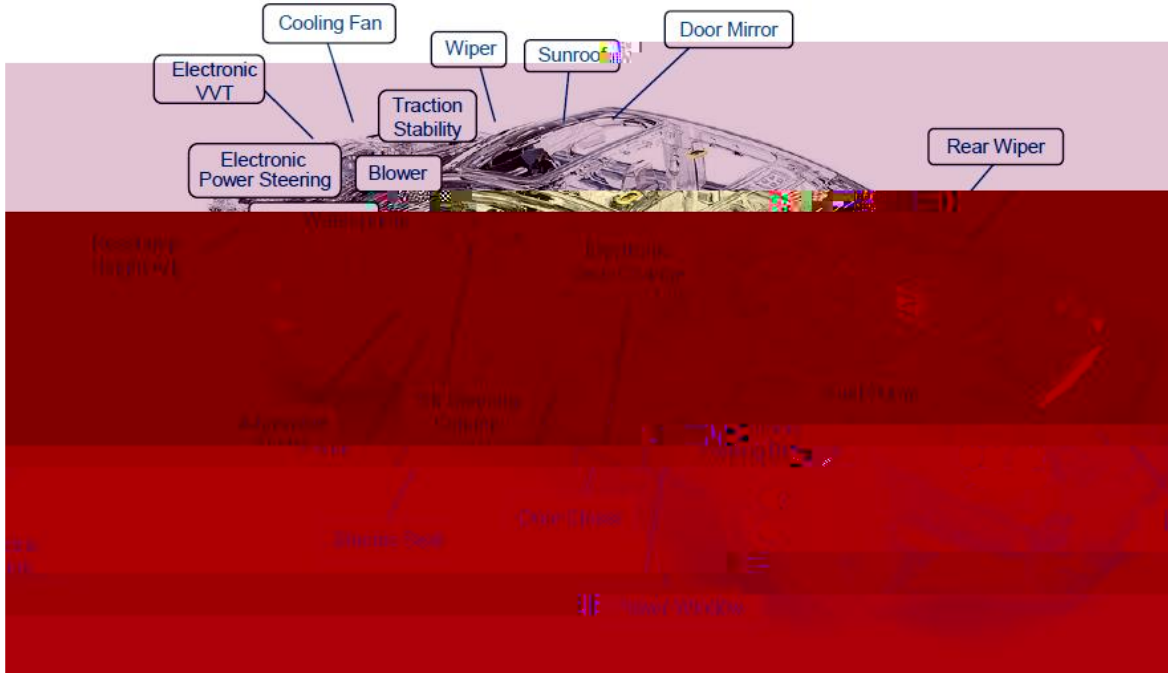
IGBT  
2025 100  
900  
8

IGBT MOSFET

IGBT  
MOSFET

IGBT 1000V 350A

Trendforce  
2025 210  
300

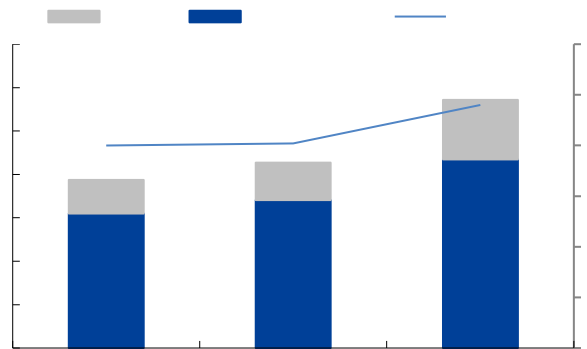
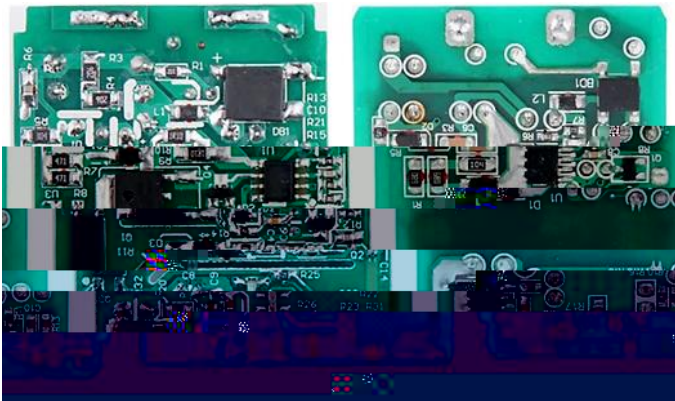


Didodes

### 2.3

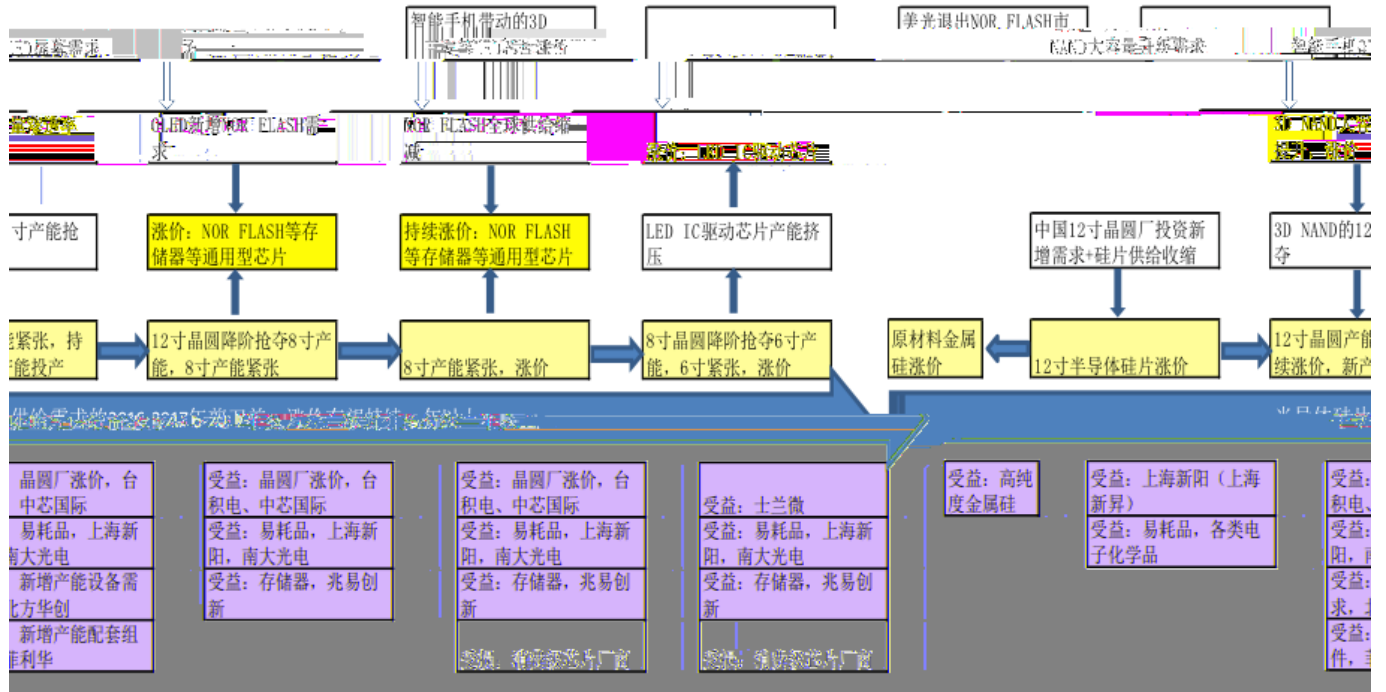
#### MOSFET

			iPhone 12	
20%	BCC Research	2017		85.49
		2022	27.4	24%
	MOSFET	MOS		
	MOS		MOS	

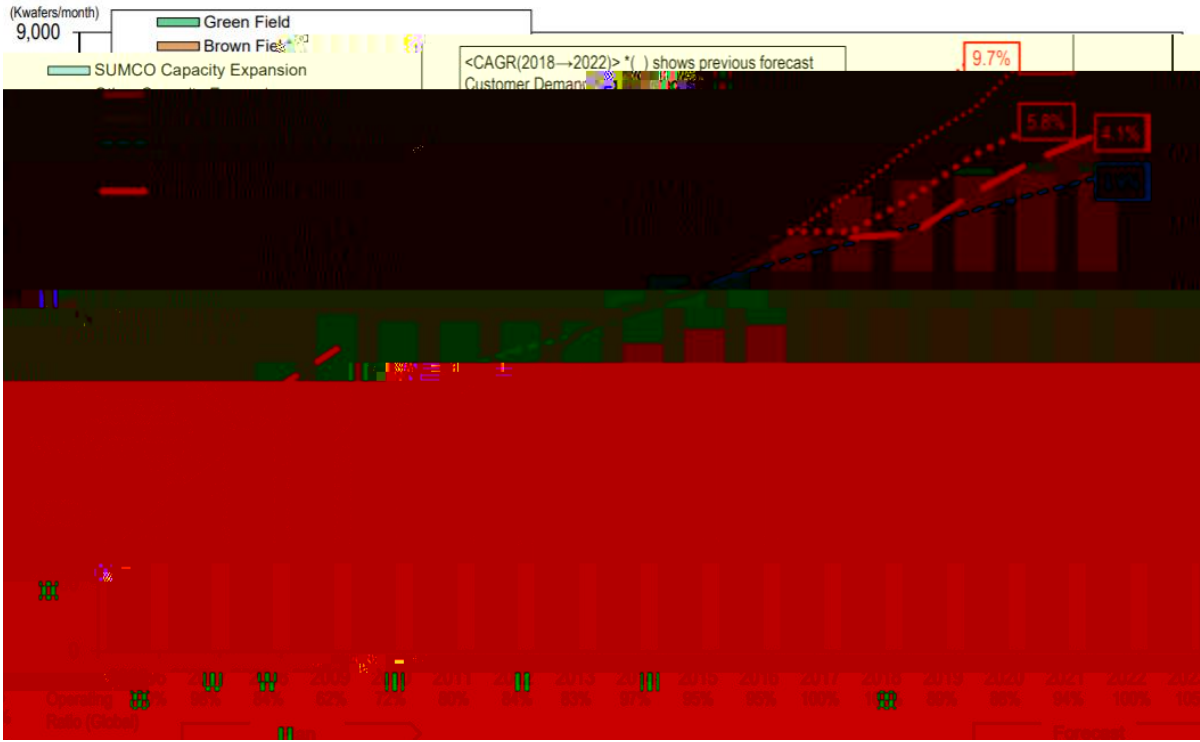


15%-30%





	12		2020					
		12	2001				SUMCO	2019
	12	602	/	12				DRAM
EXCHANGE	190	2019	DRAM	120	/	NAND		
	/		12		2023	200	/	



SUMCO

8

8

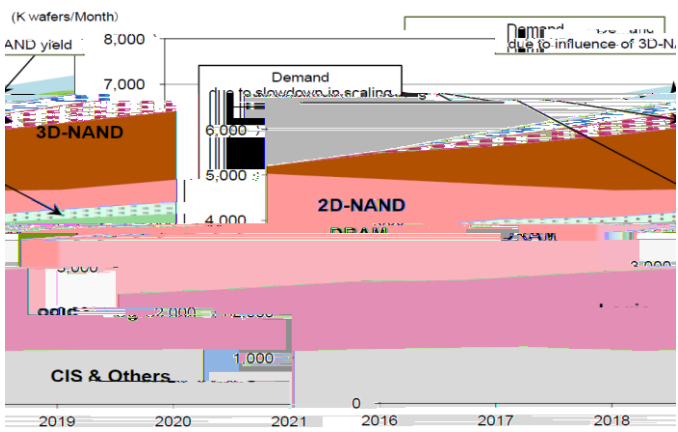
CIS PMIC Nor Flash

IC  
MEMS

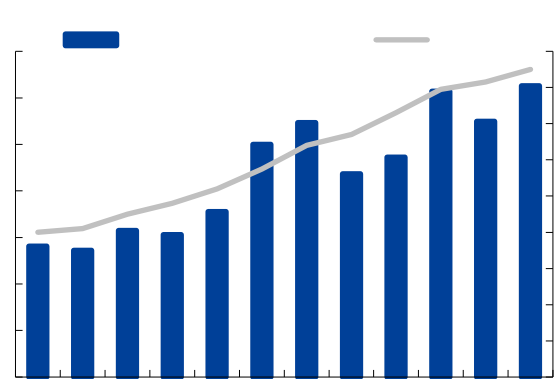
59 12

60 12

2020-2023



Semico



AnySilicon

8

6

12

8

MEMS

1990 2007

8

12

201  
IC Insights

12

8

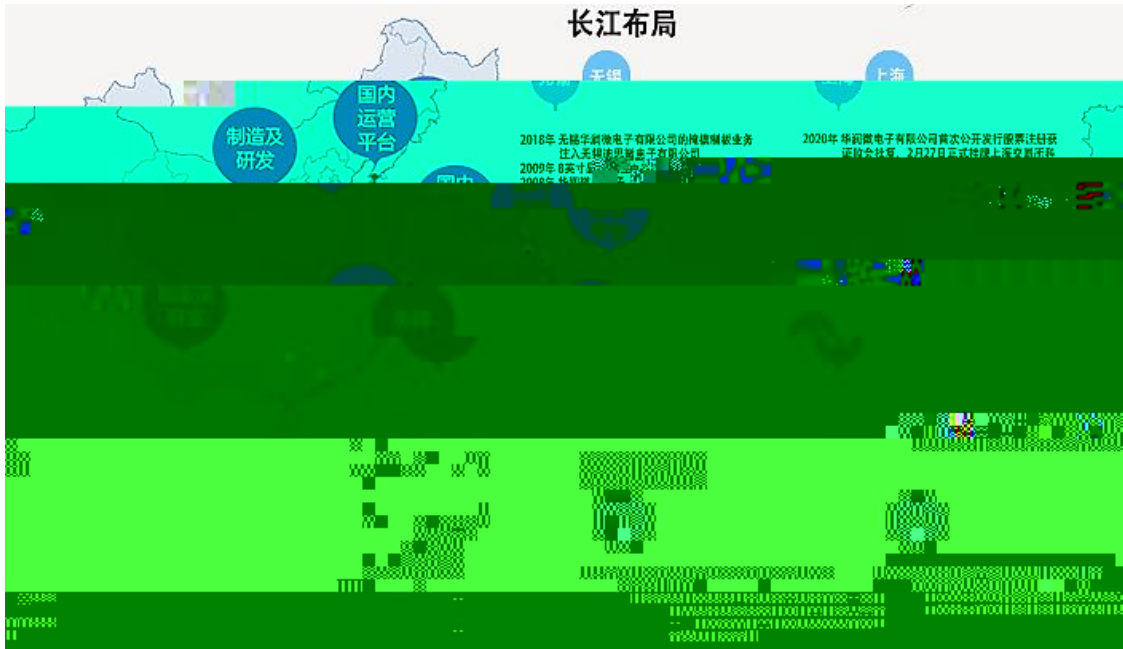
2009-2017

12





## 4.2



12

8



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**PE-TTM**

**PB**

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