

688396

+

68.98

+

“ + ”

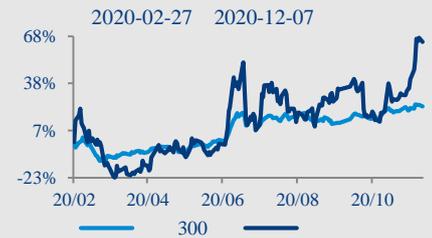
12

MOSFET MOS -100V MOS 1500V
MOS MOSFET IGBT 6
12
PMIC PMIC

0755-82755859
gengchen@hcyjs.com
S0360517100004

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

(12)



“ + ”
2017-2018

12

2020-2022

9.77/12.10/14.38

“ ”

	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

目 录

IDM+	.....	7
	.....	7
IDM		

图表目录

1	.....	7
2	.....	8
3	.....	8
4	.....	8
5	25 2017-2020H1	9
6	2018 Top10	10
7	.....	10
8	.....	11
9	.....	11
10	turn-key	12
11	.....	12
12	.....	13
13	2016-2020H1	13
14	2019H1 Top5	13
15	2016	14
16	2016	14
17	2014-2024	14
18	2015-2021	14
19	2020H1	15
20	2020H1	15
21	.....	15
22	2017-2019 2018	16
23	2016-2020H1	16
24	2016-2020H1	16
25	8	17
26	2016-2019H1 ASP	17
27	2016-2019H1	18
28		

34				21
35	2011-2018			21
36	2011-2021			21
37	2018	MOSFET		22
38	2018	MOSFET		22
39	2017	IGBT		22
40		IGBT		23
41	2017-2023	MOSFET	IGBT	23
42			265	24
43	2017-2021			24
44	2017-2021			24
45		MOSFET		24
46	2025		IGBT	24
47	5G			25
48	2017-2023			25
49	20W PD		MOS	26
50				26
51	2018		IPM	26
52				26
53	2016-2018		8 /	27
54	2015-2018		/	27
55				27
56	2007-2019	8	\$/	28
57	2016-2017	8		28
58	2007-2018	8		28
59	2008-2018			28
60	2009-2017	12		29
61	2018	8		29
62			%	30
63				30
64	2016-2019			30
65	2014-2018			31
66	2011-2018			31
67	2016Q1-2019Q4	8	/	31

68	2016-2019	ASP	.....	32
69	2016-2019H1	ASP	.....	32
70	2016-2019		.....	32
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
75	4Q10102020Q4....		.....	34
76	4Q20Q3 10.....PC.....		.....	4()F3.10.....34
77	2020		.....	34

IDM+

MEMS
IC
MEMS
MCU
IC
AC-DC LED
MOSFET IGBT

1

		/						
					MOSFET IGBT			
					IPM	IPM		
		IC	AC-DC	LED	IC	BMS IC	IC	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						

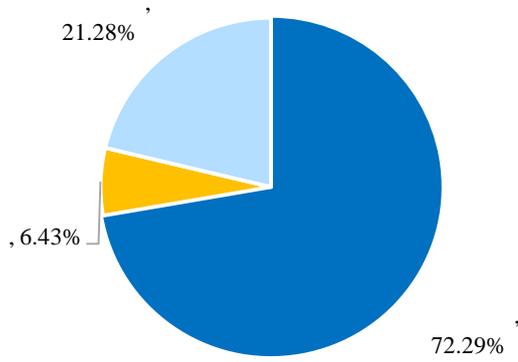
72.29%

20Q3

6.43%

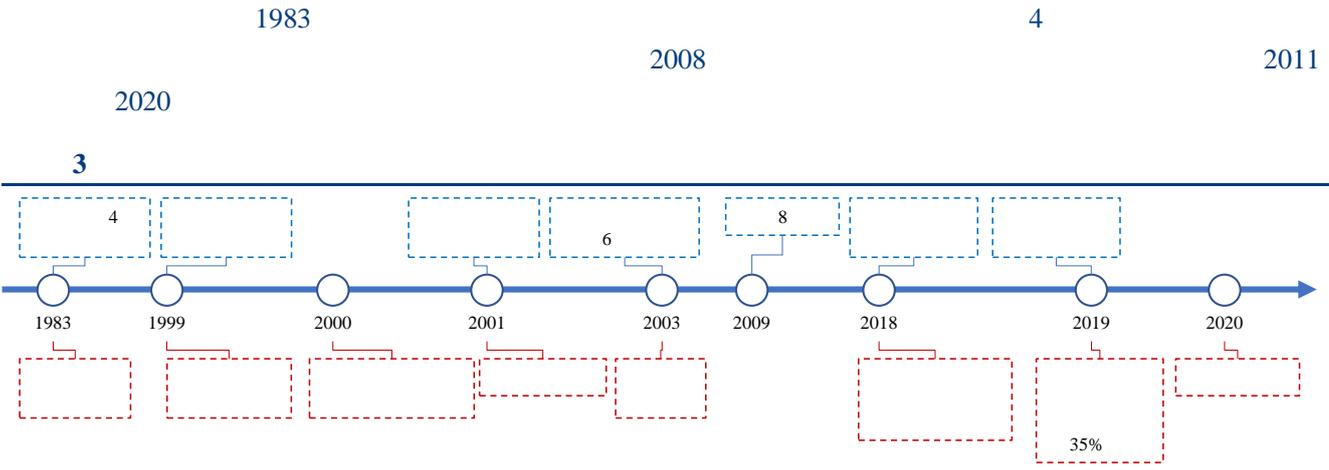
1%

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	

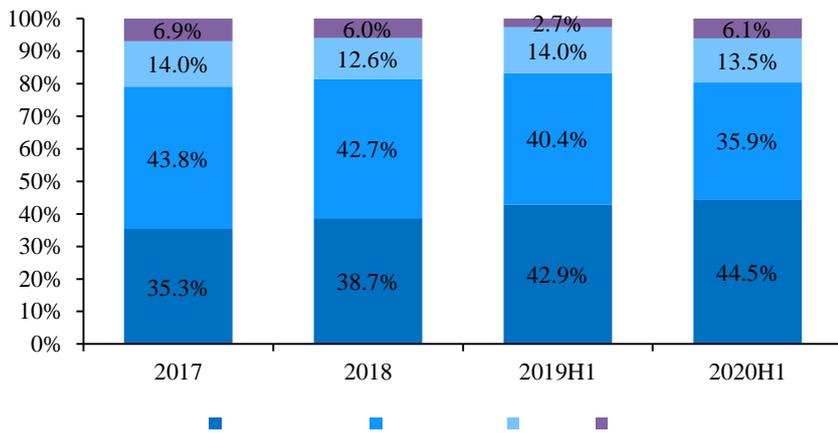
			SBD				60		
8			8	BCD	8	MEMS	19.2		
SiC 6			SiC JBS		MOSFET				
12			MOSFET		IGBT		3 /		
							199		
			QFP	QFN	PQFN	FC-QFN	TSSOP	SSOP	62
						MSOP	IPM		69
									2.4

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

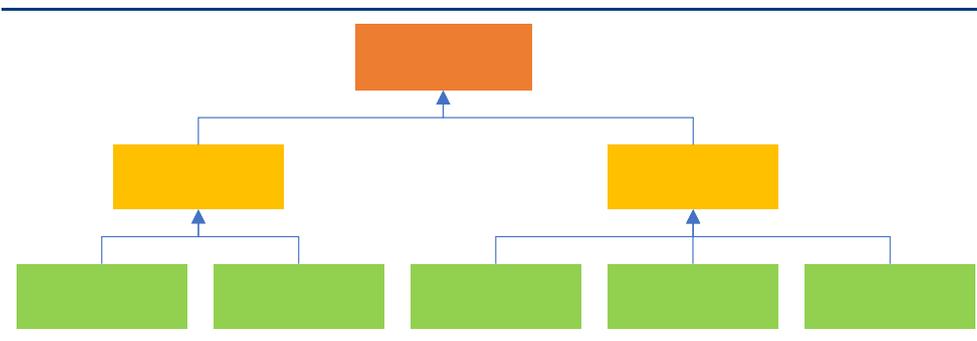
MOSFET

66%

IC

IC

7



21% IGBT
SiC
1200V

UPS
2020
SiC

20H1

50%

22%

MOSFET

2.

65.3%

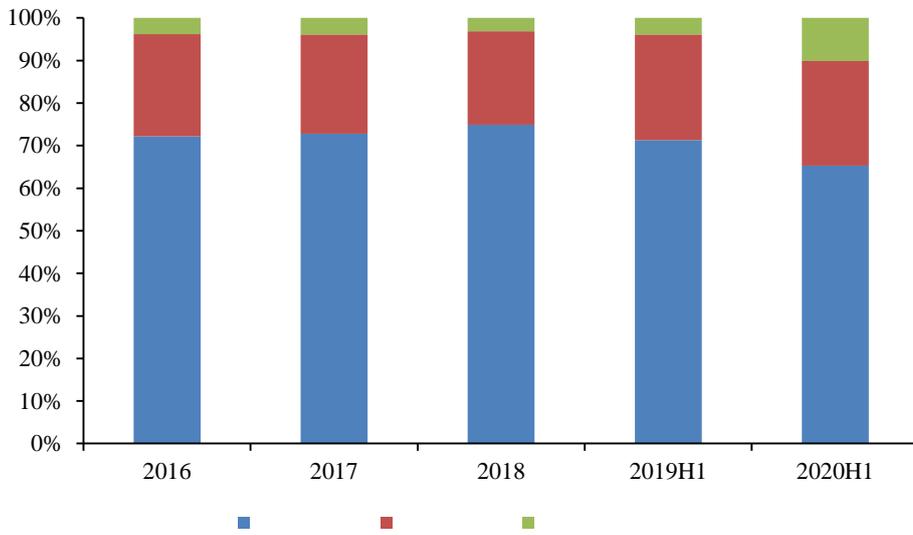
24.6%

6 2020H1

3%-4%

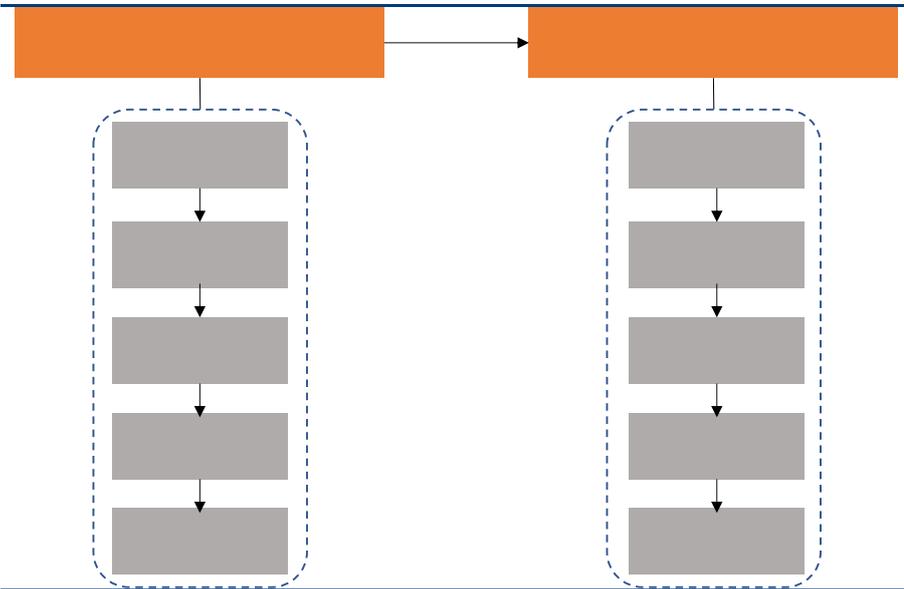
10.95

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		CMOS
		BCD			CMOS 0.18μm BCD
MOSFET				IGBT	

8

6.5

6

20

2018

10

turn-key

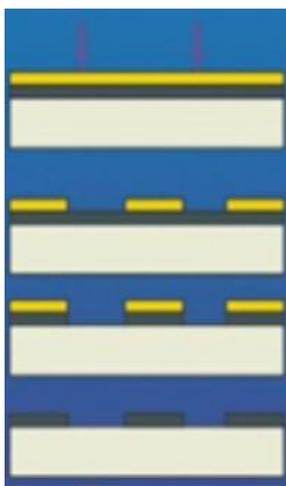


IC

2018

27%

11



12

	TCL

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

13 2016-2020H1

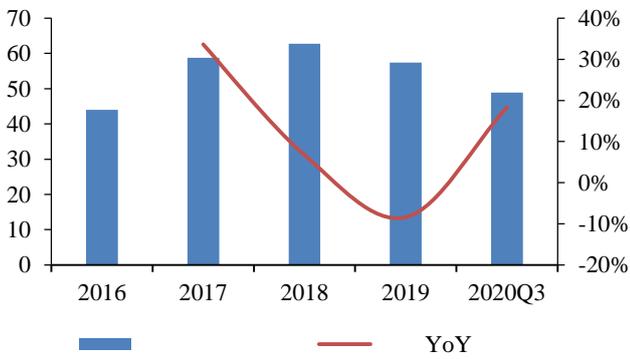
Wind

14 2019H1 Top5

MPS	14.43%	

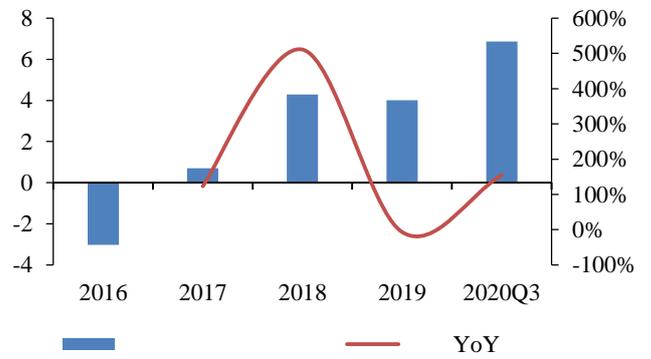
9.3% CAGR 6.5% 8.7% 2019
 8% 2019H1 2020 2018 12.16%
 18% 2017 2016 -3.03 49
 2015-2016 2016 9 10 2017
 0.7 2018 500% 4 2020
 6.87 155%

15 2016



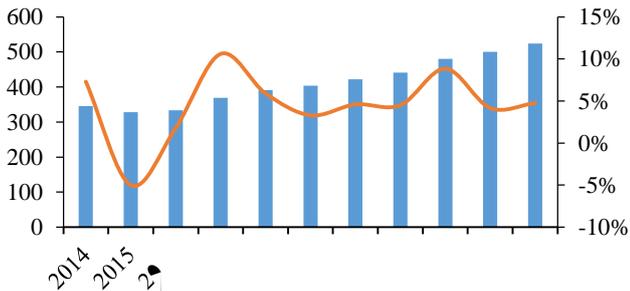
Wind

16 2016



Wind

17 2014-2024



IHS Markit

18 2015-2021

IDM
 20H1 97.5%
 78.5%

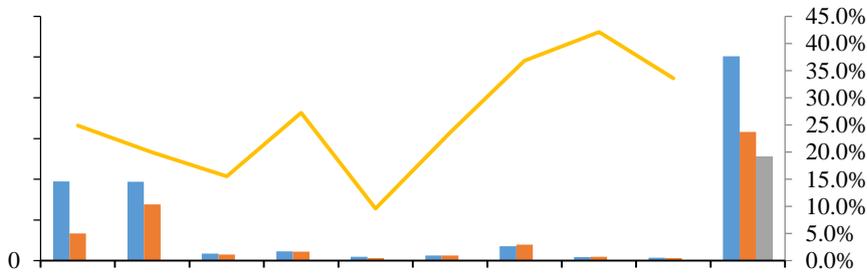
		2003
		2000
		1990

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

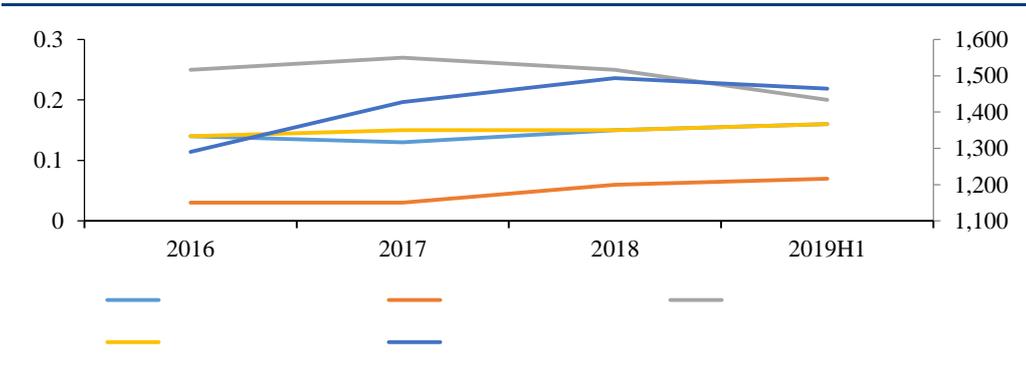
2016

ASP 0.14

2019H1 0.16

ASP 1290 1465
ASP

26 2016-2019H1 ASP



2020

Wind

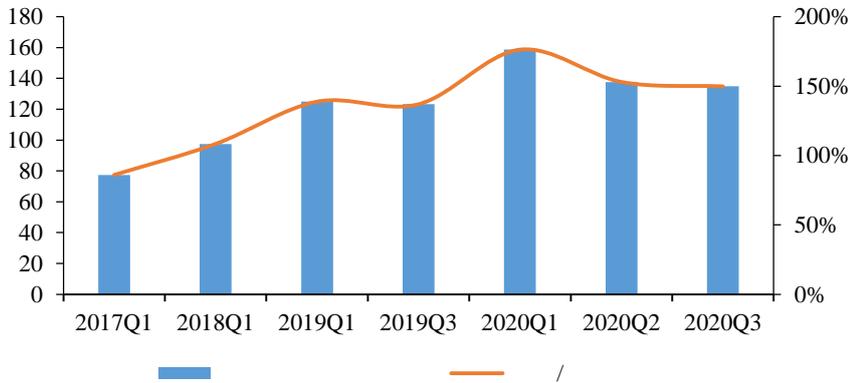
2020Q1

2017

/
3.3%

2019
2018 2020H1

27 2016-2019H1

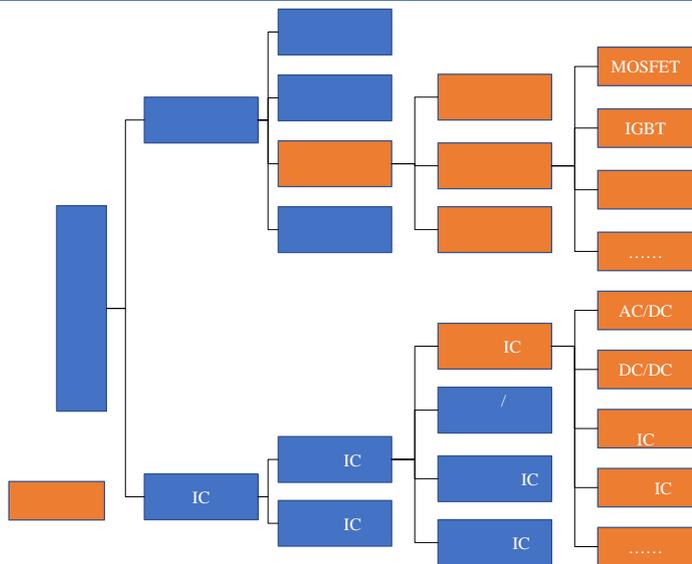


Wind

2020



28



MOSFET IGBT

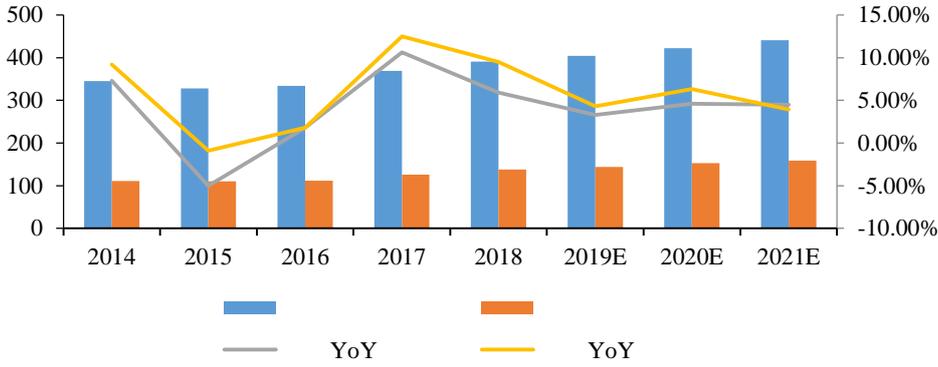
SBD

FRD

SBD

FRD

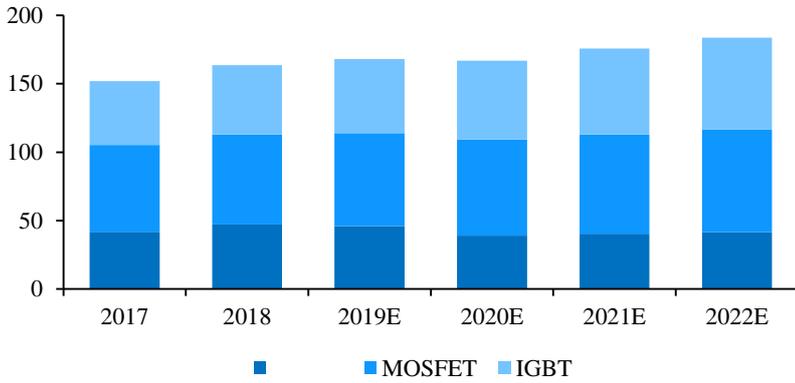
31 2014-2021



IHS Markit

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

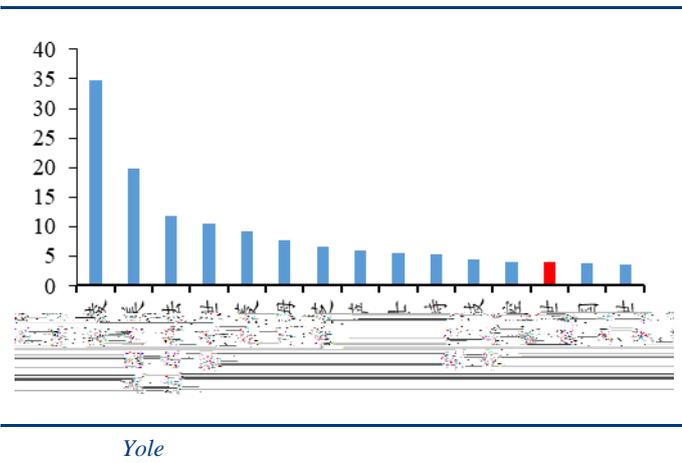
32 2017-2022 MOSFET IGBT



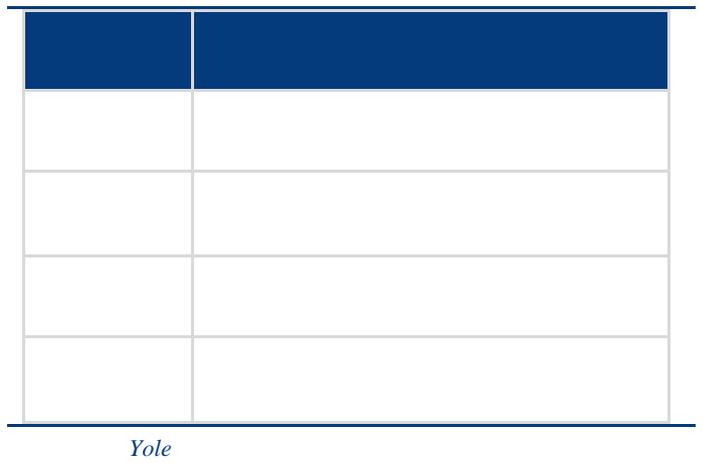
2.

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

33 To15 &



34

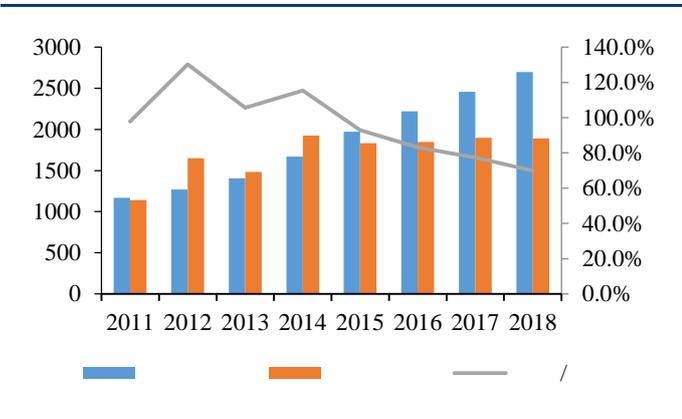


1970
2016-2018
2025
3000

1832
83% 77% 70%
50%

93%
2015
2017
50%
1500

35 2011-2018



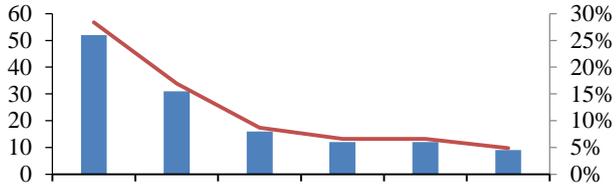
36 2011-2021



MOSFET
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

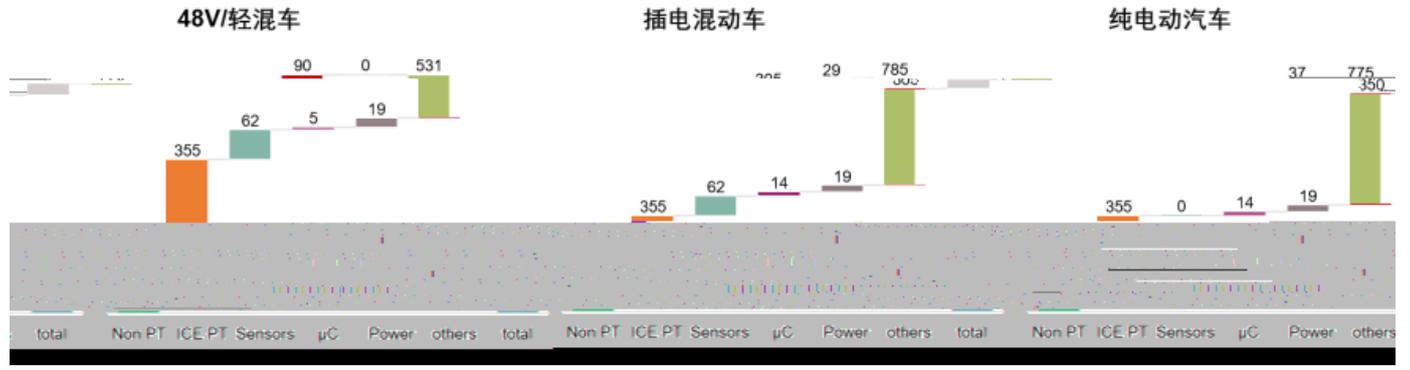
41 2017-2023 MOSFET IGBT

Yole

1.				300				
		17			90			305
360								

42

265



MOSFET&IGBT

300

MOSFET&IGBT
2025

IGBT

MOSFET
210

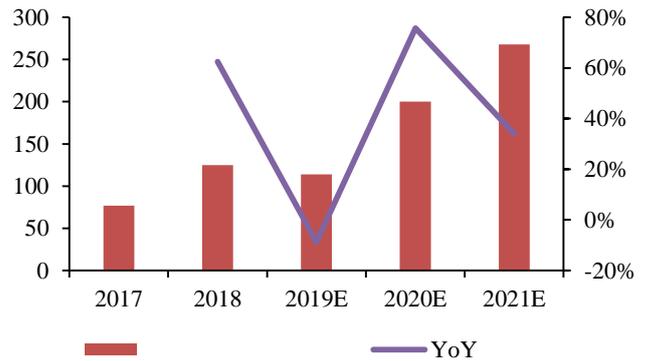
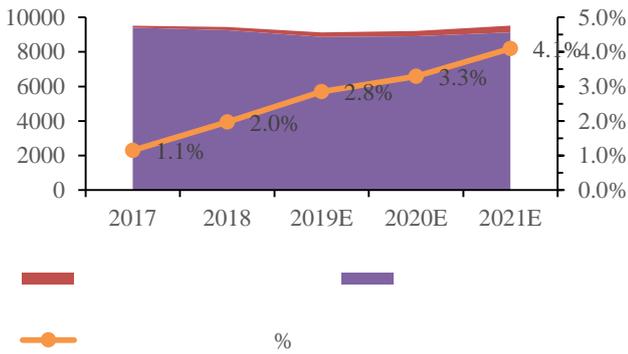
2022

116

IGBT
310

43 2017-2021

44 2017-2021

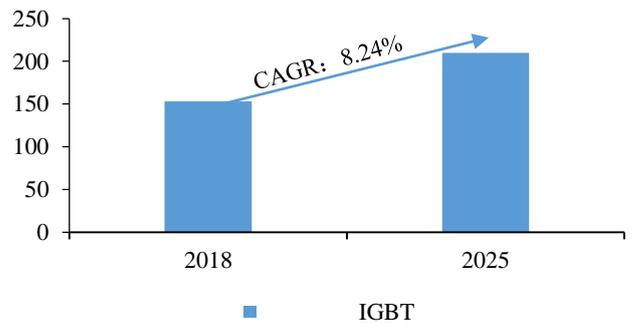
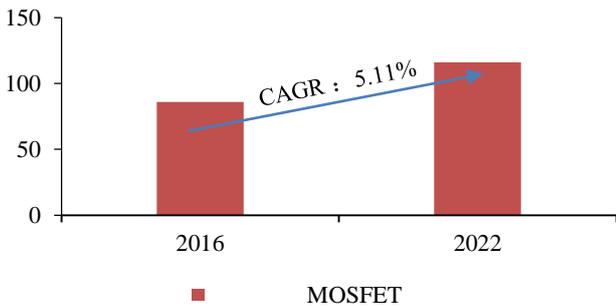


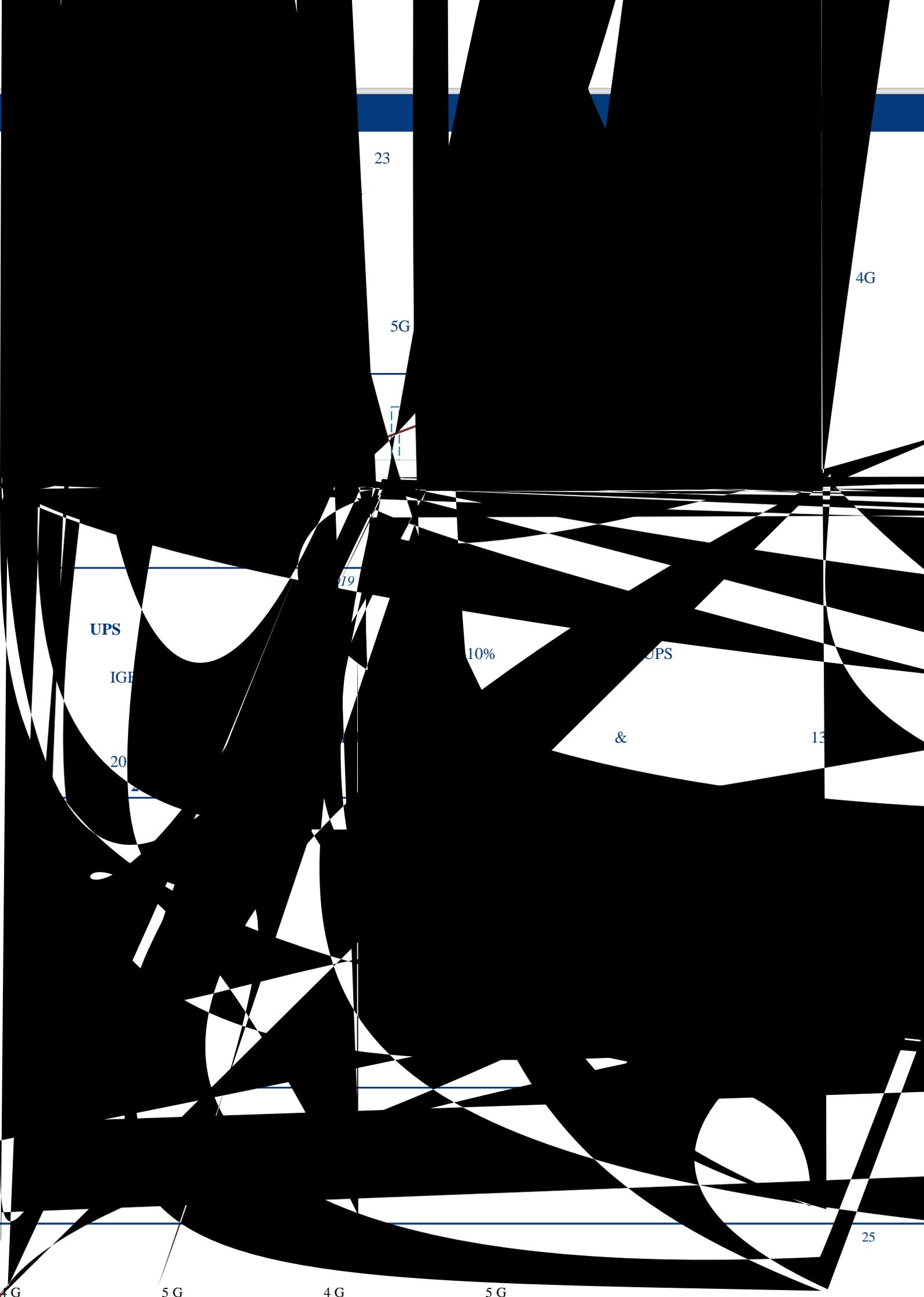
Bloomberg NEF marklines

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

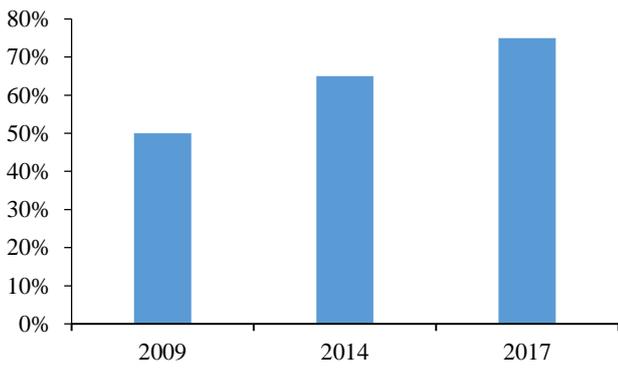
Q1

90%	2017	8	44%	2016	8	
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		

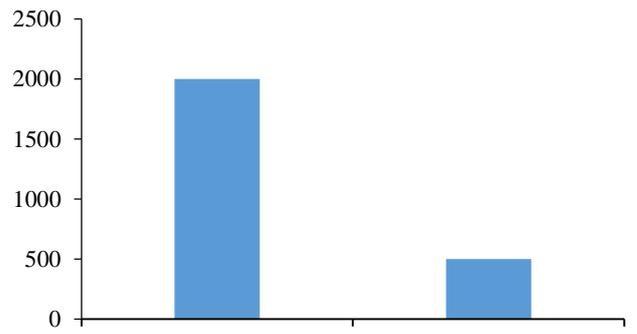
8
8
12 75%
VLSI research
8 9
20 90 2000 2017
12 12 8
116
8
8
Surplus Global
2017 8
2018 8 2000
3 5 2018 8
500 8
8

60 2009-2017 12



IC Insights

61 2018 8



Surplus Global

2

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

62

%

63

Yole Frost&Sullivan,

ADAS

8

65%

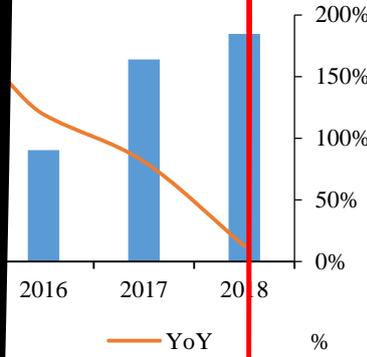
15% 2017-2018

53% 62%

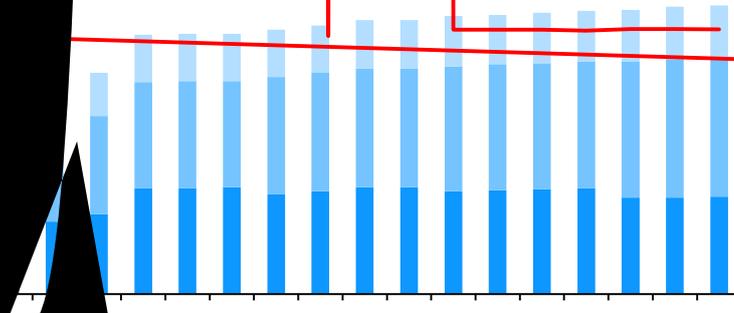
64 2016-2019

IGBT

66 2011-2018



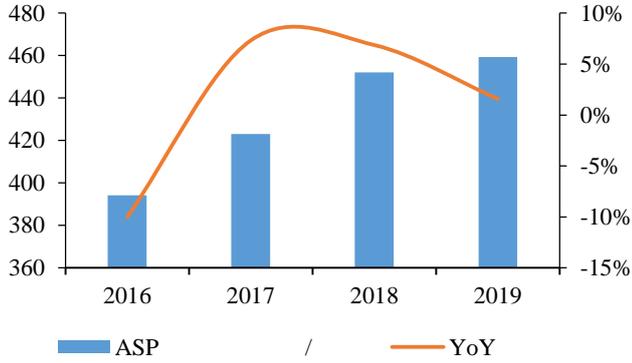
2017 Q3	8	/	SUMCO 2016 Q4	8
2017Q2	540	/	2016Q4	525
SEMI 2021	8		550 / 2017	
12.7%				



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

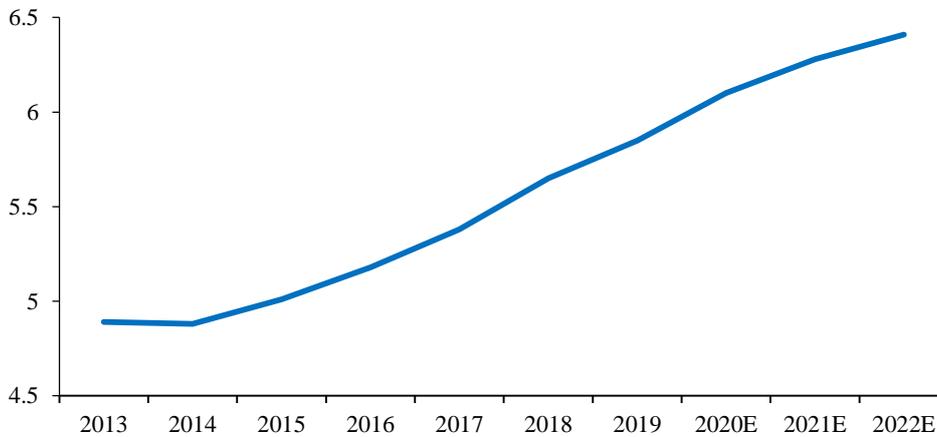
4.5%

2016

72 2013-2022

8

/



SEMI

2020

IDM

7

2020 H1

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%

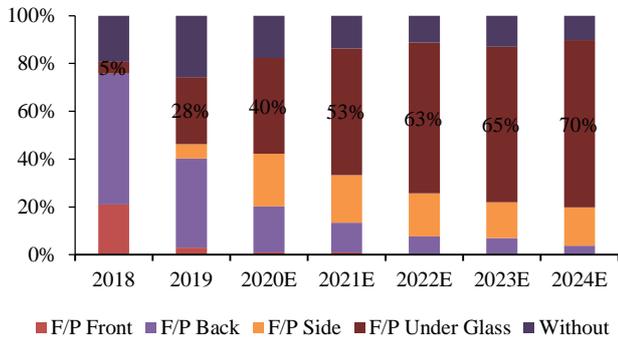
Counterpoint 2020Q1

3.5

8

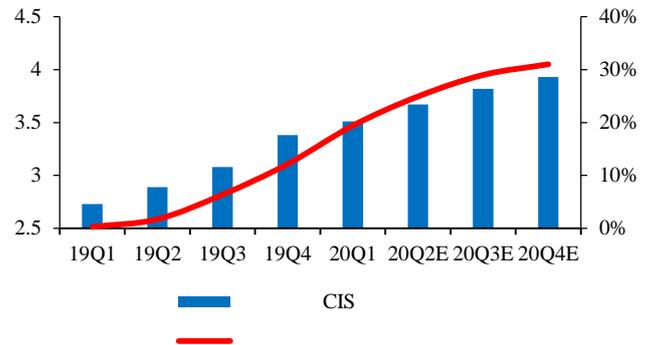
CIS

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

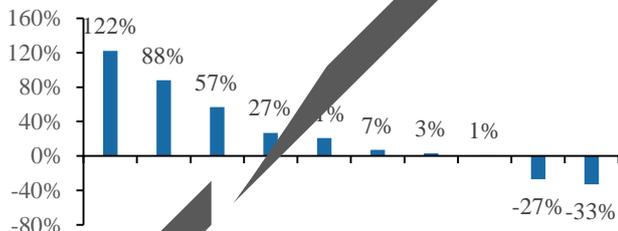
NB/PAD Canalys PC 2020Q2-Q3

Q3 1.245 23% 88% 57%

10.9pct

2020 7 52.5% 19.3% 9-10 65%

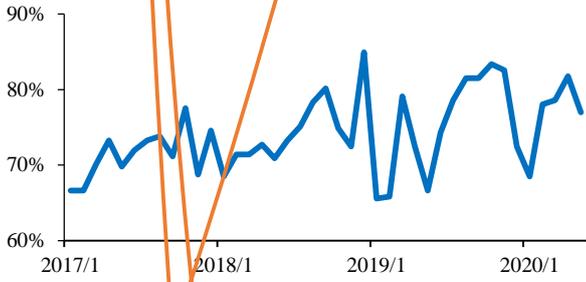
76 2020Q3 PC



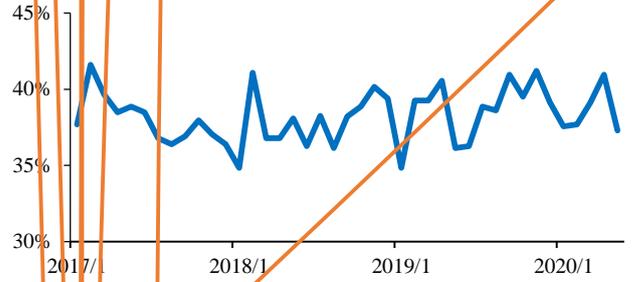
199IT

77 2020

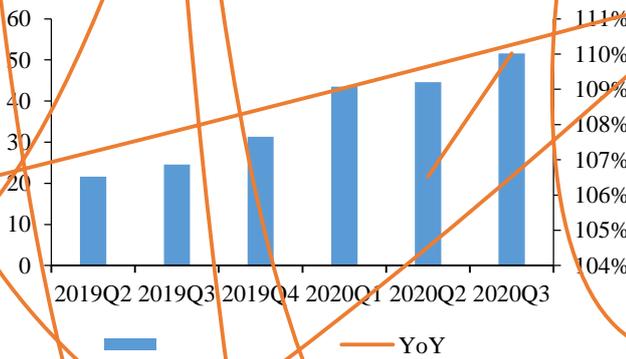
21%
78 2017-20H1



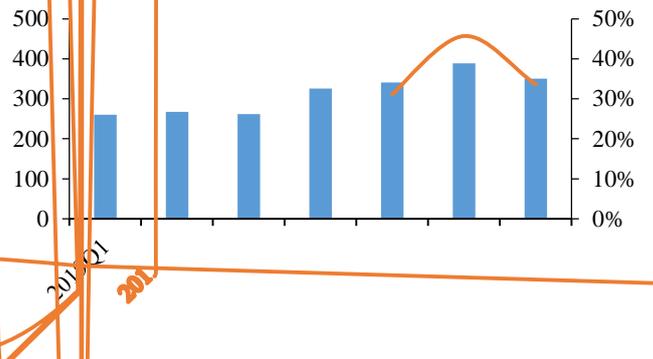
2019 11% 6
79 2017-20H1



80 2019Q2-2020Q3



81 2019Q2-2020Q3



Wind

Wind

3 2020

8

IC MOSFET

8

8

IC

3D sensing

DIGITIMES

10-20%

5G

2012

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%—

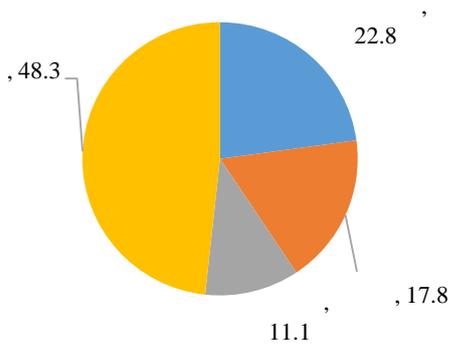
2016-2018

90%

82

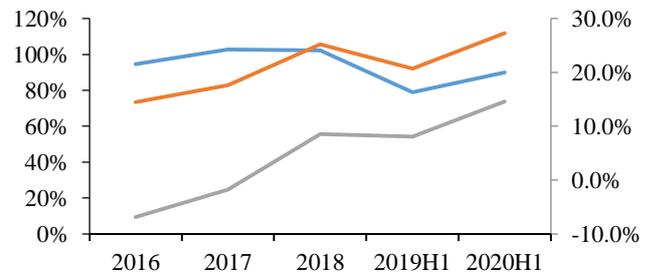
2019

8



2019

83 2016-2020H1



Wind

2020H1

90%

2020H1

8

12

2019 9

8

/ 12

2020

8

2021

1.6

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”

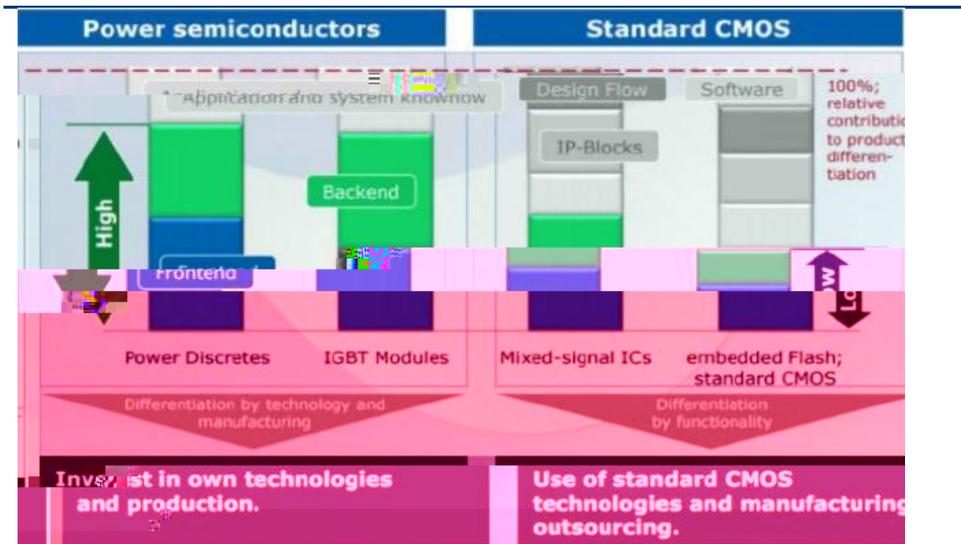
Fabless

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

&

			010-66500809	zhangyujie@hcyjs.com
			010-66500827	duboya@hcyjs.com
			010-66500817	zhangfeifei@hcyjs.com
			010-63214670	houchunyu@hcyjs.com
			010-63214683	houbin@hcyjs.com
			010-63214683	guoyunlong@hcyjs.com
			010-66500867	liuyi@hcyjs.com
			010-63214683	dana@hcyjs.com
				cheyizhe@hcyjs.com
			0755-82828570	zhangjuan@hcyjs.com
			0755-83715428	wangliyan@hcyjs.com
			0755-82756805	duanjiayin@hcyjs.com
			0755-83024576	zhuyan@hcyjs.com
			0755-82756805	baoqingqing@hcyjs.com
			021-20572536	xucaixia@hcyjs.com
			021-20572555	guanyichao@hcyjs.com
			021-20572257-2552	huangchang@hcyjs.com
			021-20572585	zhangjiani@hcyjs.com
			021-20572506	wujun1@hcyjs.com

021

(300)

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

“ ”