

1								2019
								2020-2022
			35.02	40.27	44.30			
	10.00%	15.00%	10.00%					
			2020-2022					18.00%
18.50%	18.50%							
2				2020	5G			2020-2022
			31.45	39.31	47.17			
	25.00%	25.00%	20.00%					
			2020-2022					30.00%
31.00%	31.00%							
1								
2								
		-						
1								
2						SiC	GaN	
3								
4		12						
			2020-2022			5.20	6.48	8.07
PE		102x	82x	65x				
PB								
2020Q1		PB	6.1x		2020Q1	PB	5.4x	

1	IDM	6
1.1		.....

1		6
2		6
3		7
4		7
5	2019 12 31	ET7ETJTmC
6	2019	8
7	2020 2	8
8	2020 2	9
9		10
10		10
11		10
12		11
13	MOSFET	12
14		13
15		14
16	2014-2021	15
17	2014-2021	15
18	2018	16
19		

37		2018	.....	29
38	2017		.....	29
39	2018		.....	30
40			.....	31
41			.....	32
42			.....	33
43	8	2020 2	.....	33
44			.....	34
45			.....	34
46	8		.....	35
47			.....	37
48			.....	38
49	-PB		.....	38
50	-PE		.....	39

1

IDM

1.1

IDM

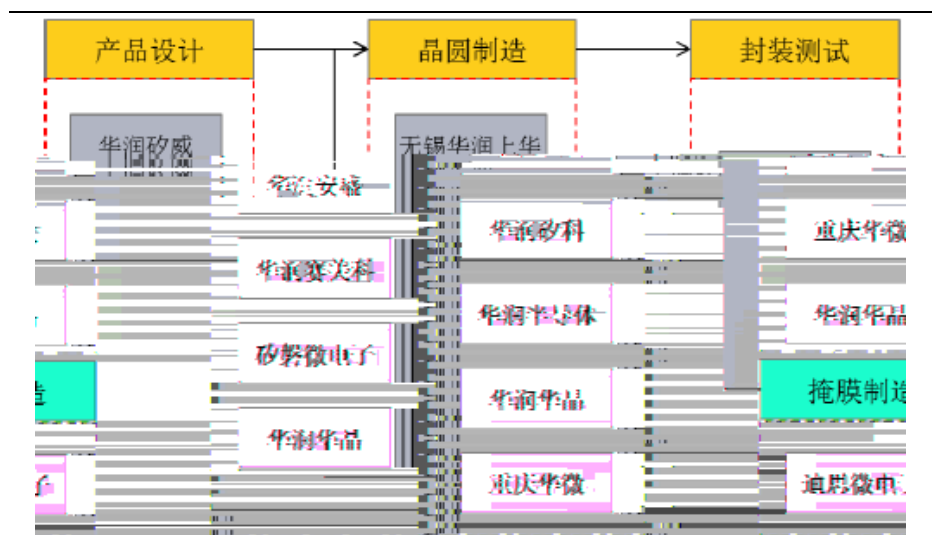
1

	2019			2018			2017			2016		
	25.16	44.10%	29.48%	26.83	42.90%	34.02%	23.39	39.92%	19.59%	13.32	30.52%	25.19%
	31.84	55.90%	17.76%	35.72								

3

	2019	1-6	2018		2017		2016	
	10.60	71.29%	26.74	74.87%	25.63	72.83%	21.88	72.17%
	3.69	24.84%	7.86	22.00%	8.20	23.30%	7.29	24.06%
	0.58	3.87%	1.12	3.13%	1.36	3.87%	1.14	3.77%
	14.87	100.00%	35.72	100.00%	35.20	100.00%	30.32	100.00%

4



5

2019 12 31

子公司全称	主要经营地	业务	注册资本	持股比例 (%)
无锡华润上华科技有限公司	江苏无锡	晶圆制造	66801.147 万美元	100
无锡华润矽科微电子有 限公司	江苏无锡	IC 设计	12499.3178 万人民币	100
100 无锡华润安盛科技有限 公司	江苏无锡	封装测试	4 亿人民币	
100 华润赛美科微电子(深 圳)有限公司	广东深圳	封装测试	1380 万美元	
99.662 无锡华润华晶微电子有 限公司	江苏无锡	分立器件	3.35 亿人民币	
华润微电子(重庆)有限 公司	重庆	封装器件	19.892 亿人民币	52.69

6

2019

子公司全称	总资产	净资产	营业收入	净利润
无锡华润上华科技有 限公司	389,648.46	289,472.02	297,727.94	31,673.27
无锡华润微电子有 限公司	87,776.09	24,363.35	68,689.99	26
无锡华润微电子有 限公司	31,390.31	70,254.15	44,123.62	731,729.18
无锡华润微电子有 限公司	444.08	28,541.20	11,117.33	17,503.34
无锡华润微电子有 限公司	15.57	85,024.18	50,408.28	88,601.84

1.2

CRH Micro

878,982,146

99.996053%

0.003947%

CRC Bluesky Limited

CRH 99.99%

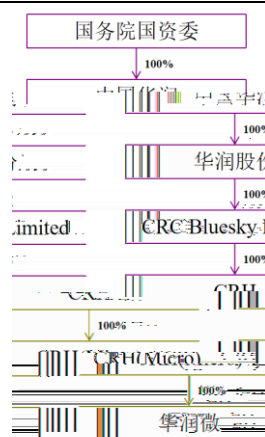
Riverlink Limited

CRH 0.01%

7

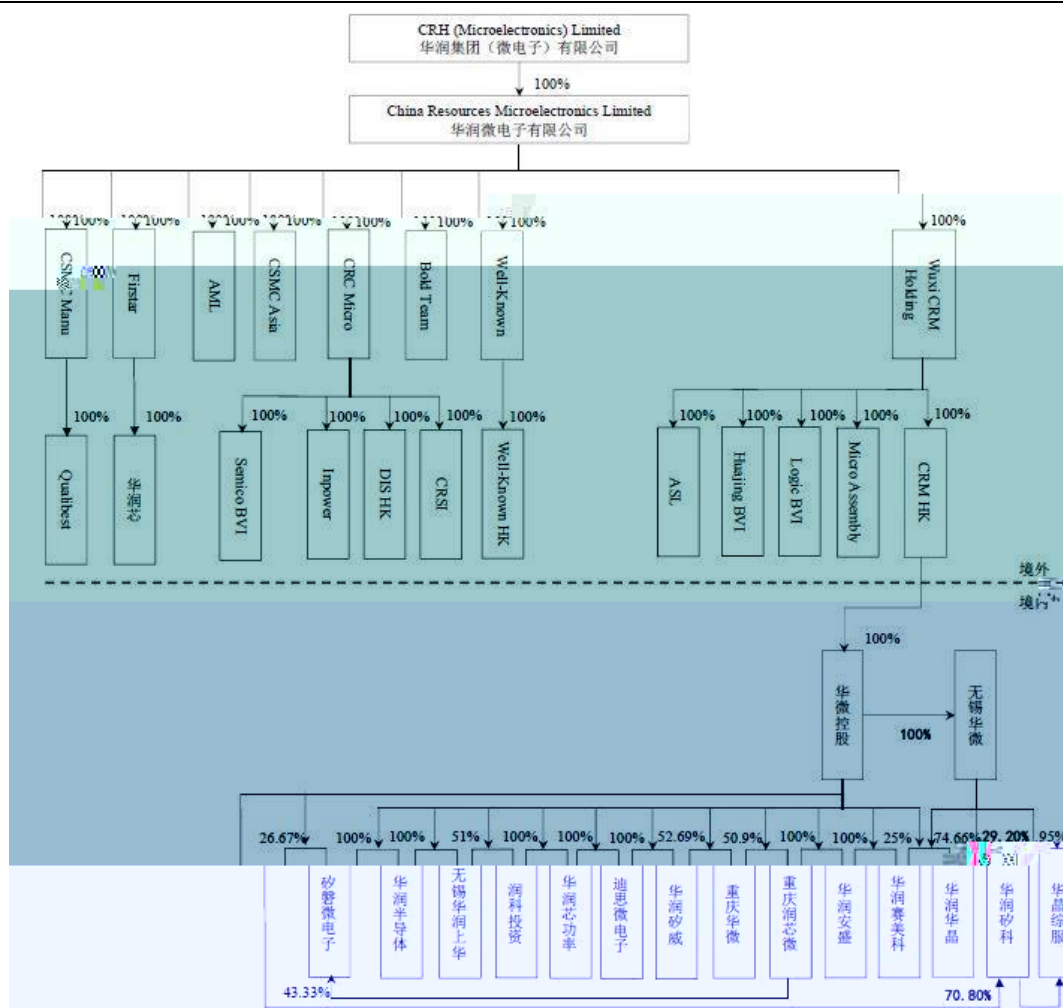
2020

2



8

2020 2



1.3

+

1983

1999 Dr. Peter CHEN Cheng-yu

6 MOS

2002

2003

CSMC

Chartered

Semiconductor

2004 8 CSMC

2008

CSMC

CRM

2011 11

2017

52.41%

2019

2020

9



2019

1.4

2017-2019

58.76

62.71

57.43

33.63%

6.73%

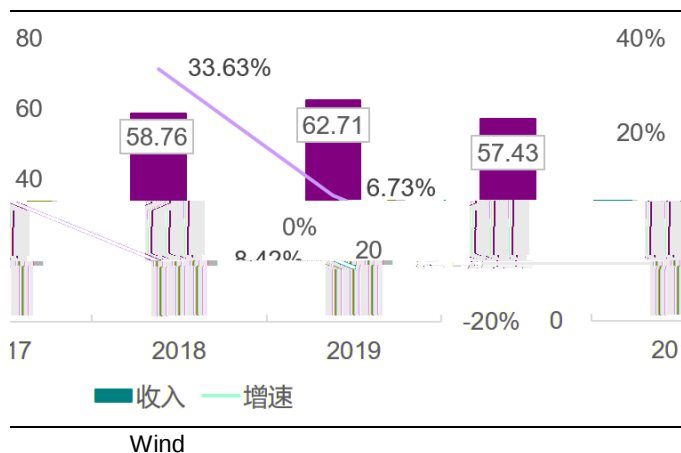
-8.42%

2017

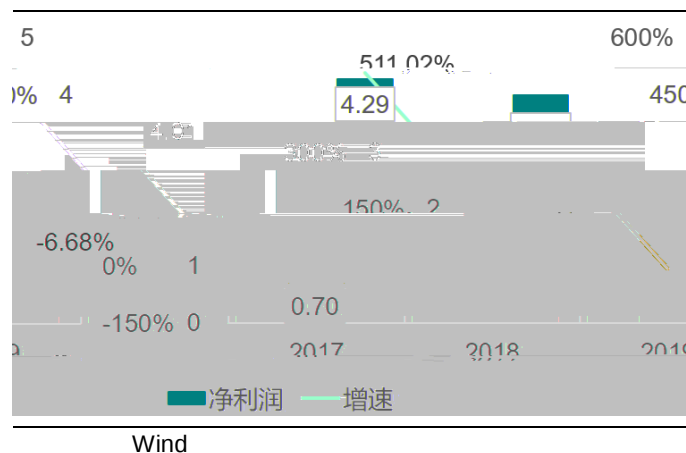
2018

2019

10



11



2018

2017-2019

0.70

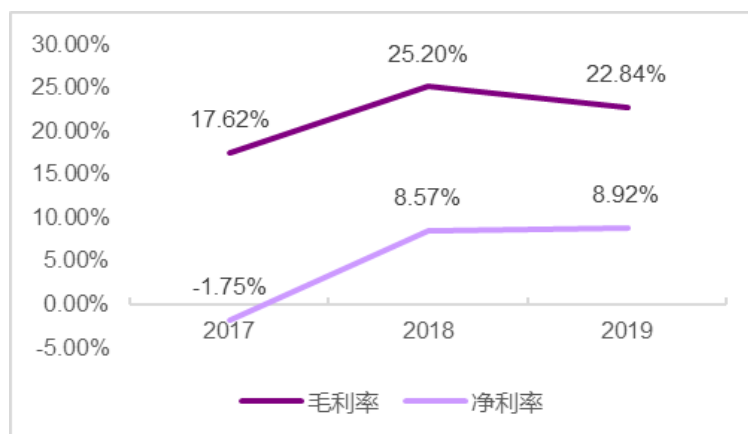
4.29

4.01

2018

8	2	8	2017
	3.71		
2017-2019		17.62%	25.20% 22.84%
	1	2017	
2	8	2	8
2017	3.71	3	
39.92%	42.90%	43.81%	
	19.59%	34.02%	29.48%
	16.33%	18.57%	17.76%
			2019
	2019		

12



Wind

1.5

IDM

IDM

IDM

Fabless

IDM

1,100

500

IC

BCD MEMS

IPM

8 133 6 247 /

4.47 4.50 4.83 7.61%

7.17% 8.40% 2019 12 31 7878

3032 38.5%

5 2

2

2019 12 31

2578 291

1401 1228 173

MOSFET

MOS

VDMOS MOS IGBT

Trench-FS 600V-6500V IGBT

SBD

8 Trench

45V 150V BCD MEMS IPM

PQFN/PDFN

13 MOSFET

	30V-900V	40V-900V	-60V-150V	-100V-1500V
	MOS MOS MOS MOS MOS	MOS MOS	MOS MOS MOS P MOS	MOS MOS MOS MOS P MOS MOS

GaN

SiC

IPM MOS IC BMS IC

8 MEMS 0.5

500-600V SOI BCI

14

	I	
	MEMS	IPM
	IGBT	SBD/FRD
ASIC	MCU	MOS

2

2.1

IC

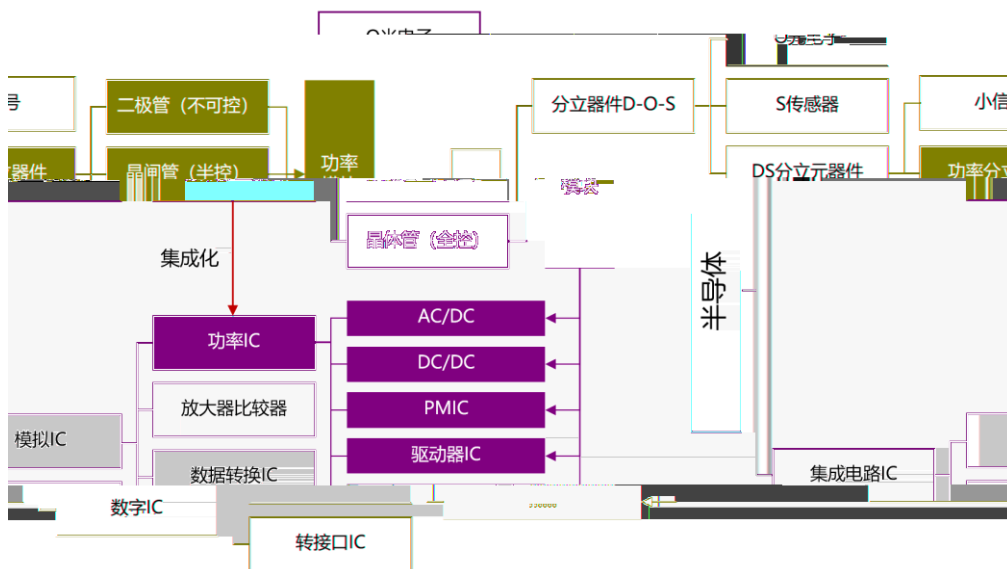
IHS Markit

MOSFET

IGBT

2020-2025

15



WSTS

IHS Markit
2021

2019

404
4.1%

2019

144

4%

35%

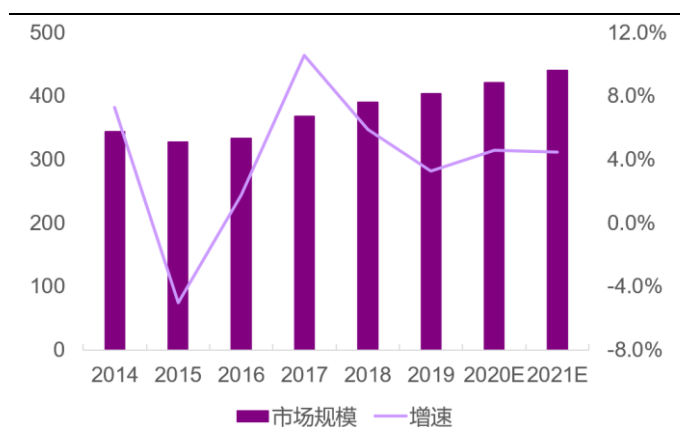
IHS Markit

2021

159

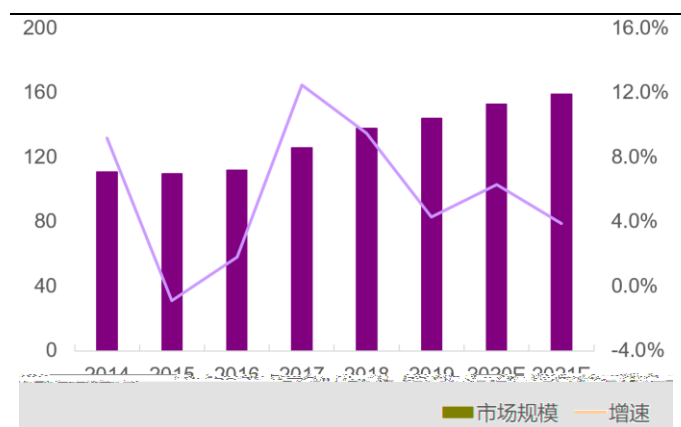
4.8%

16 2014-2021



IHS

17 2014-2021

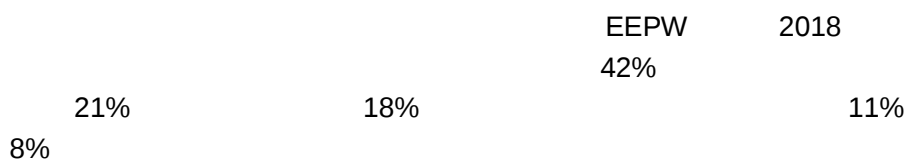


IHS

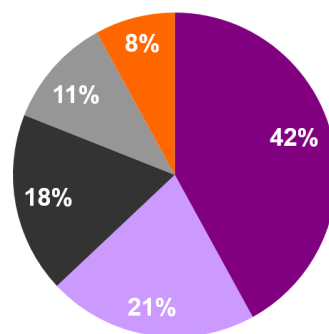
IHS Markit
IC MOSFET IGBT 2018
60.98% 20.21% 13.92%

IC
IHS Markit 2018 IC 84.3
2016-2018 2.88% IC
GaN SiC

2.2



18 2018



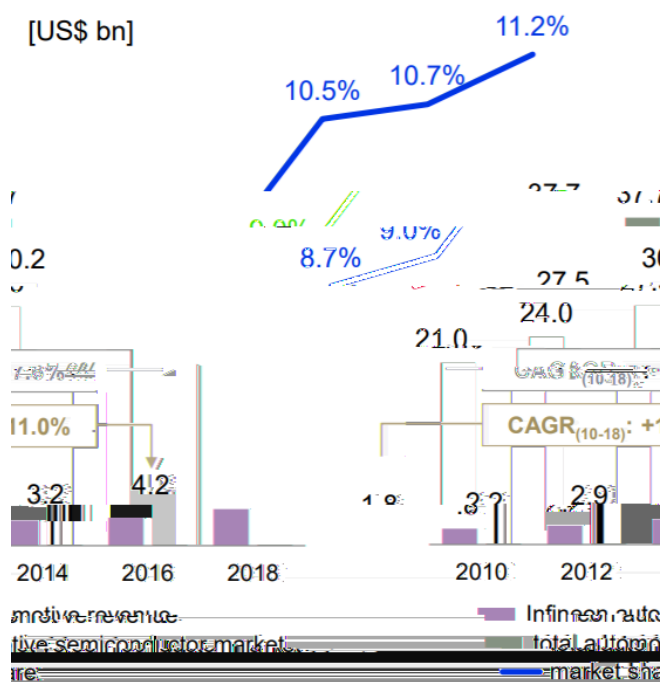
■ 汽车电子 ■ 通信 ■ 工业 ■ 计算机 ■ 消费电子

EEPW



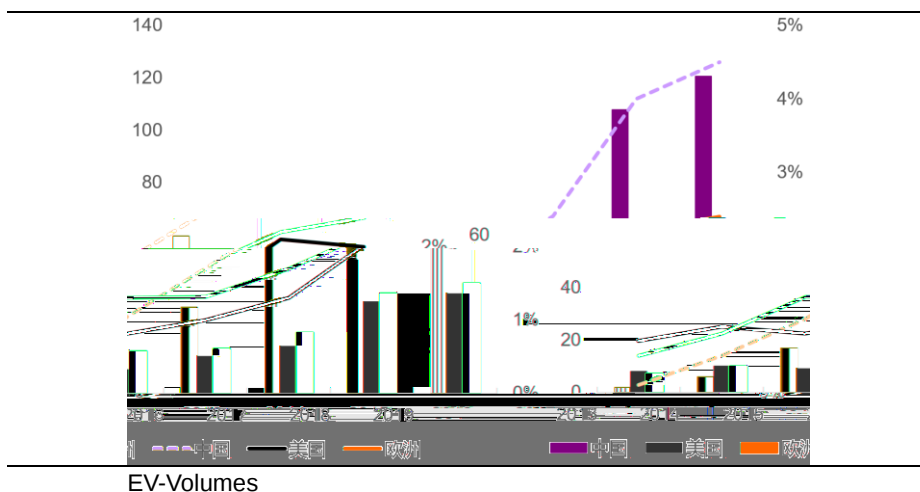
19

Automotive semi market development



2019 120.6
4% 124.2 2.3% 2019
2572.1 2576.9 4.8%
4.7%

20



Strategy Analytics
21%
71
387
55%
IC
5.5
1.0 1.1

21 2019

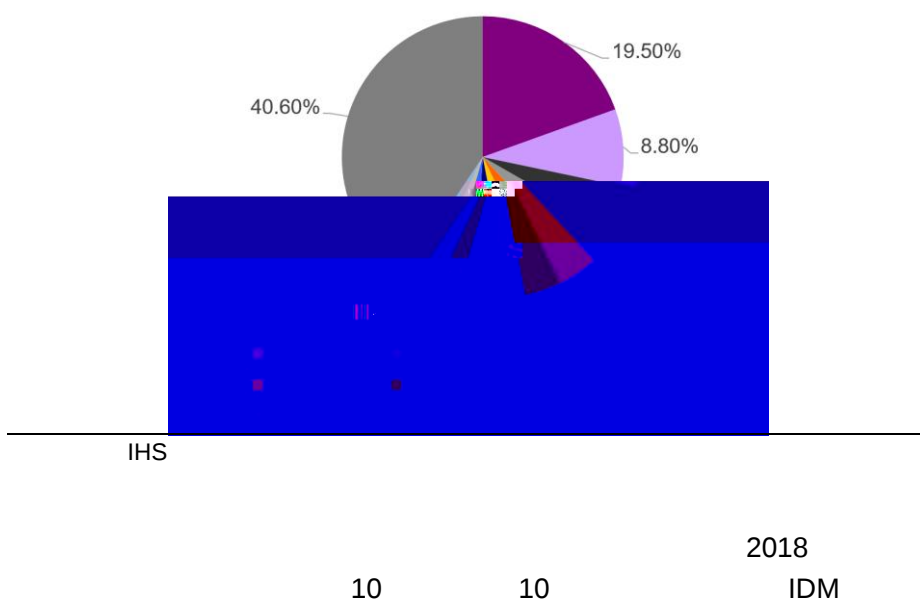
	71	21%	354	50%	387	55%
IC	78	23%	93	13%	78	11%
	44	13%	59	8%	49	7%
	145	43%	205	29%	190	27%
	338	100%	710	100%	704	100%

Strategy Analytics

2.3

IHS 2018
5
19.50% 8.80% 5.00% 4.80% 4.60% CR5 42.7%
4.5%

22 2018



23 2018

		2018	
1		509	
2		248	
3		239	
4		225	
5		111	
6	()	107	
7		92	
8		66	
9		65	
10		63	IDM

2018

24

2018

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

25

MOSFET

2018

		2018	MOSFET
1		52	28.40%
2		31	16.90%
3		16	8.70%
4		12	6.60%
5		12	6.60%
6		9	4.90%
7		51	27.90%
		183	100%

IHS

MOSFET

MOSFET

-100V 1500V

MOSFET

MOSFET

MOS

VDMOS

MOS

IHS Markit

2018

MOSFET

MOSFET

26

	IFX.DE	1999	1999								
	ON.O	2018	75.99	10.75							
	TXN.O	1930									
	STM.PA	2018	157.84	55.8							
	600460.SH	1997	MCU	LED	LED	/					
	600360.SH	1999	PC	IC	IC						

		2006		
	300373.SH			IDM
		2018	18.52	1.88

Wind

27

2017-2020Q1

		2020Q1		2019		2018		2017	
688396.SH		13.82	1.14	57.43	4.01	62.71	4.29	58.76	0.70
603290.SH		1.38	0.27	7.79	1.35	6.75	0.97	4.38	0.53
600745.SH		113.40	6.35	415.78	12.54	173.35	0.61	169.16	3.29
	-			103.71	12.58	104.30	13.40	94.43	8.18
600703.SH		16.82	3.92	74.60	12.98	83.64	28.30	83.94	31.64
300373.SZ		4.87	0.56	20.07	2.25	18.52	1.87	14.70	2.67
300623.SZ		1.54	0.42	6.74	1.90	5.37	1.66	4.31	1.44
600460.SH		6.91	0.02	31.11	0.15	30.26	1.70	27.42	1.69
600360.SH		3.92	0.09	16.56	0.65	17.09	1.06	16.35	0.95
300046.SZ		0.35	0.00	2.65	-2.20	4.18	0.86	2.79	0.53
002079.SZ		3.26	0.13	19.81	0.96	18.85	0.95	18.55	1.05

Wind

2.4

1998 12 1999

2000

1999-2004

2001 2000 IT

10 2004

ADMtek

xDSL CPE

IC ASDL VoIP

2004-2011

2006

2009 1

2009 2.5

Golden Gate Capital 2015

2011

14

2019

28



2011-

2014

30

IR

2016

8.5

Cree Inc.

Wolfspeed
IOT

C

3

3.1

IDM

6»:» Ö>|Ö

32 IC

IC	AC-DC	AC-DC	
	LED IC	LED	
	BMS IC		
	IC	78 1117 100mA-1A	
	IC	100W	
	IC	,	
	IC	AB D 5mW-50W	

IC

IC

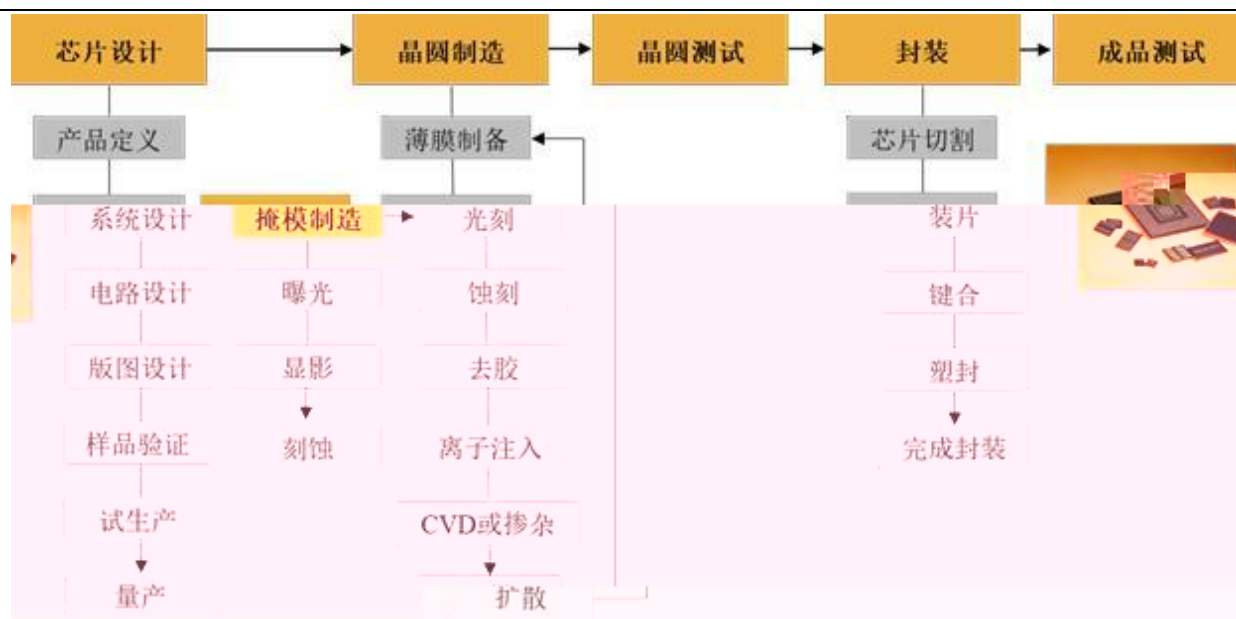
1. AC-DC
2. LED IC LED
3. BMS IC
4. IC IC
5. IC WPC QI

6. IC

7. IC BCD CMOS

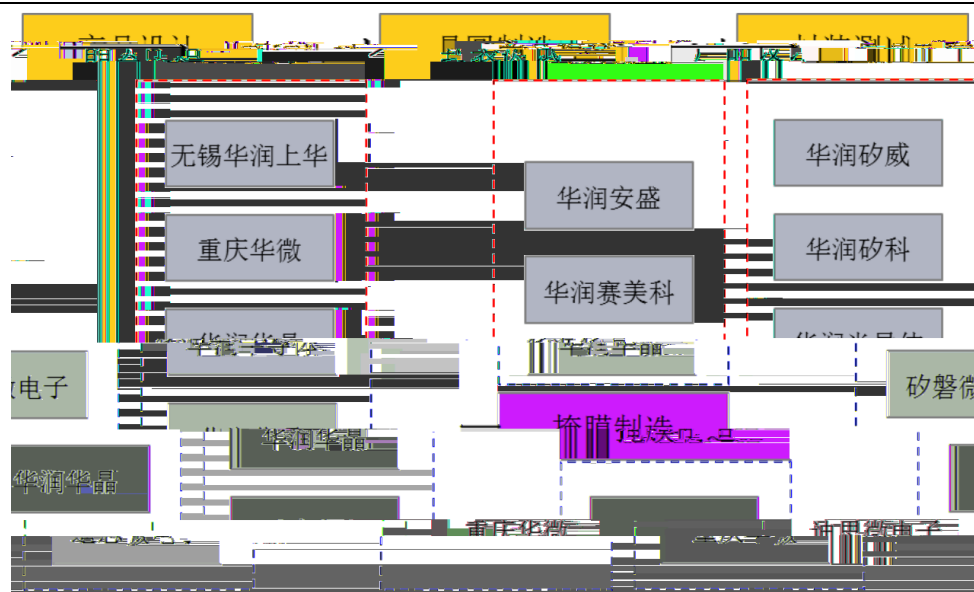
IC IDM

33



3 6

8



35

			2018	
	3 6	Analog BCD MEMS DMOS Power Discrete	247	/100%

6 1.0-0.11 m
SOI BCD
CMOS CMOS Bipolar BiCMOS IGBT
MEMS GaN SiC
BCD MEMS

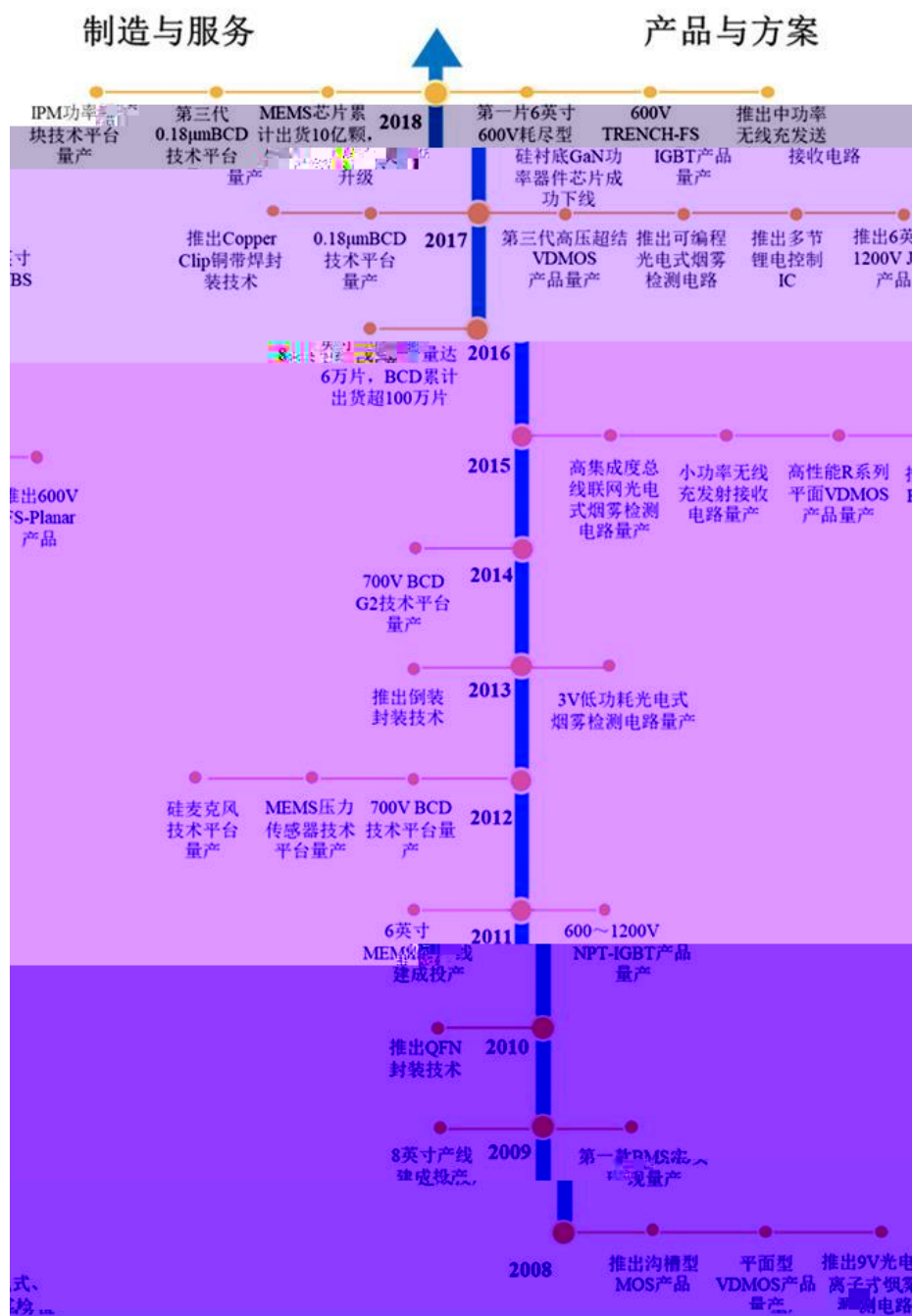
1 8 60
SBD MOS MOS IGBT GaN MOS
IC

62

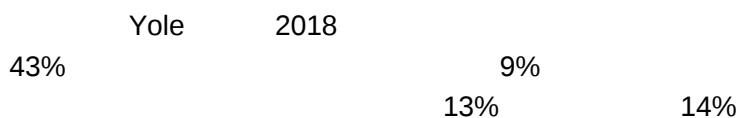
50 m 12
FC

PEP INNOVATION

36

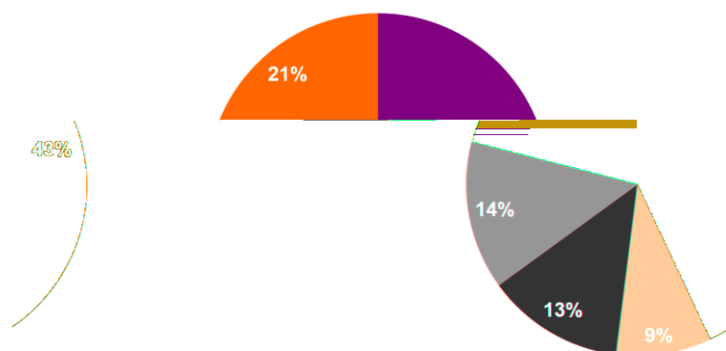


3.2



37

2018



亚洲与大洋洲（除去中日） 中国 日本 欧洲、中东、非洲 美洲

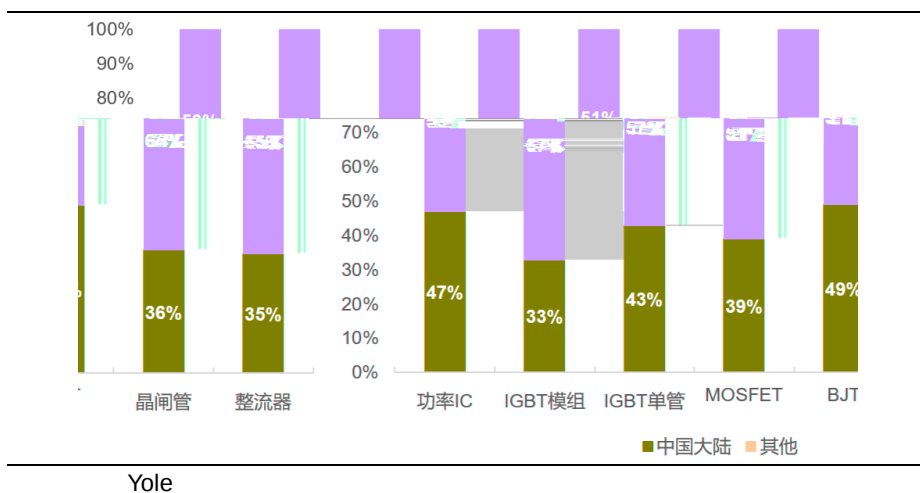
Yole

2017

124.6
39.31

38

39 2018



3.3 IGBT SiC GaN

IGBT

IGBT

IGBT

IGBT

1.SiC

SiC6

700-1000 / 2020

SiC

2000

SiC

SiC

SiC

SiC

MOSFET

2.GaN

600V

GaNHEMT
2019

6

8

2021

IDM

1.

IDM

10-15

IDM

15

IDM

2. IDM 6 SiC

SiCJBS

JBS

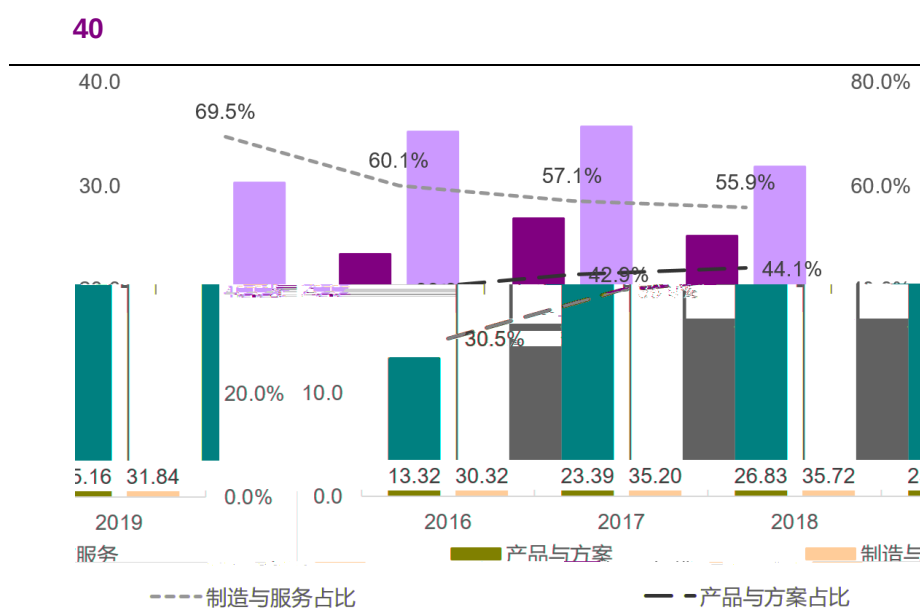
600-1200V SiCMOSFET

MOSFET IGBT FRD

1100 IC 500

2016-2019

23.39 26.83 25.16 30.5% 39.9% 42.9% 44.1%



4

4.1

12

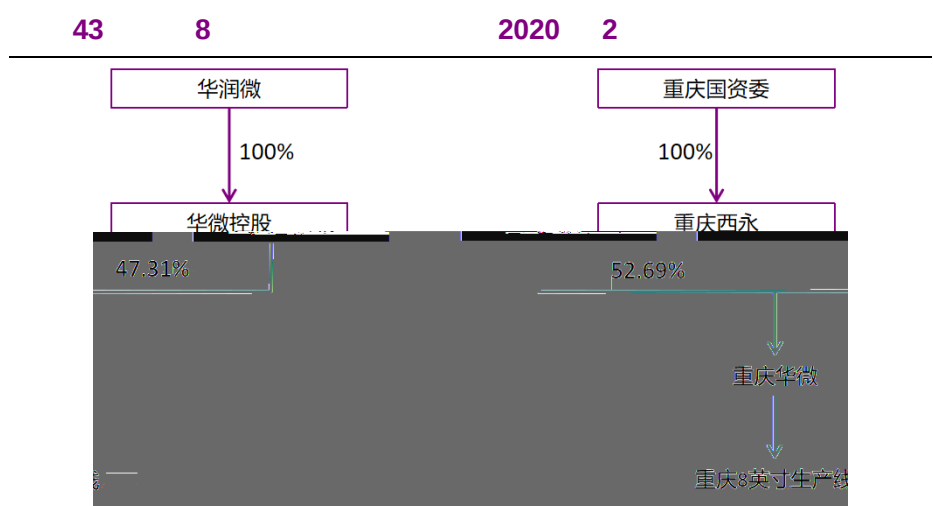
41

2019

13

2001	6	MOS	2002	2008	2017
		52.41%			IDM
2019		35%			
42					
2001		MOS	100%		
2002			100%		
2008			100%		
2017			52.69%		
2019			35%		

4.2	12	8
1	8	
52.69%	47.31%	
2017		
8		
MOS	SBD	MOS MOS IGBT
GaN		
60	2019	10.7
2.45		



2 12 12

12

12

2018

12

12

2020

90nm

12

12

MOSFET IGBT

4.3

8

30

8

44

1	8	150,000	50%
2		60,000	20%
3		30,000	10%
4		60,000	20%
		300,000	100%

45

1	8			
2				
3				
4				

8

8 23.11

8 BCD 8
MEMS

BCD MEMS 16,000

4,400 5,700

2.75

15 12 6 2018

9

46 8

1		46,788.00	20.24%
2		129,540.00	56.04%
3		39,694.00	17.17%
4		15,122.00	6.54%
		231,144.00	100.00%

IC MEMS

1

SiC GaN

Yole Development

2020

GaN

3

2016

2020

80%

SiC

3

6

28%

IDM

650V

GaN

SiC JBS

SiC MOSFET

2

IGBT

21

IGBT

IGBT IPM

Trench-FS	IGBT	SOI	IPM	
	IPM			
3	IC			
	IHS Markit	2018	IC	230
				5%
IC			IC	
			IC	
			2W-100W	
	GaN	PD		
4	MEMS			
	MEMS			
	2018		944	12.56%
MEMS				
			MEMS	
			MEMS	
		6		25%
			3	6
	24		6	
2019	12	31		2020
				1
			50%	20%
		3	30%	2019
				5
				16
	2019-2021		7.3	
		6.0		

5

5.1

1						2019
						2020-2022
			35.02	40.27	44.30	
	10.00%	15.00%	10.00%			
		2020-2022				18.00% 18.50% 18.50%
2			2019			MOSFET
62%	IC		14%			6% IGBT
		7%	2020	5G		
					2020-2022	
		31.45	39.31	47.17		25.00%
25.00%	20.00%					
		2020-2022				30.00% 31.00% 31.00%

5.2

			2020-2022		66.90	80.01	91.90
			16.49%	19.60%	14.86%	2020-2022	
		23.59%	24.59%	24.88%		2020-2022	
		5.20	6.47	8.07		29.78%	24.52%
24.66%	EPS		0.43	0.53	0.66		

47

	2016A	2017A	2018A	2019A	2020E	2021E	2022E
1							
	3,031.56	3,519.76	3,571.91	3183.52	3501.87	4027.15	4429.87
YOY		16.10%	1.48%	-10.87%	10.00%	15.00%	10.00%
	300.48	574.77	663.17	565.43	630.34	745.02	819.53
	9.91%	16.33%	18.57%	17.76%	18.00%	18.50%	18.50%
	68.95%	59.90%	56.96%	55.44%	52.34%	50.33%	48.20%

	4,396.76	5,875.59	6,270.80	5,742.78	6,690.05	8,001.47	9,190.33
YOY		33.63%	6.73%	-8.42%	16.49%	19.60%	14.86%
	637.03	1,035.43	1,580.53	1,311.49	1,578.09	1,967.92	2,286.13
	14.49%	17.62%	25.20%	22.84%	23.59%	24.59%	24.88%

Wind

48

	2018	2019	2020E	2021E	2022E
营业收入（百万元）	6,270.80	5,742.78	6,690.05	8,001.48	9,190.34
营业收入增长率	6.73%	-8.42%	16.49%	19.60%	14.86%
净利润（百万元）	429.44	400.76	520.09	647.64	807.35
净利润增长率	511.02%	-6.68%	29.78%	24.52%	24.66%
EPS（元）	0.49	0.48	0.43	0.53	0.66
ROE（归属母公司）（摊薄）	10.35%	7.39%	5.16%	6.03%	6.99%
P/E	89	90	102	82	65
P/B	9.2	6.6	5.2	4.9	4.6
EV/EBITDA	27	31	32	30	27

Wind

2020 6 30

6

6.1 -PB

IDM

PB

PB 6.1x

PB 5.4x

49

-PB

--	--	--	--

6.2

-PE

	2020-2022		0.43	0.53	0.66
PE	102x 82x 65x	PE			

2020-2022	PE	127x	115x	104x
-----------	----	------	------	------

100%

	2018	2019	2020E	2021E	2022E
	6,271	5,743	6,690	8,001	9,190
	4,690	4,431	5,112	6,034	6,904
	940	693	978	994	1,010
	85	66	54	56	64
	126	112	126	176	184
	374	377	401	480	524
	0	31	6	-28	-31
	450	483	549	720	818
	11	0	0	0	0
	586	478	609	743	911
	591	506	600	734	902
	53	-6	30	37	45
	538	512	570	698	857
	108	112	50	50	50
	429	401	520	648	807
EPS()	0.49	0.48	0.43	0.53	0.66

	2018	2019	2020E	2021E	2022E
	1,482	576	98	421	827
	429	401	520	648	807
	940	693	978	994	1,010
	224	-796	1,624	1,502	1,245
	-111	278	-3,023	-2,722	-2,235
	-575	-41	158	-375	-350
	-533	-611	-300	-300	-300
	0	82	0	0	0
	-42	488	458	-75	-50
	-627	-180	4,428	290	269
	0	0	386	0	0
	2,200	-945	100	0	0
	-2,504	-323	311	535	458
	317	374	4,684	336	747

