

688396

+

68.98

+

“ + ”

12

MOSFET

MOSFET

IGBT

MOS

12

PMIC

MOS

-100V MOS

1500V

6

PMIC

2017-2018

“ + ”

12

2020-2022

9.77/12.10/14.38

“ ”

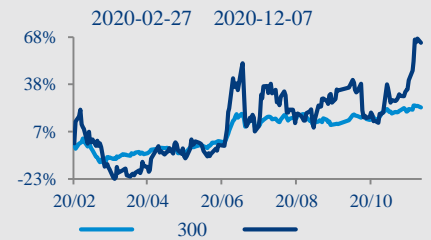
0755-82755859

gengchen@hcyjs.com

S0360517100004

()	121,593
()	24,904
()	838.75
()	171.79
(%)	32.0
()	8.4
12 /	74.89/31.74

(12)



	2019A	2020E	2021E	2022E
()	5,743	7,083	8,637	9,995
(%)	-8.4%	23.3%	21.9%	15.7%
()	400	977	1,210	1,438
(%)	-6.7%	143.7%	23.9%	18.8%
()	0.33	0.80	1.00	1.18
()	143	82	66	56
()	11	13	11	9

2020 12 7

“IDM+ ”
2017-2018

“IDM+ ”
IDM
MOS

2017-2018

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IDM+	7
	7
IDM		

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63				30
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68	2016-2019	ASP	32
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71	2016-2019	EBITDA	32.4()F3
72	2013-2022	8	/	33
40	1W*149.....3 10.....		(.)51.13.....3.10.....33.....
74	2018-2024		34
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77	2020		34

IDM+

3

IC

IC

AC-DC LED

MOSFET IGBT

MEMS

MCU

1

		/						
					MOSFET IGBT			
					IPM	IPM		
		IC	AC-DC	LED	IC	BMS IC	IC IC	
			MEMS					
					MCU	MCU	MCU	
			CMOS/ANALOG	BICMOS	RF/Mixed-Signal	CMOS	BCD	
			MEMS					
			IPM	Copper Clip				
			0.18μm	Stepper	0.13μm	3"x5" UT		
		1:1 Array						

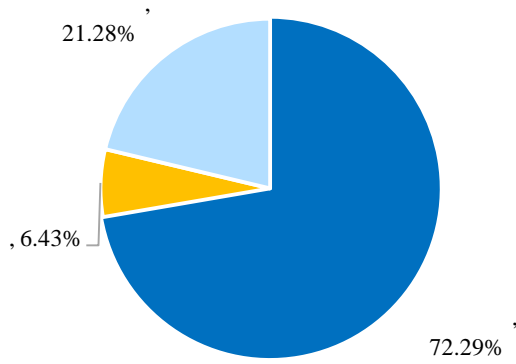
20Q3

72.29%

6.43%

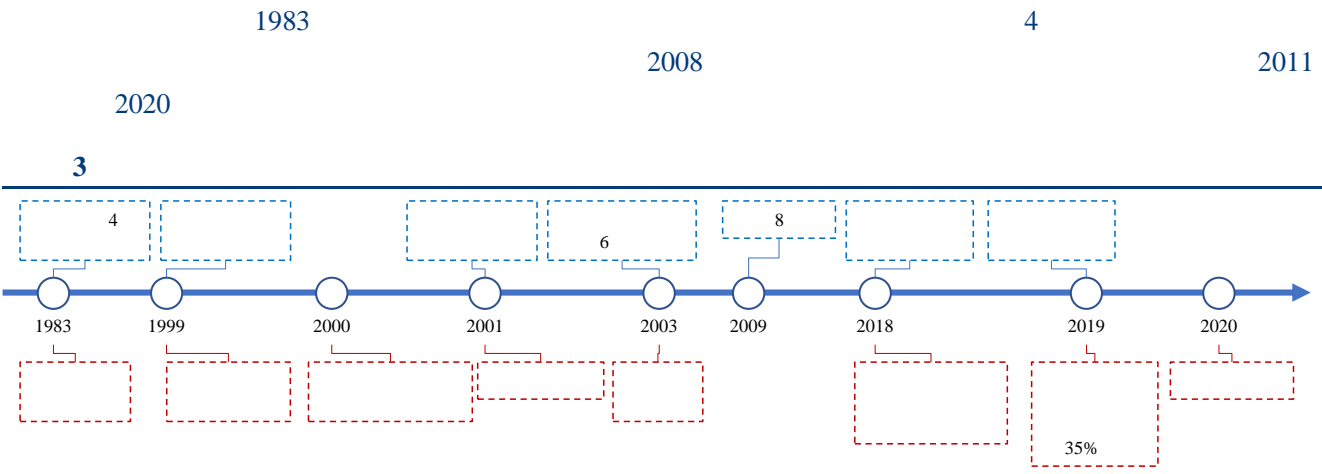
1%

2



Wind

3



4

						2018
	3 6				Analog BCD MEMS DMOS Power Discrete	247
	1 8				Advance BCD Analog DMOS	73
	1 8				MOS MOS MOS	

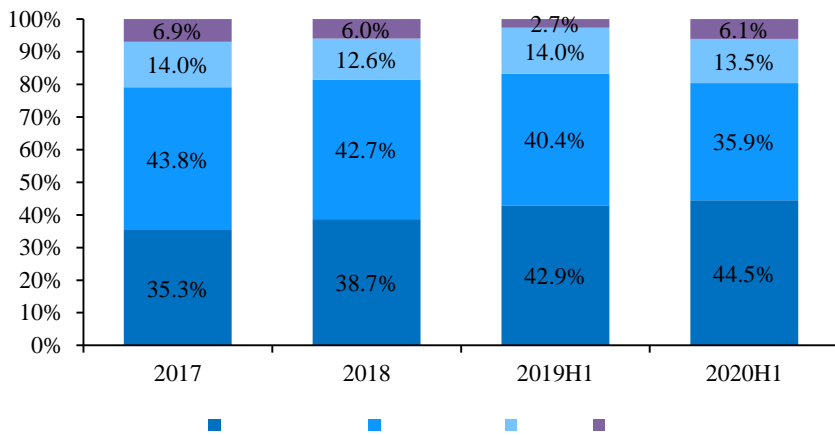
			SBD		60			
8		8	BCD	8	MEMS	19.2		
SiC 6		SiC JBS		MOSFET				
12		MOSFET		IGBT		3 /		
						199		
		QFP	QFN	PQFN	FC-QFN	TSSOP	SSOP	62
				MSOP	IPM			69
								2.4

IDM

IDM

44.94% 14pct 2016 30.52% 20H1

5 2017-2020H1



Wind

1. IDM

IDM

IDM

IDM

6 2018 Top10

	2018
1	21.7
2	18.5
3	17.1
4	8.1
5	7.7
6	7.2
7	6.9
8	6.0
9	5.4
10	4.9

MOSFET

6

MOSFET

2018
2018

MOSFET

16

8.7%

MOSFET

24.19

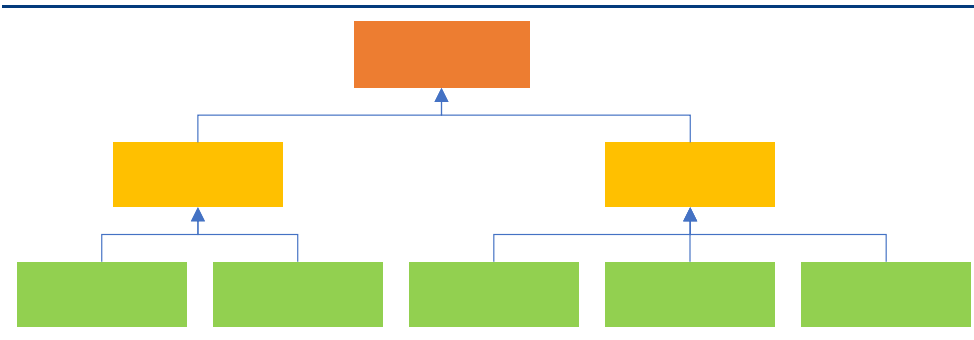
MOSFET

66%

IC

IC

7



21% IGBT
SiC
1200V

UPS
2020
SiC

20H1

50%

22%

MOSFET

2.

65.3%

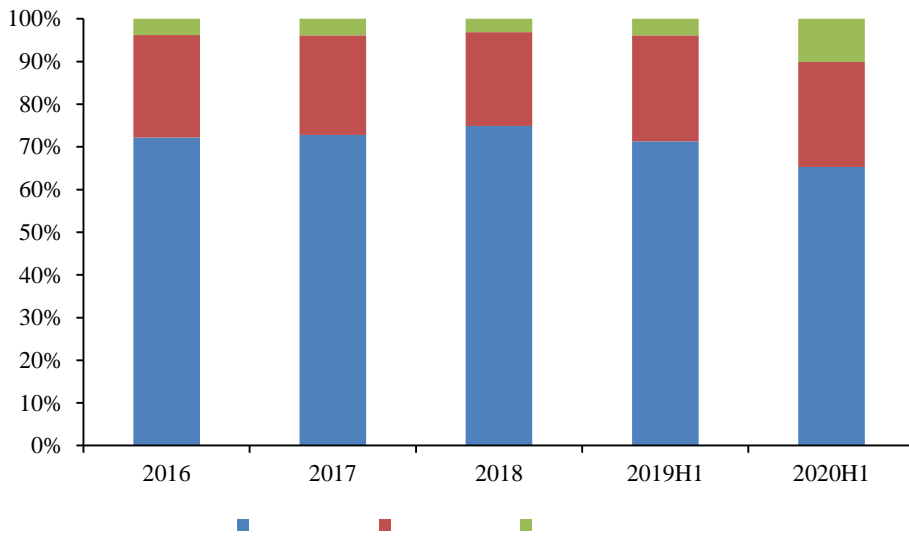
24.6%

6 2020H1

3%-4%

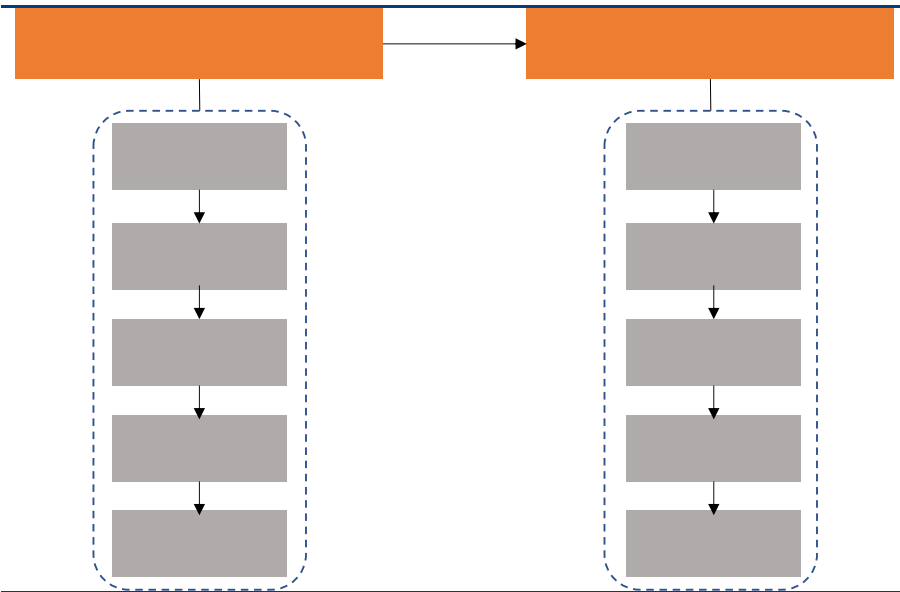
10.95

8



Wind

9



CMOS/ANALOG

BICMOS

RF/Mixed-Signal CMOS

BCD

MEMS

0.11μm

0.18μm

0.25μm

0.35μm

0.5μm

0.5μm

BCD

BCD

BCD

CMOS

0.18μm BCD

CMOS

DMOS

MOSFET

IGBT

8

6.5

6

20

2018

10

turn-key

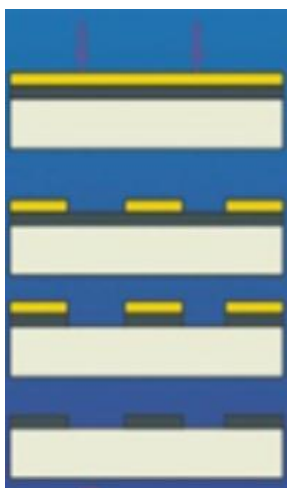


IC

2018

27%

11



12

	TCL

8:2 17% 2019H1 2016-2020H1
 40.49%

13 2016-2020H1

Wind

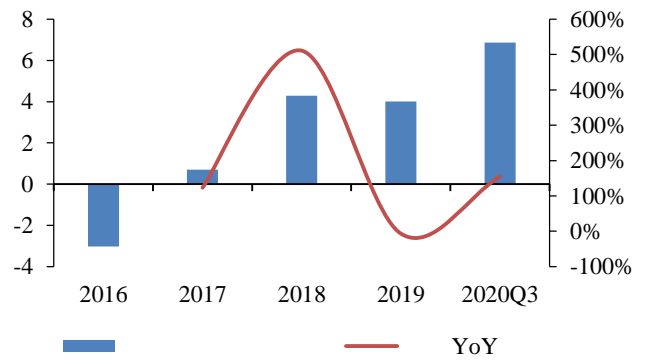
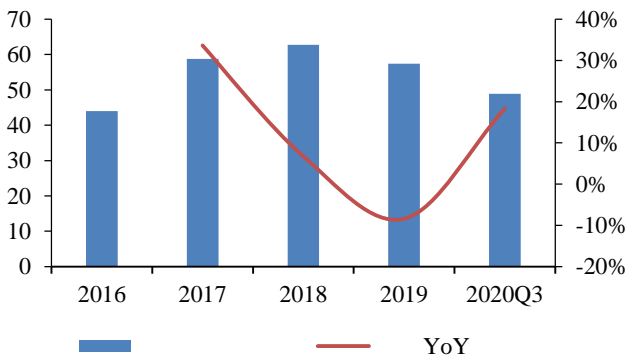
14 2019H1 Top5

MPS	14.43%

9.3% CAGR 6.5% 8.7% 2019
 8% 2019H1 2020 2018 12.16%
 18% 2017 2016 -3.03 49
 2015-2016 2016 9 10 2017
 0.7 2018 500% 4 2020
 6.87 155%

15 2016

16 2016

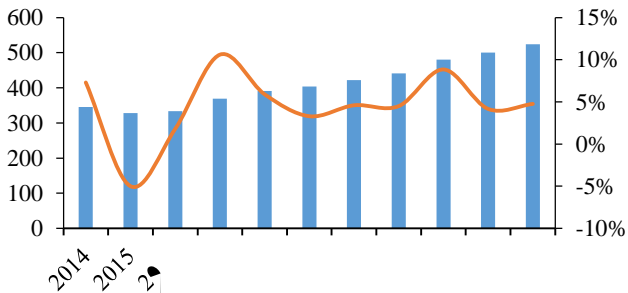


Wind

Wind

17 2014-2024

18 2015-2021



IHS Markit

IDM
 20H1 97.5% 78.5%

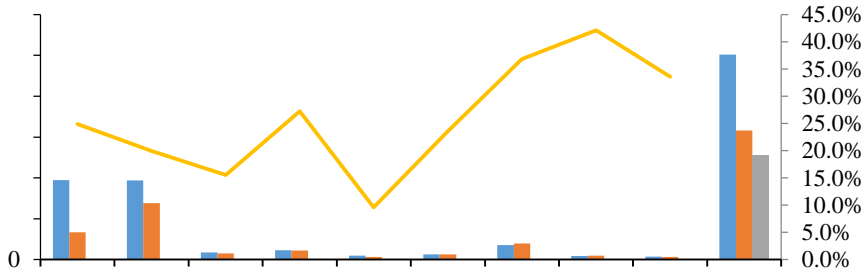
		2003
		2000
		1990

2020

2009 8 2017 2017 8 2016-2020H1 2020H1
 9.06 13.09 9.15 6.62 3.18 2017 2017 22.3% 2020H1
 10.4% 17.6% 27.3% 2017 4
 52.41% 3.8 0.7

22 2017-2019

2018



2019

2019

23 2016-2020H1

24 2016-2020H1

Wind

Wind

8

23

8 BCD
2018 9

2.75

8 MEMS
2021 5

23.11

25 8

	46788	3.80%	1777.9
	129540	12.25%	15868.7
	39694	9.80%	3890.0
	15122		
	231144	9.32%	21536.6

2020

ASP
MOSFET IGBT

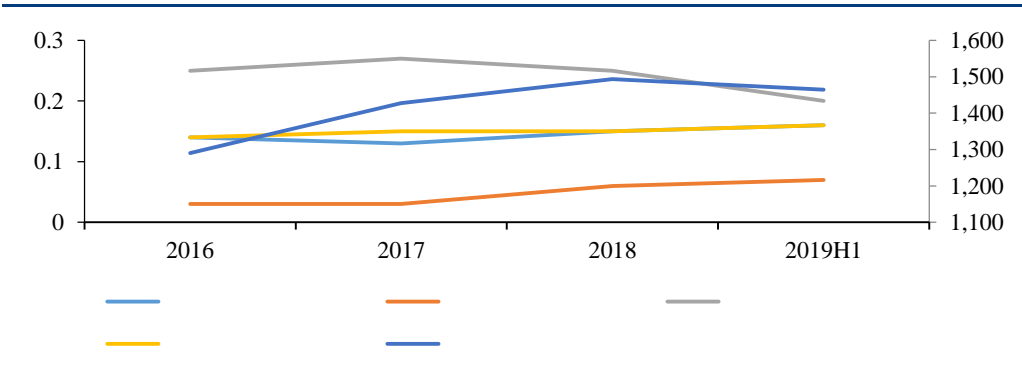
2016

ASP 0.14

2019H1 0.16

ASP 1290 1465
ASP

26 2016-2019H1 ASP



2020

Wind

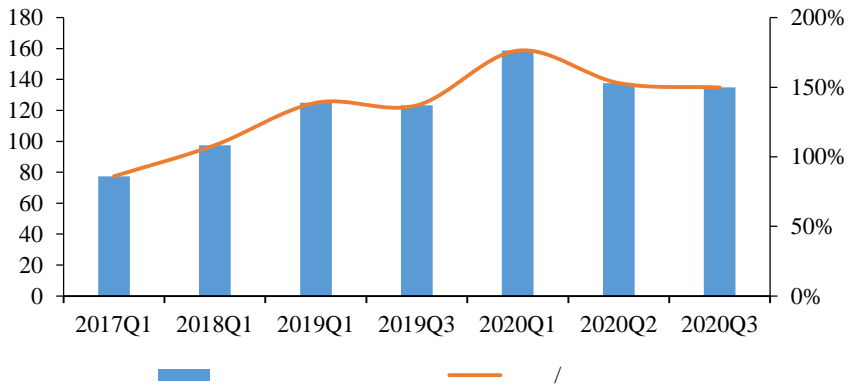
2020Q1

2017

/
3.3%

2019 2020H1

27 2016-2019H1

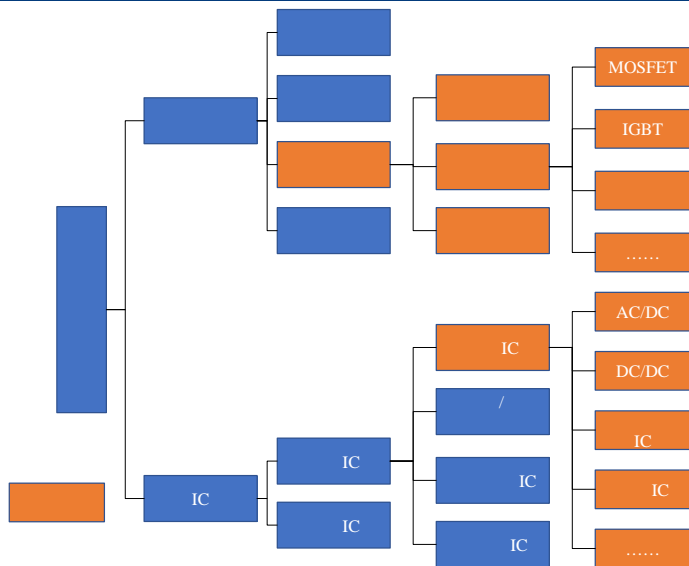


Wind

2020



28



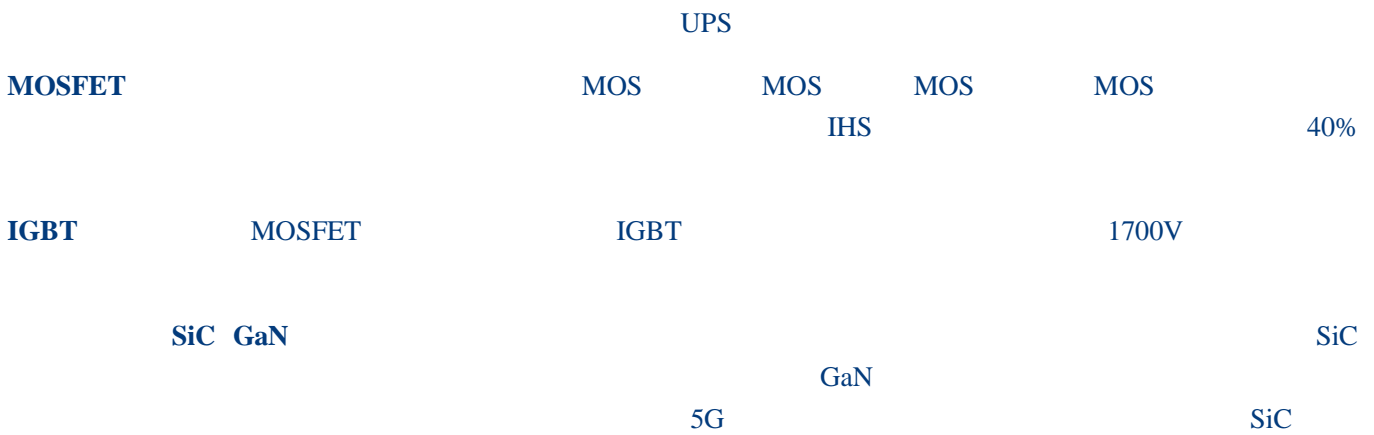
MOSFET IGBT

SBD

FRD

SBD

FRD

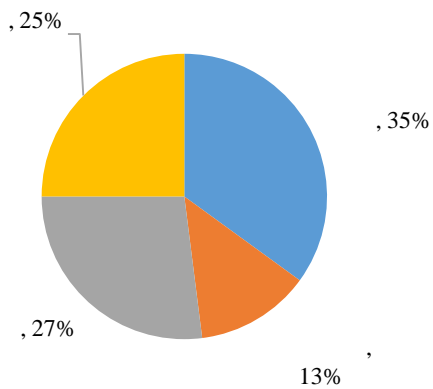


1.

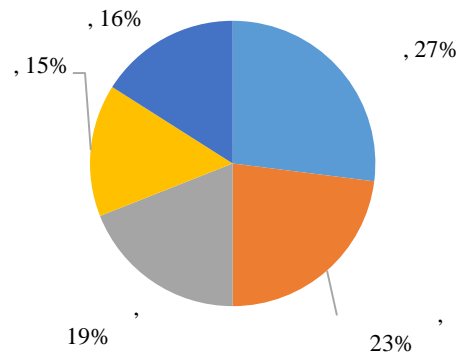
500

5G

29 2019



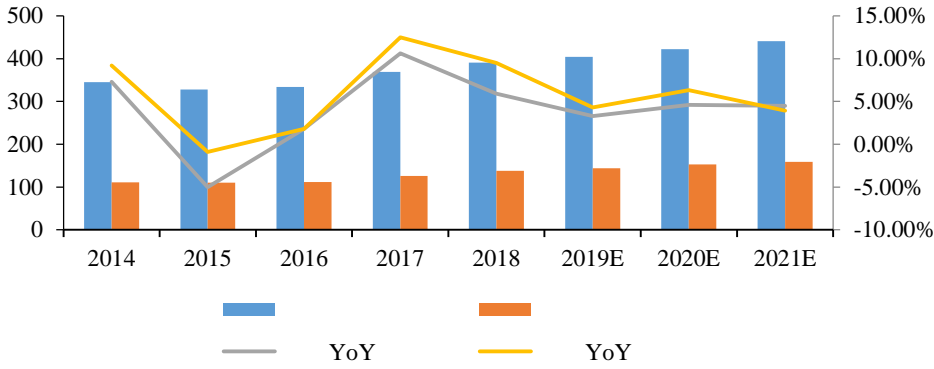
30 2019



404 Omida 2018
500 2024
138 2021

524 IHS Markit 2019
159 2019
9.5% 5.3%
35% 4.8%

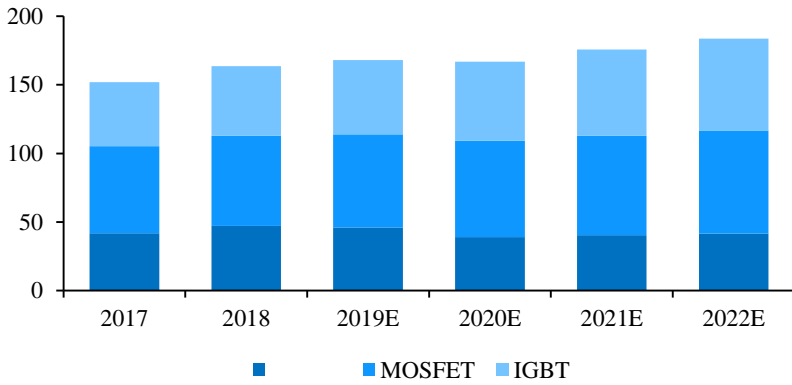
31 2014-2021



IHS Markit

MOSFET		IGBT		60	
IC Insights					
MOSFET	IGBT	MOSFET	IGBT	2019	68
75		58		2022	67
		IGBT2020			

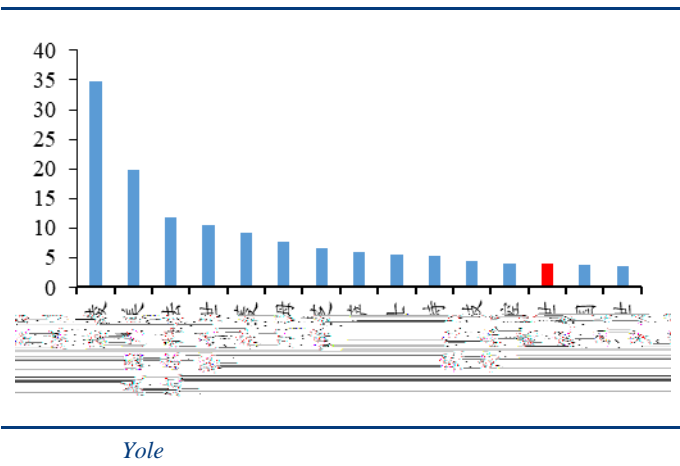
32 2017-2022 MOSFET IGBT



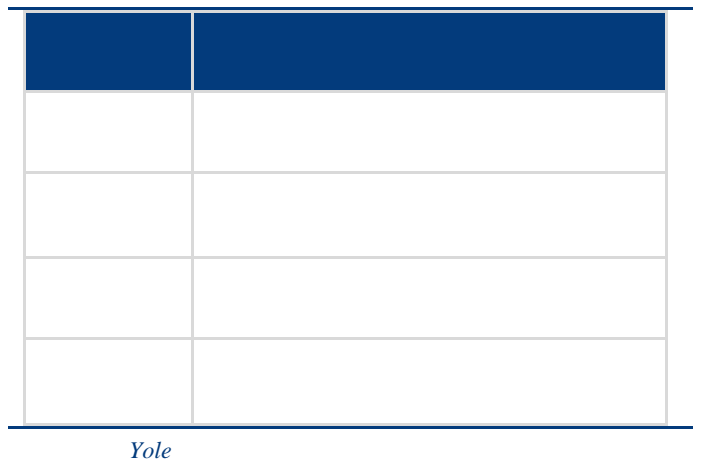
2.

Top10		35		Yole		2019	
&		Top15		4	5	20	5
12							1
2019							

33 To15 &



34

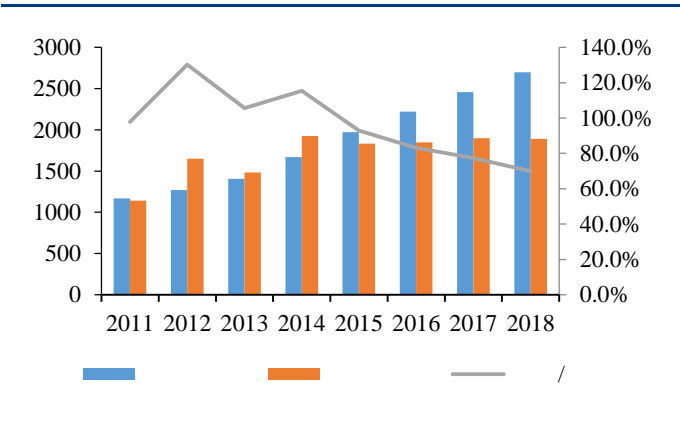


1970
2016-2018
2025
3000

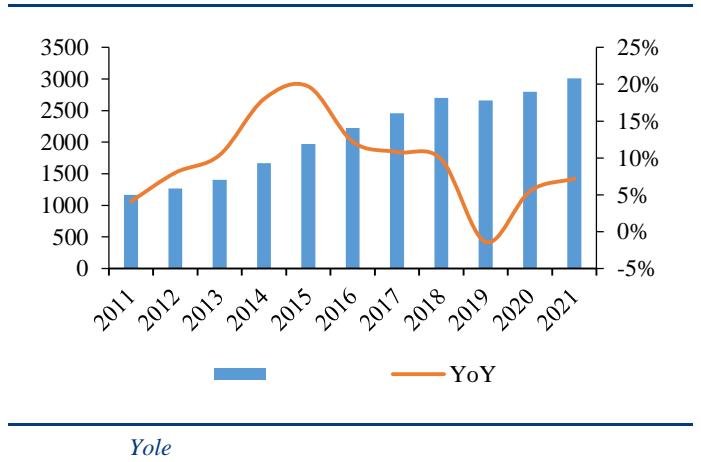
1832
83% 77% 70%
50%

2015
93%
2017
50%
1500

35 2011-2018



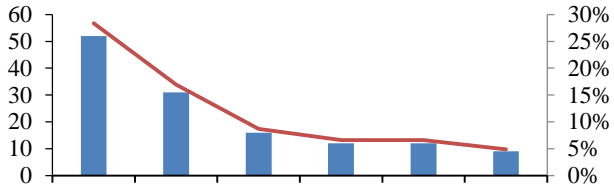
36 2011-2021



MOSFET 52 28.4%
MOSFET 16 8.7%
72.1%

IHS Markit 2018
16.9% 45.3%
Top6 CR6

37 2018 MOSFET



IHS Markit

IGBT

38 2018 MOSFET

IHS Markit

IHS Markit 2018	IGBT	75%
IGBT	90%	

39 2017 IGBT

IGBT

IDM

IDM

40 IGBT

SITRI

5G

5G

900

Yole	2017	-2023	IGBT	MOSFET			
					300	2025	150
	2023				440	2022	900

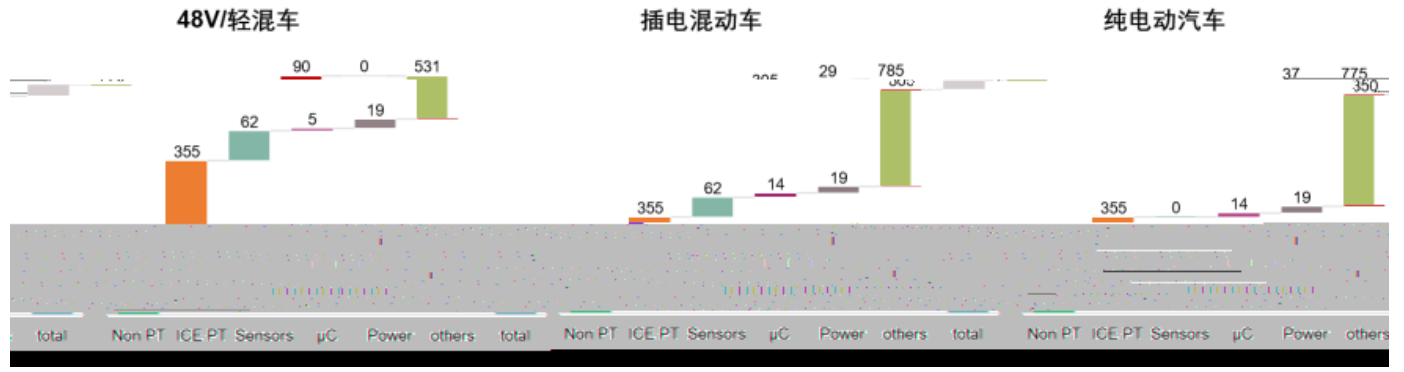
41 2017-2023 MOSFET IGBT

Yole

1.				300			
		17			90		305
360							

42

265



MOSFET&IGBT
2025

MOSFET&IGBT

300

MOSFET
210

2022

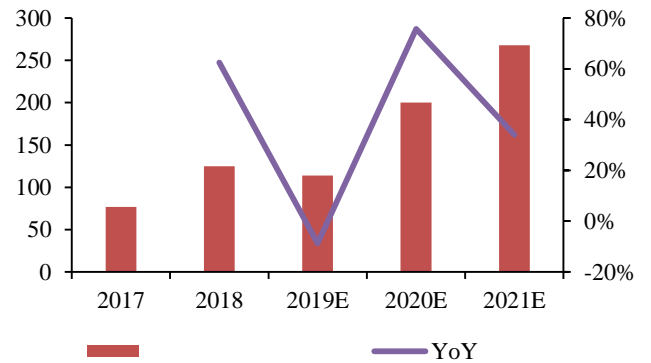
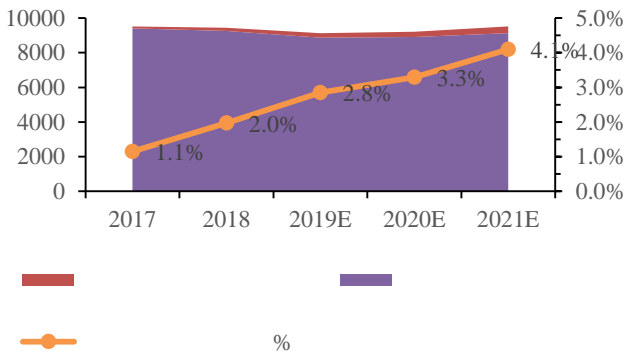
116

IGBT

IGBT
310

43 2017-2021

44 2017-2021

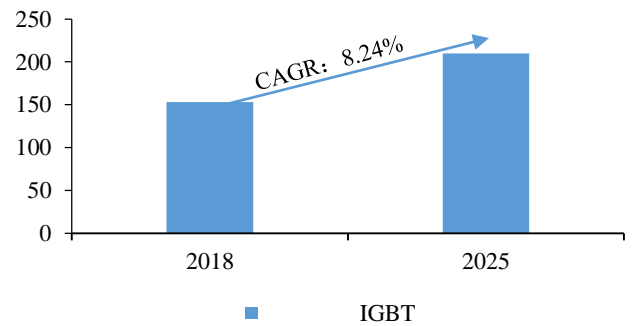
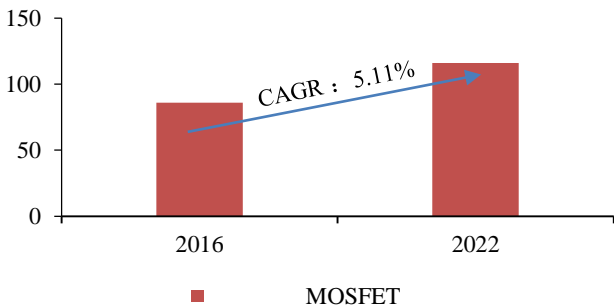


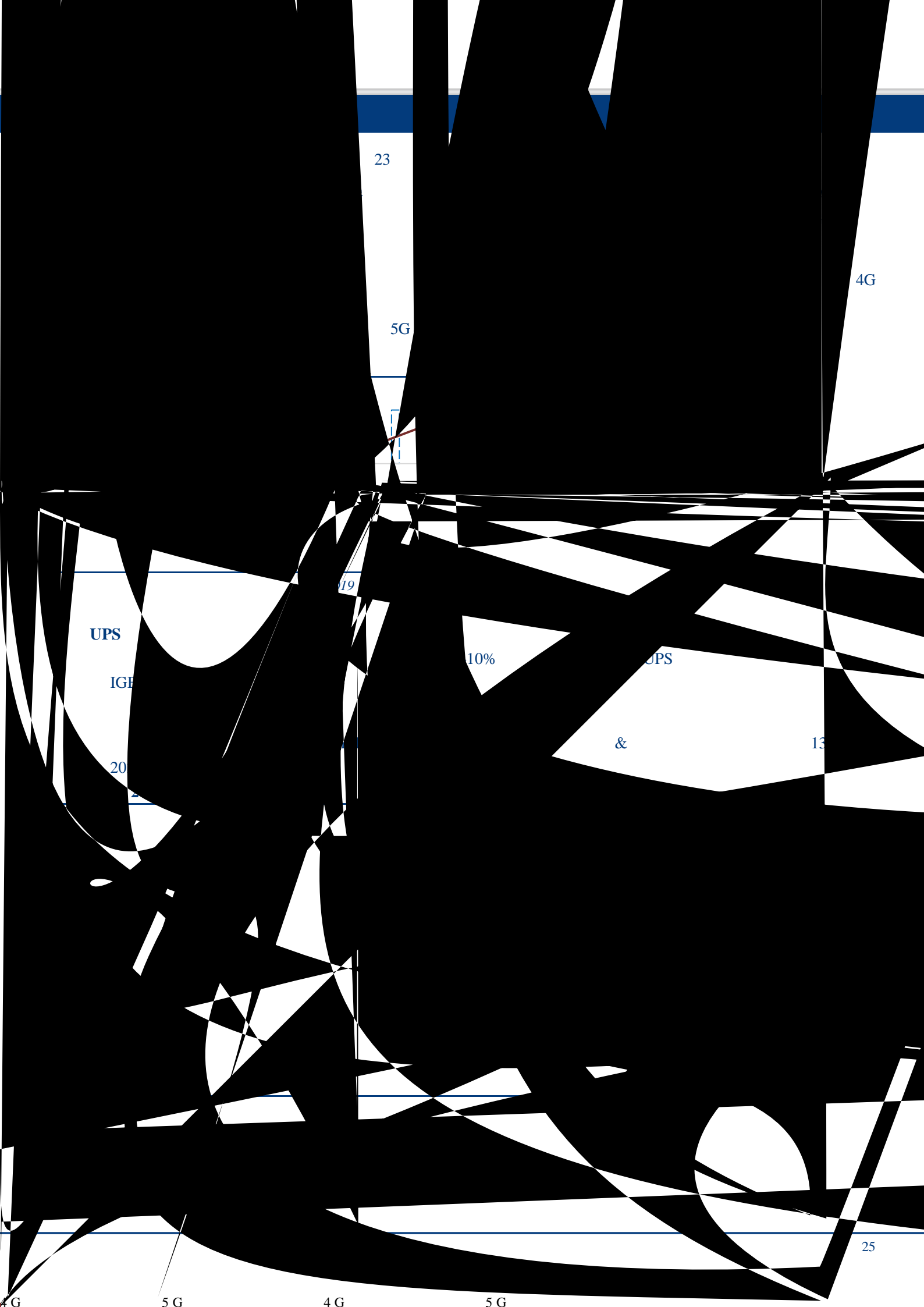
Bloomberg NEF marklines

45 MOSFET

46 2025

IGBT





23

4G

5G

19

UPS

10%

UPS

IGF

&

13

20

25

4G

5G

4G

5G

1. 2017

2017-2018 8

2016 20.6% 14.6%
5.0% 11.5% 2016-2018 8

8
2017-2018 7.6% 7.1%
CAGR 32% 20%

53 2016-2018

8

/

54 2015-2018

/

SUMCO

Wind

1 8

20

,2018 92%,
50%

28%

IC insights
26%

55

IC insights

2017 8

3% 2018Q1

2017 8
10% 8

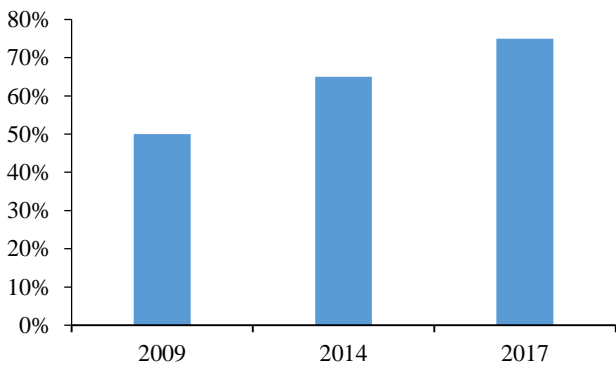
Q1

90%	2017	8	2016	8		
		44%				
56	2007-2019	8	\$/	57	2016-2017	8

1 8	10			2007	8		
	2007	8	1.4 /	2017		43%	
		8		8			
SEMI	2008-2018			2008	8	200mm	35%
	2018	25%					
58	2007-2018	8		59	2008-2018		

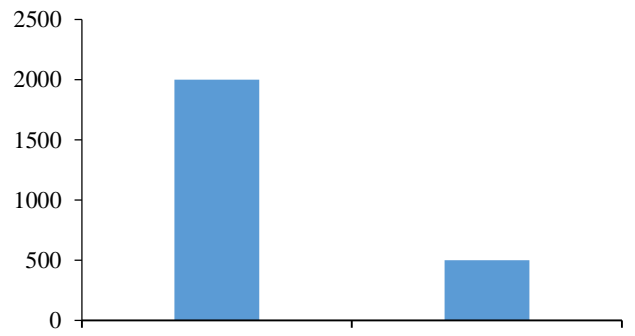
8
8
12 75% VLSI research 20 90 2000 2017
8 9 8 12 8 116
Surplus Global 2017 8
3 5 2018 2018 8 2000
500 8 8

60 2009-2017 12



IC Insights

61 2018 8



Surplus Global

2

IC MCU 8 3 8 CIS
8 2016
20% CIS 2017-2018 CIS CIS 2017 10 12 33%

62

%

63

Yole Frost&Sullivan,

ADAS

8

65%

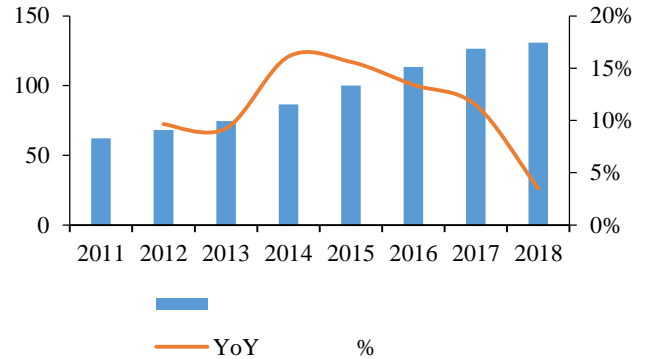
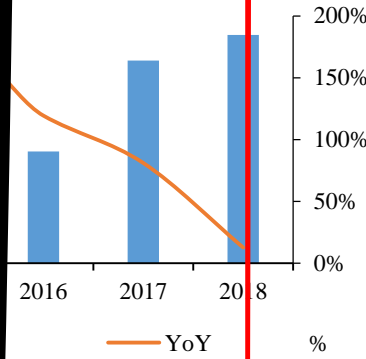
15% 2017-2018

53% 62%

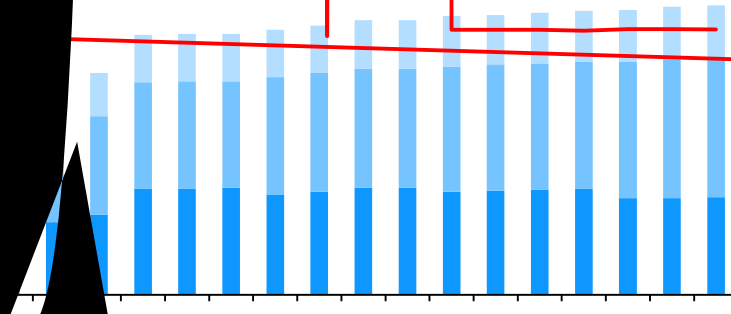
64 2016-2019

IGBT

66 2011-2018



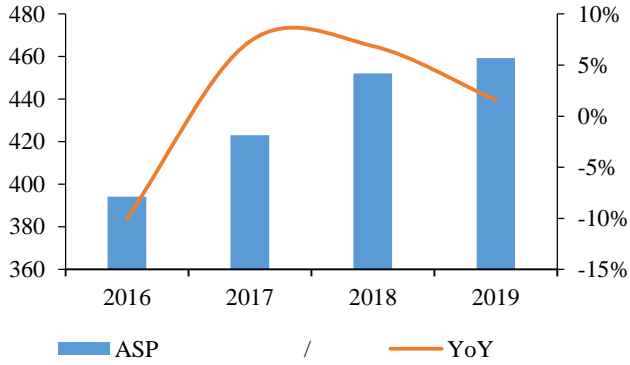
2017 Q3	8	/	SUMCO 2016 Q4	8
2017Q2	540	/	2016Q4	12.7%
SEMI 2021	8		550	/
			2017	525



ASP
17-2019
ASP

68 2016-2019

ASP



Wind

69 2016-2019H1

ASP

Tf 61/L

2016
33.1%
2017-2018

2016 2019

30%

2017-2018

2016 2019

70 2016-2019

71 2016-2019

EBITDA

Wind

2. 2020

1 8

8

2018

15

8

SK

8

SEMI

2019-2022

16 8

14

70

2019-2022

CAGR

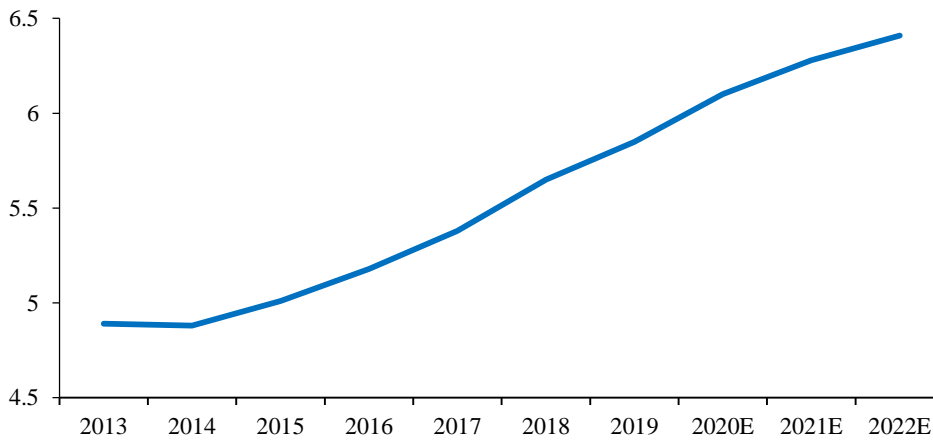
4.5%

2016

72 2013-2022

8

/



SEMI

2020

IDM

7

2020 HI

IDM

73

Beyond Borders: Semiconductors are a Uniquely Global Industry

Typical semiconductor production process spans multiple countries: 4+ Countries, 4+ States, 3+ trips around the world, 25,000 miles travelled, 100 days TPT, 12 days in transit



SIA

2

5G

2017

2020

CINNO Research 2020

40%

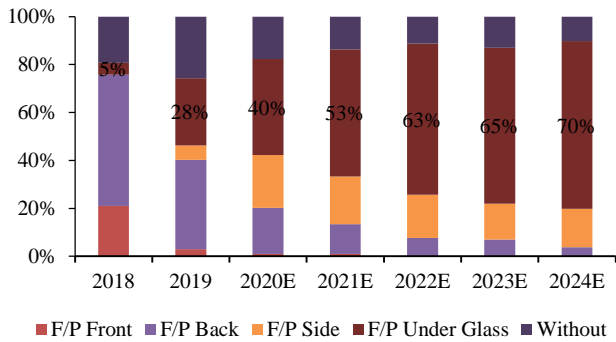
Counterpoint 2020Q1

3.5

8

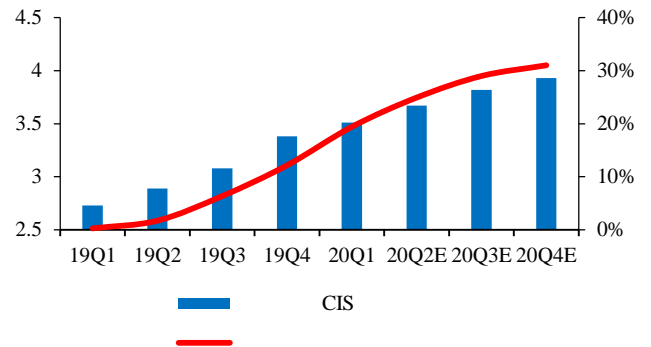
CIS

74 2018-2024



CINNO Research

75 2019Q1-2020Q4



199IT

5G

5G 4G Tom's Guide iPhone12 5G 4G 2

21% 130 MOSFET BCC Research 2020

5G Massive MIMO

4G 1 100 5G 4 5G UPS

IGBT SCR

NB/PAD

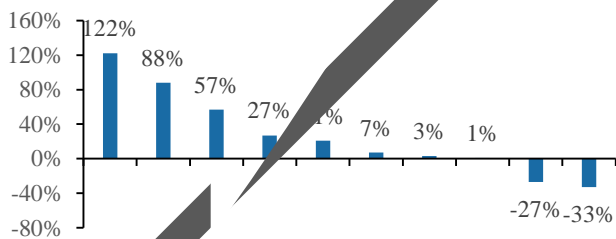
NB/PAD Canalys PC 2020Q2-Q3

Q3 1.245 23% 88% 57%

10.9pct

2020 7 52.5% 19.3% 9-10 65%

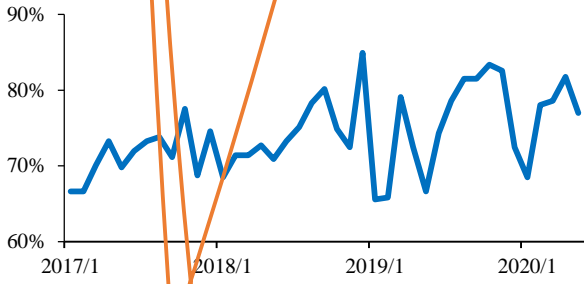
76 2020Q3 PC



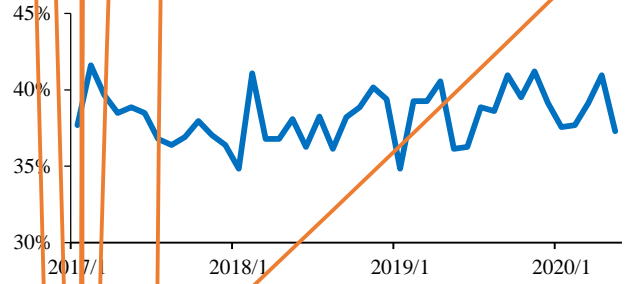
199IT

77 2020

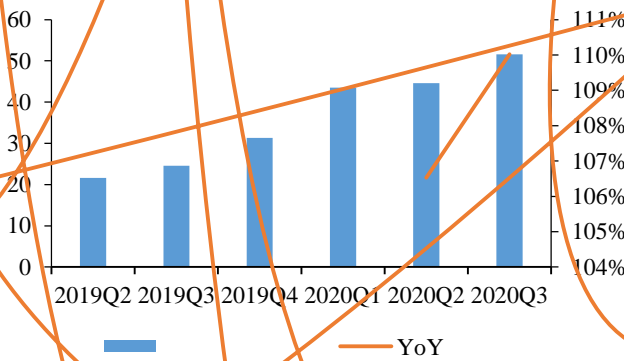
21%
78 2017-20H1



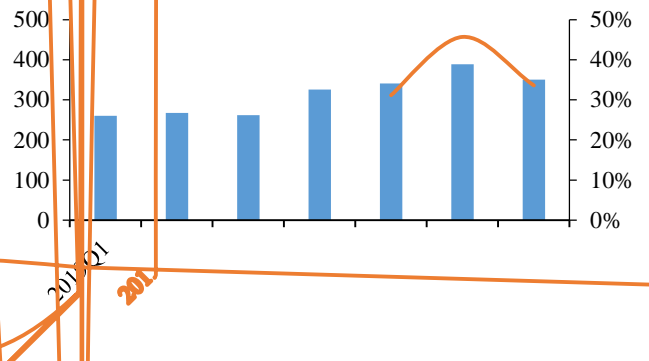
20H1 2019 11% 6
79 2017-20H1



80 2019Q2-2020Q3



81 2019Q2-2020Q3



Wind

Wind

3 2020

8

IC MOSFET

8

8

IC

3D sensing

DIGITIMES

10-20%

5G

20H2

12

20Q3

MOS

IDM+

8

IC

know-how

IC

IC

20Q2 2019 51.7% 8 100 / 12 17.8 / 1:1 2019 8 2019 8 11 / 8 2019 8 45.7 / 22.8 / 8

94%

2017-2018

2020

100% 2019H1

79%—

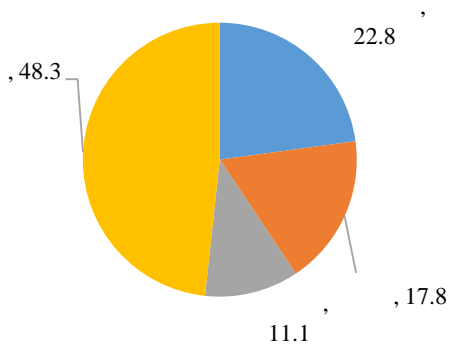
2016-2018

90%

82

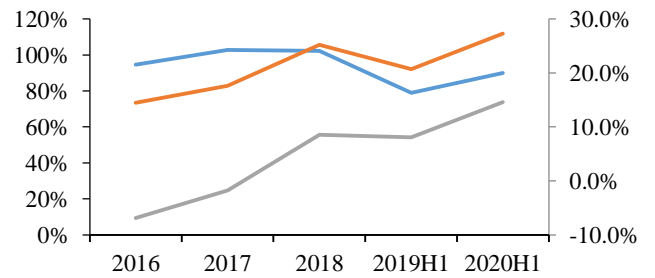
2019

8



2019

83 2016-2020H1



Wind

2020H1

90%

2020H1

8

12

2019 9

8

/ 12

8

2021

1.6

2020

12

84 2020H1

	8	20H1		1.6
	12			
	12	2019 9		4
	8	20H1	1.5	2.1
	8	20H1		8

2020H1

SEMI 2019-2022 CAGR 4.5% IHS 16 8
 Omida 2019-2024 CAGR 5.3% IHS 16 8

IDM+

IDM

Fabless

50%

IDM

“Fabless+Foundry”

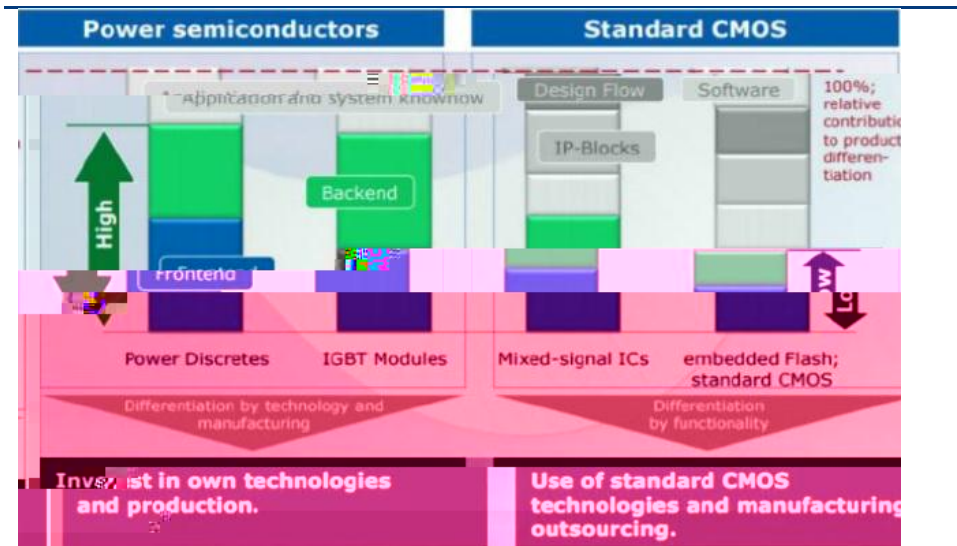
Fabless

IDM

Fabless

85

IC



IDM

Fabless

MOSFET

IDM

IDM

Fabless

IDM

86 **IDM** **Fabless**

Wind

IDM+

IDM

Fabless

know-how

IDM

87

	/						
MOSFET	MOSFET						
	MOSFET						
	MOSFET						
		1500V	700V	800V		300V	500V
IGBT							
		SiC	GaN		650V GaN		SiC MOS

2020

2019A	2020E	2021E	2022E	2019A	2020E	2021E	2022E
1,931	2,169	3,184	4,723	5,743	7,083	8,637	9,995
191	580	628	671	4,431	5,082	6,203	7,282
815	886	1,044	1,211	66	82	100	100
52	60	73	85	112	131	157	172

&

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			010-63214683	guoyunlong@hcyjs.com
			010-66500867	liuyi@hcyjs.com
			010-63214683	dana@hcyjs.com
				cheyizhe@hcyjs.com
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021

(300)

6	20%		
6	10%	20%	
6		-10%	10%
6	10%	20%	
3-6			5%
3-6			-5% 5%
3-6			5%

“ ”