

78.0-80.8

50.54

/ ()	1,216/249
/ ()	61,453/12,587
/	3,293/13,284
12 / ()	65.77/31.77

-688396-
2020-07-29
-688396- 2020-04-24 IDM

0755-81981821
E-MAIL ouyangsh1@guosen.com.cn
S0980517080002

0755-81981025
E-MAIL xuliang1@guosen.com.cn
S0980518120001



1983

IDM

MOSFET PMIC

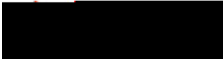
HIS Markit 2018



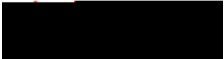
1

2

3



	.....	2
	.....	3
	.....	3
78.0-84.8	.....	7
	.....	8
MOSFET PMIC	.....	9
30 +	.....	9
	.....	11
	.....	12
	.....	14
MOSFET	.....	14
	.....	16



18 Infineon
19 Infineon
21 On Semi
22 On Semi
23 On Semi 2020
24 On Semi
25
26
27 2019
28

32
33
34 IC IC
35
36
37
38
39
40



41 IC
42
43

51
52

54
55

150-200
 5%
 TI NXP
 100
 3
 5
 30
 20-30
 2020
 Model 3
 MOFET IGBT

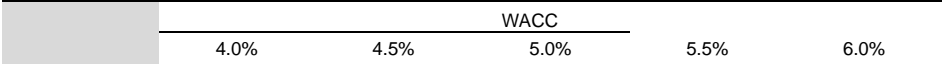
	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E
	33.63%	6.73%	-8.42%	17.41%	11.41%	12.40%	15.00%	15.00%	15.00%
/	82.38%	74.80%	77.16%	73.66%	73.63%	73.65%	73.65%	73.65%	73.65%
/	5.55%	5.56%	6.03%	2.0%	2.0%	2.0%	2.00%	2.00%	2.00%
/	2.04%	2.01%	1.95%	2.0%	2.0%	2.0%	2.00%	2.00%	2.00%
/	1.34%	1.35%	1.15%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	-75.43%	8.98%	-1.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	7.32%	29.81%	38.70%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%

Beta	0.8	T	7.00%
	2.50%	Ka	4.90%
	3.00%	Beta	0.84
	48.17	Ke	5.01%
	1216	E/(D+E)	100.00%
(E)	58571	D/(D+E)	0.00%
(D)	2752	WACC	5.00%



Kd	5.30%	10	2.00%
----	-------	----	-------

WACC 3



IDM

IC

MOSFET PMIC

MOSFET PMIC

MOSFET PMIC

MOSFET+PMIC

1



30 +

1983

4

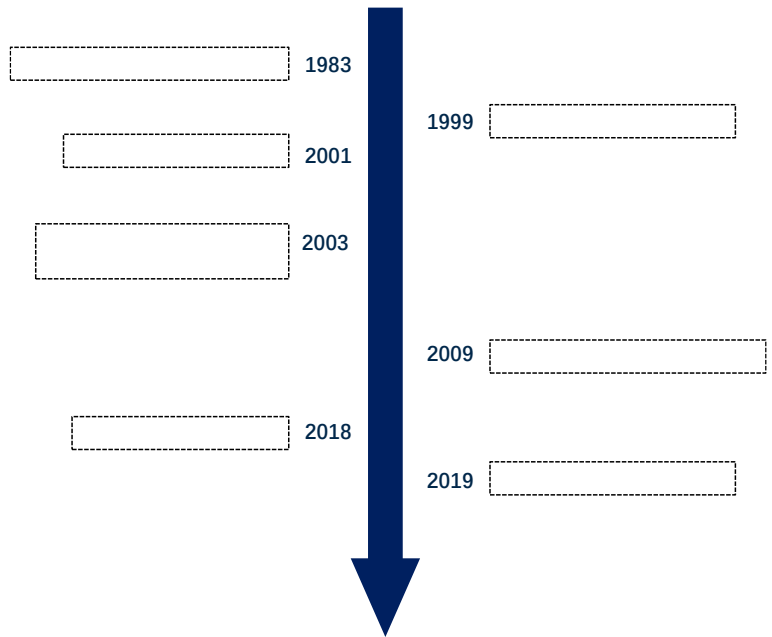
1999

6 MOS

6

8

2



2002

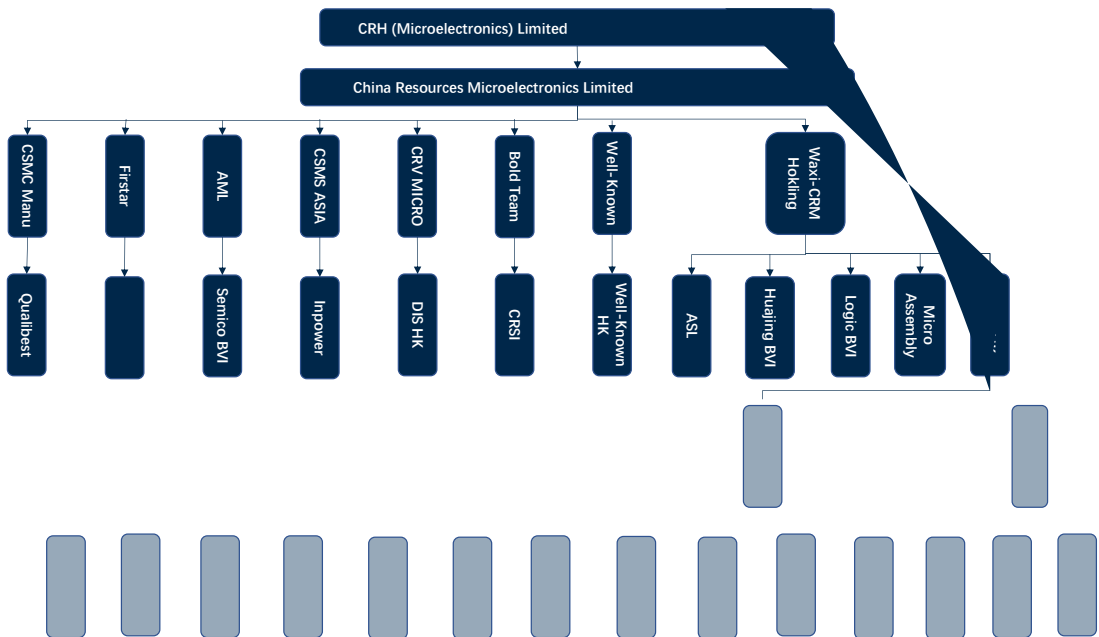
2008

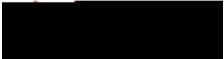
2017

2019

35%

3

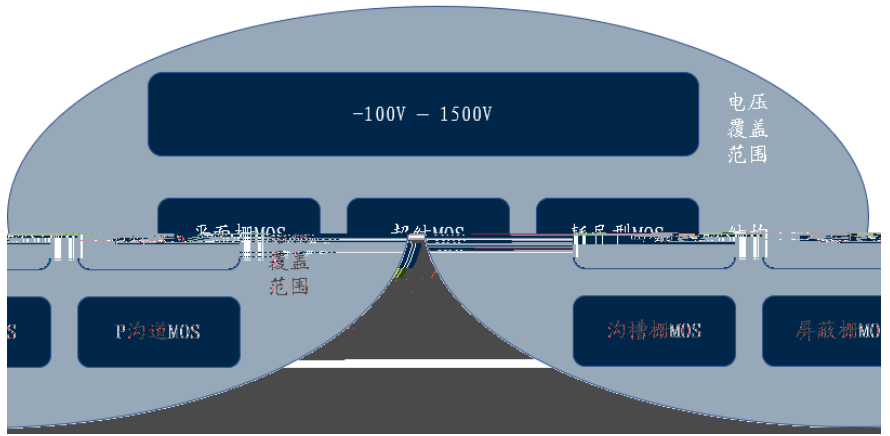




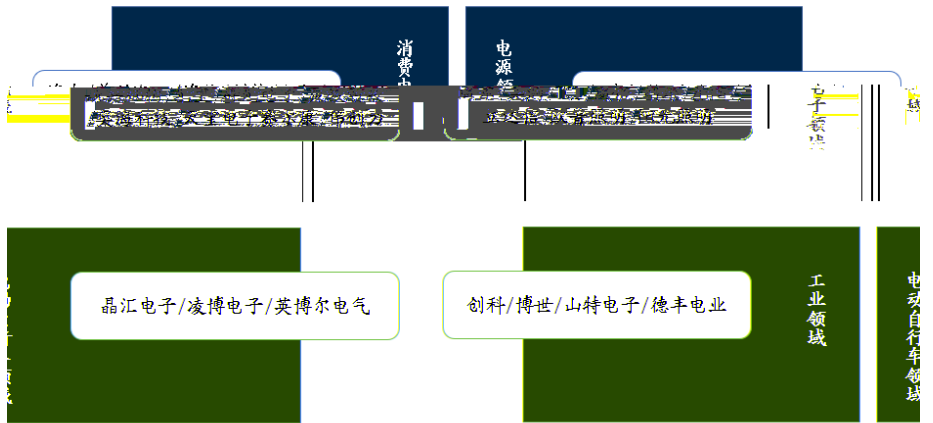
Infineon

ON

5 MOSFET



6



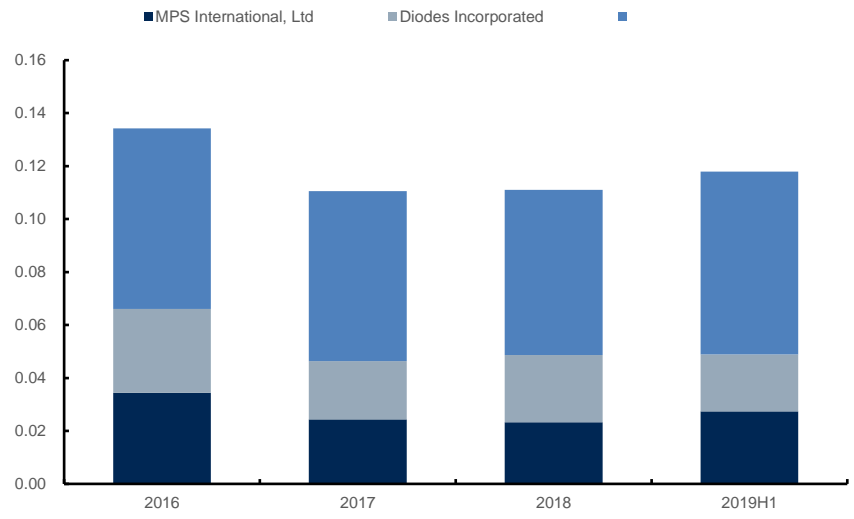
Diodes Incorporated

2016-2019

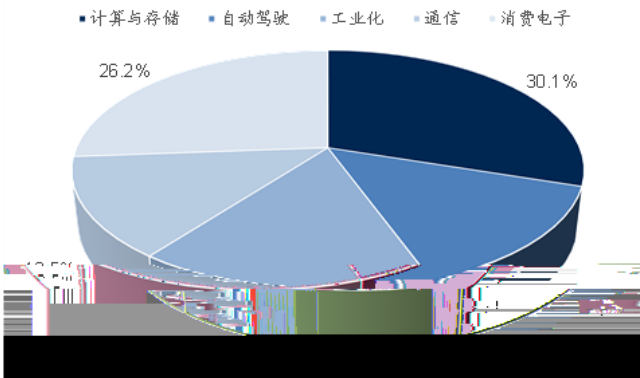
MPS

20%

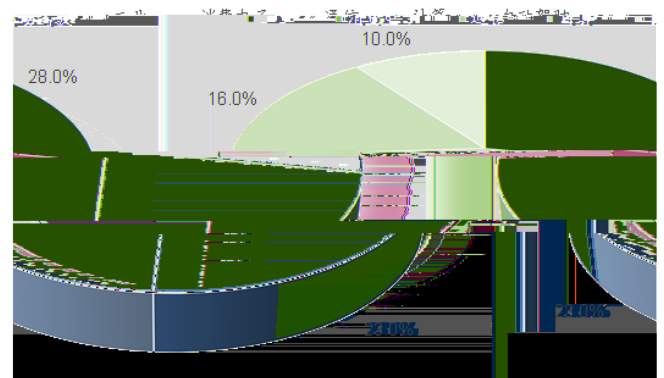
7

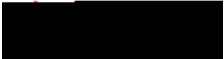


8 MPS



9 Diodes





DC

AC

DC/AC

AC/DC

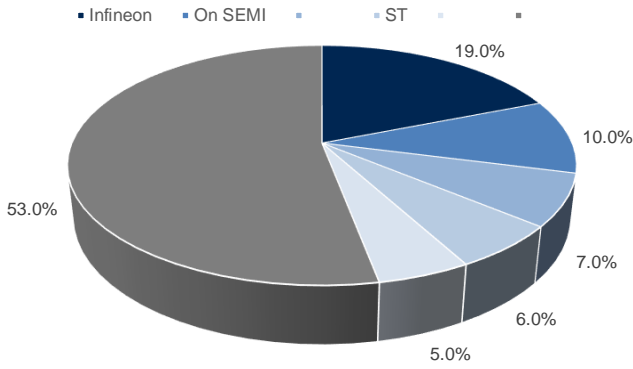
DC/DC

AC/AC

10

mosfet IGBT BJT

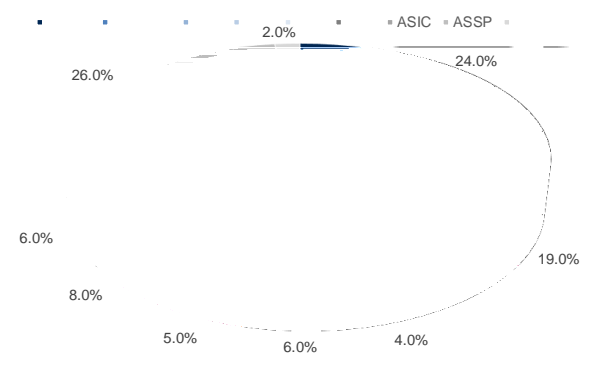
13



WSTS

14

5%

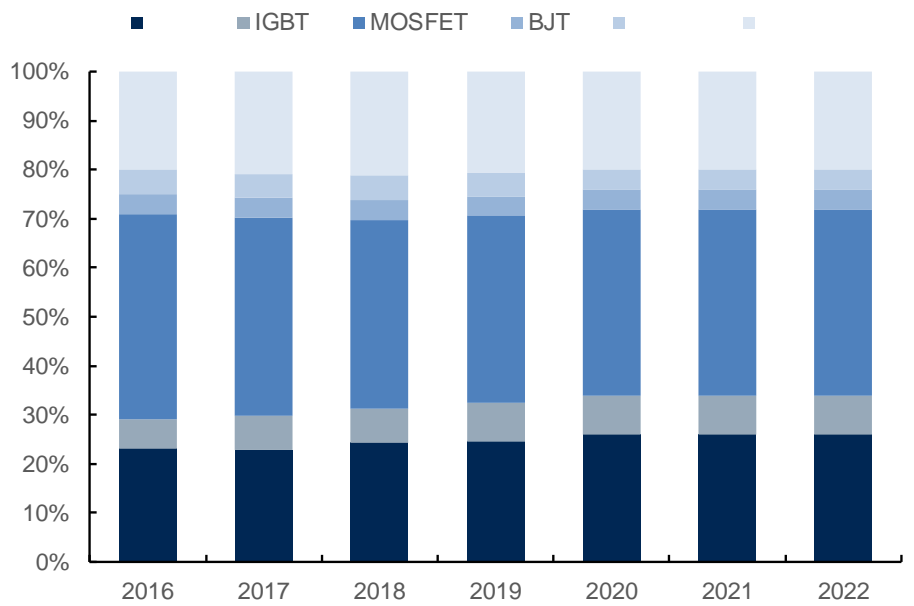


WSTS

IGBT MOSFET Infineon 27% 28% Renesas ST

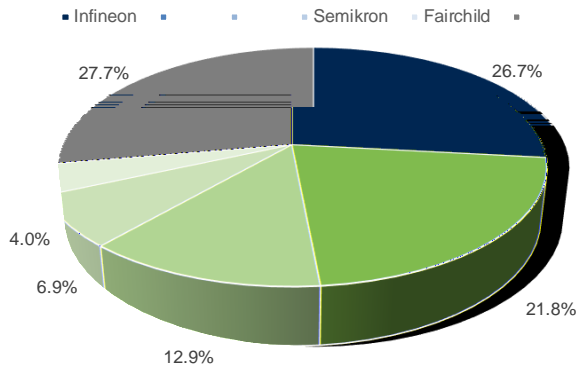
IGBT MOSFET

15



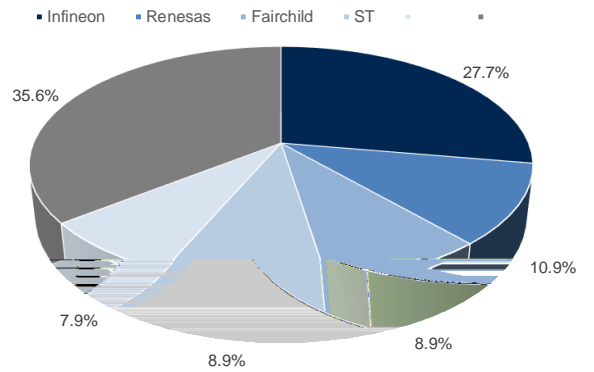
Yole

16 IGBT



IHS

17 MOSFET



IHS

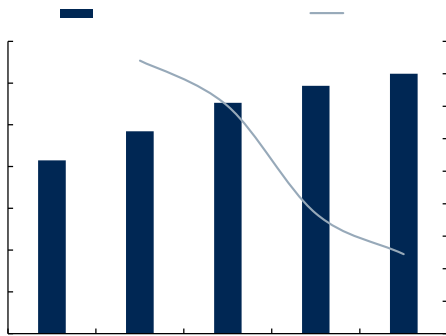
Infineon

1999

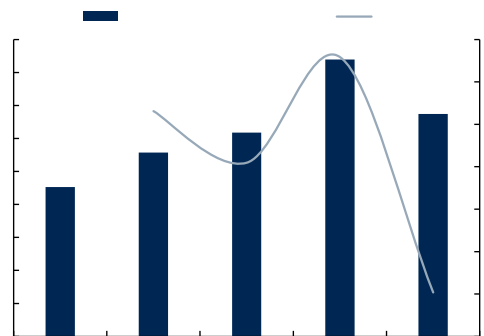
1999

2000

18 Infineon



19 Infineon



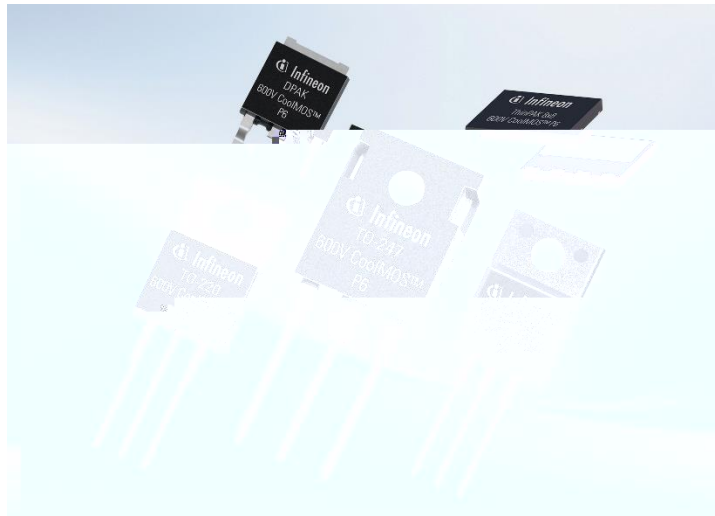
OptiMOS™

CoolSiC™

CoolGaN™

CoolMOS™

20 Infineon CoolMOS™ MOSFET



WSTS

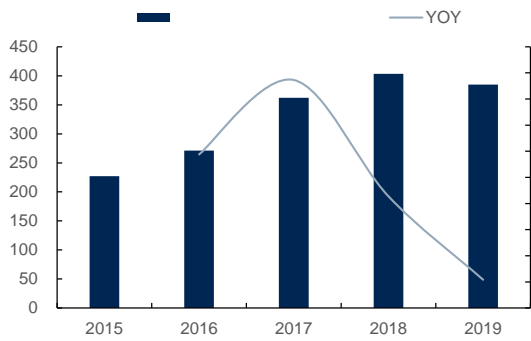
On SEMI

On Semiconductor Corporation

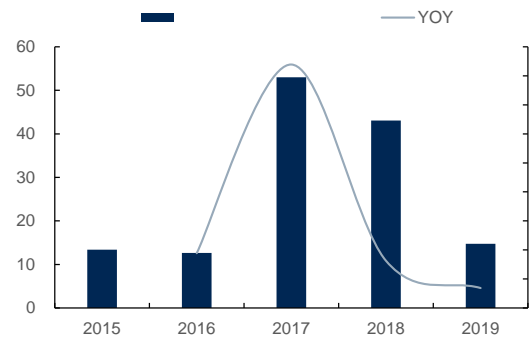
1999

LED

21 On Semi

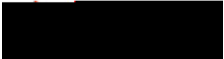


22 On Semi

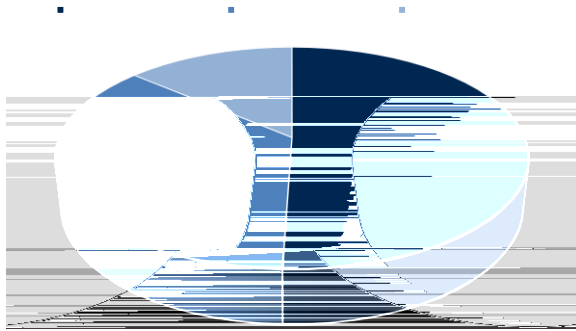


ASIC DSP

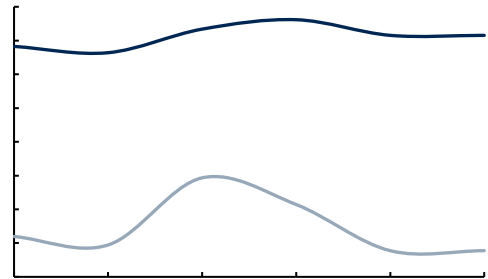
LED



23 On Semi 2020



24 On Semi



2015-2018

2019

2017

2020

50%

ST

ST

1987

SGS

Thomson

1998

5

SGS-

25

26

CMOS

Bi-CMOS BCD (Bipolar, CMOS, DMOS)

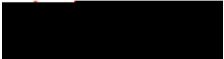
MEMS

FD-SOI

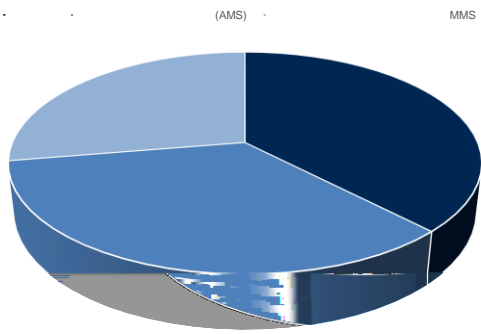
RF-SOI ()

Silicon Carbide

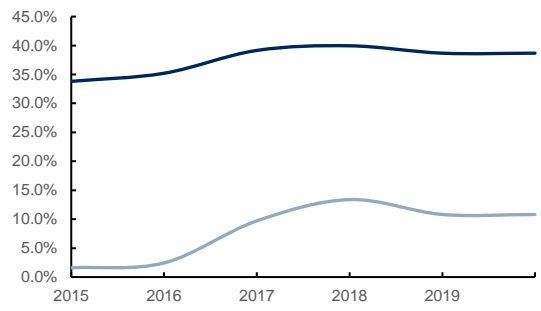
VIPOWER



27 2019



28



2019

2019

2015-2018
2019

38%

5

DC / DC

29

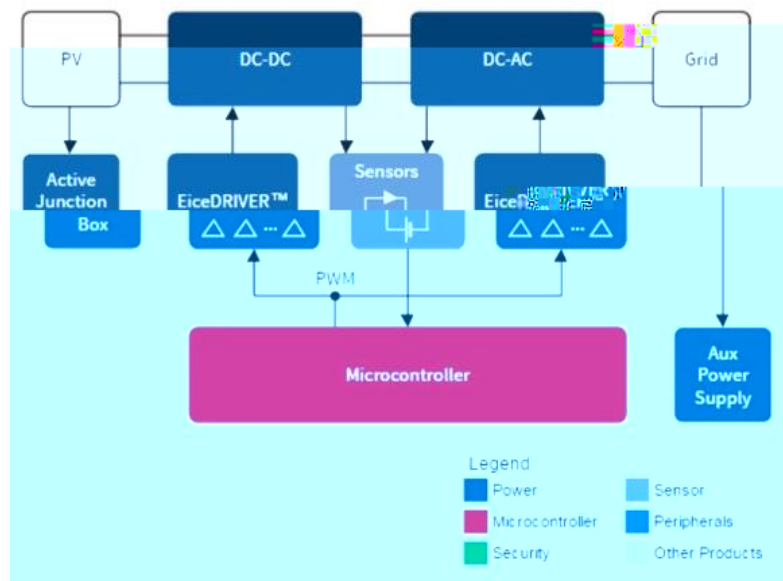
5

30

IGBT

20-30

30



Infineon

;

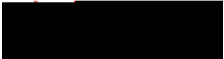


31

Infineon

IGBT MOSFET
/

DC / AC
;



PMIC- IC

PMIC- IC

33



34 IC IC

比较项目	模拟IC	数字IC
信号传输	光, 声音, 速度, 温度等自然现象 连续信号	1或0非连续信号
技术层次	设计门槛高, 学习曲线10-15年	电脑辅助设计, 学习曲线3-5年
产品认证与生命周期	认证期长 (约1年以上), 但生命周期也长	认证周期短 (约3-个月), 但生命周期也短
替代性	低	高 (可用标准产品替代)
产品特点	少量多样	量多单一
数字信号编	产品应用	逻辑运算处理与控制, 码与解码
ASP (平均零售价格)	低但稳定	因时效性而变化

IC

IC

IC

CMOS

IC

10
CMOS

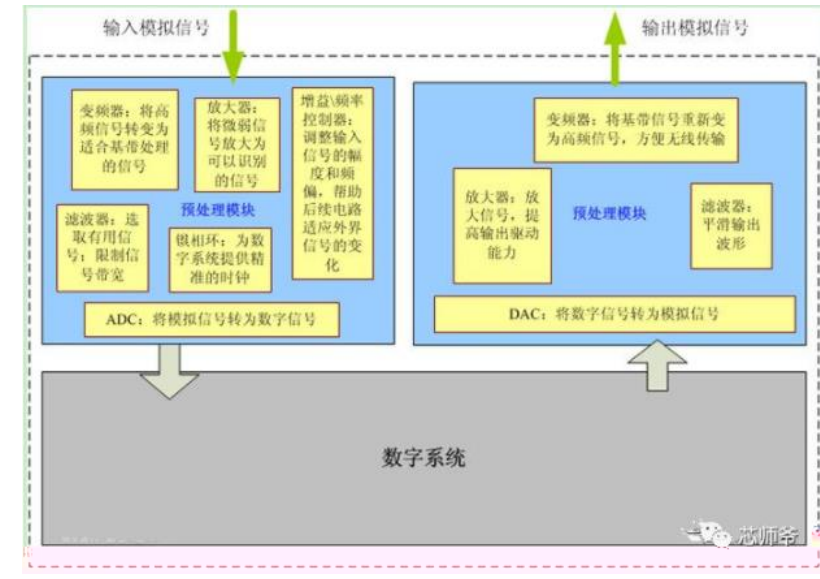
IC

IC

IC

IC
IC

35

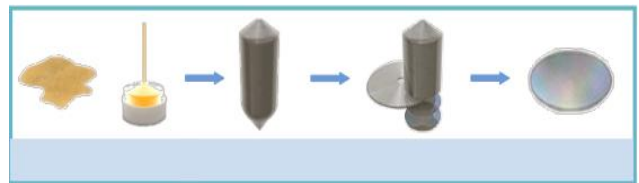


36

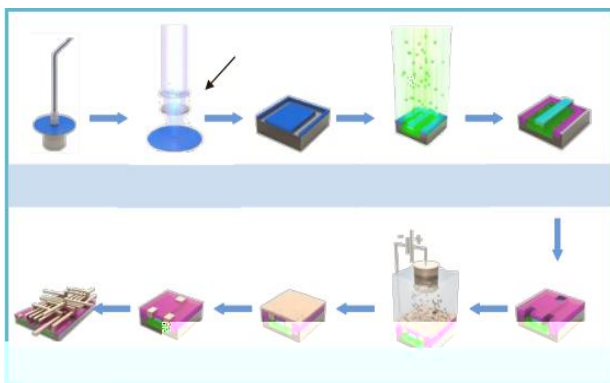


人

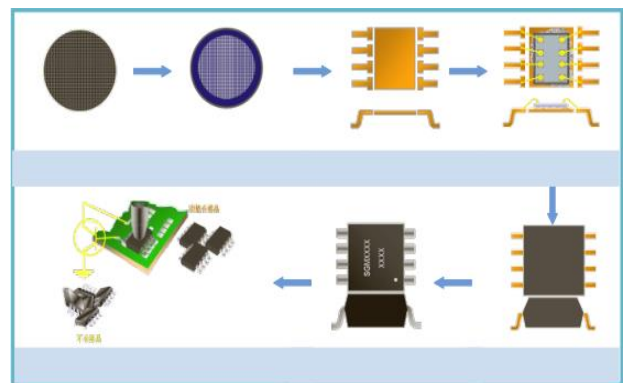
37

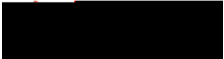


38



39





McClellan Report

545 6.6% 2022 2017

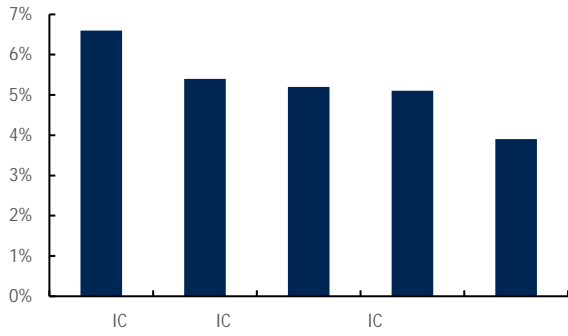
748

40

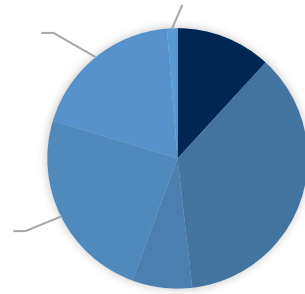
17-22

41

IC



:ICinsights



: ICinsights

()

WSTS
18/19/20
IC

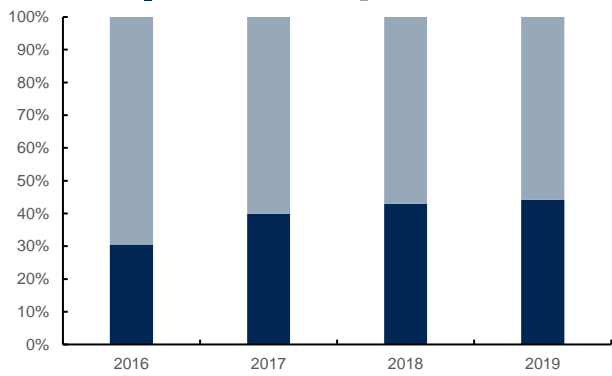
19

10.8%/-5%/5%

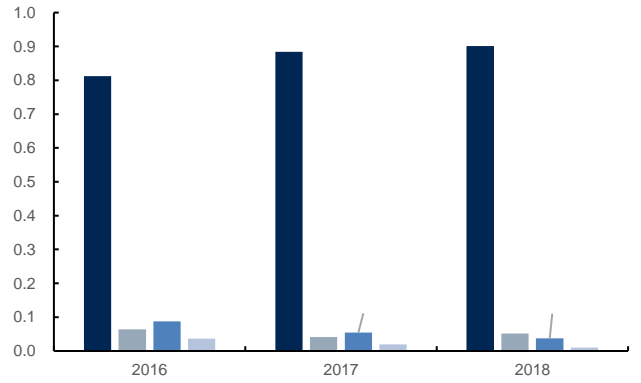
558

IC
IDM
IDM
Foundry
IDM
75.64%
2017

42

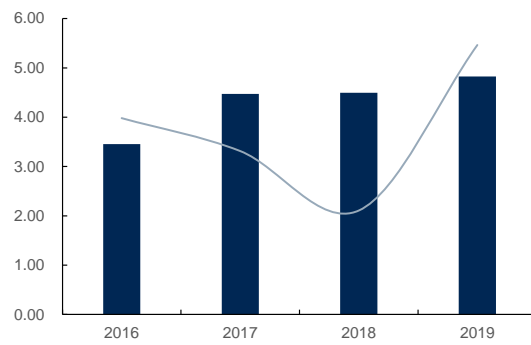


43



2018
2016-2019
7% 2017

44





48

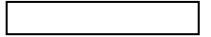
8		2016-2018	8	2017
	52.41%			
	8			
83.11%	99.01%			



2019

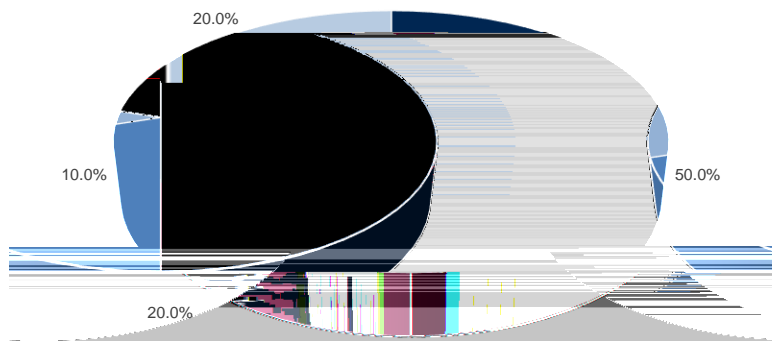
2020Q2

2020 PC 8 IC
MOSFET
IC MOSFET OEM/ODM 2020
PC
IC MOSFET
INTEL PC Tiger Lake 10 SuperFin
10 15% Thunderbolt 4 USB 4
40Gbps CPU
PC 8
IC IC IC MOSFET
IC MOSFET IDM



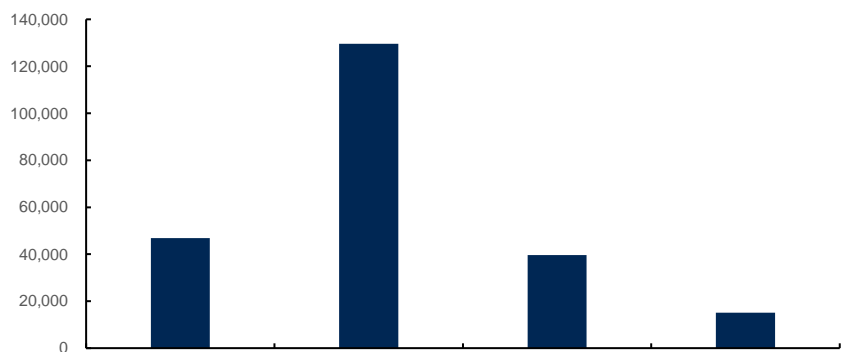
MOSFET IGBT 35% 2020 5 600-1200V SiC MOSFET IGBT 1.26 8 IPO 2018 9

58



MEMS 16000 90nm 8 BCD 2020 7 50% 8 MEMS 8 BCD 8 MEMS 8

59 8



150-200
 5% TI NXP
 100 3
 5
 30 20-30
 2020
 1 7 Model 3
 MOFET IGBT

	2017	2018	2019	2020E	2021E	2022E
	22.9	26.6	25.0	29.1	33.4	38.5
YOY	78.9%	15.8%	-5.9%	16.4%	15.0%	15.0%
	19.4%	34.0%	29.4%	34.3%	33.9%	33.5%
	35.2	35.7	31.8	37.6	40.9	45.1
YOY	16.1%	1.5%	-10.9%	18.2%	8.6%	10.3%
	16.3%	18.6%	17.7%	20.2%	20.2%	20.3%
	58.1	62.3	56.8	66.7	74.3	83.5
	17.5%	25.2%	22.8%	26.3%	26.4%	26.4%

	2019	2020E	2021E	2022E
	6271	5743	6743	7512
	4690	4431	4967	5531
	85	66	67	75
	126	112	135	150
	374	377	146	161
	0	31	60	109
	11	(0)	0	0
	(72)	37	0	0
	(349)	(284)	0	0
	586	478	1368	1485
	5	28	0	0
	591	506	1368	1485
	53	(6)	0	0
	108	112	302	328
	429	401	1066	1157

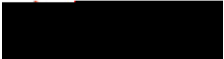
Wind

20-22

10.7/11.6/13.0
78.0-80.8

55/51/45X

	2017	2018	2019E	2020E	2021E
()	6,271	5,743	7,417	8,263	9,288
(+/-%)	6.73%	-8.42%	29.15%	12.56%	13.64%
()	429	401	1,173	1,273	1,426
(+/-%)	511.02%	-6.68%	192.60%	8.58%	11.97%
EPS	0.52	0.48	0.96	1.05	1.17
()	6,271	5,743	6,743	7,512	8,444
(+/-%)	6.73%	-8.42%	17.41%	11.41%	12.40%
()	429	401	1,066	1,157	1,296
(+/-%)	511.02%	-6.68%	166.00%	8.58%	11.97%
EPS()	0.52	0.48	0.88	0.95	1.07
()	6,271	5,743	6,068	6,761	7,600
(+/-%)	6.73%	-8.42%	5.67%	11.41%	12.40%
()	429	401	959	1,042	1,166
(+/-%)	511.02%	-6.68%	139.40%	8.58%	11.97%
EPS	0.52	0.48	0.79	0.86	0.96
	830	830	1216	1216	1216



TV WACC TV

1
10

2 WACC WACC

2.6% 6.0%

WACC

3 10 TV 2% 10

4

2018 PE PE

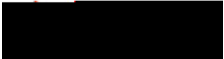
1 3

2

3

2 /





2019 2020E 2021E 2022E

2019 2020E 2021E 2022E



		6 20%
		6 10%-20%
		6 ±10%
		6 10%
		6 10%
		6 ±10%
		6 10%



518001	1012 0755-82130833	18	
200135	1199	1	12
100032	6	9	

