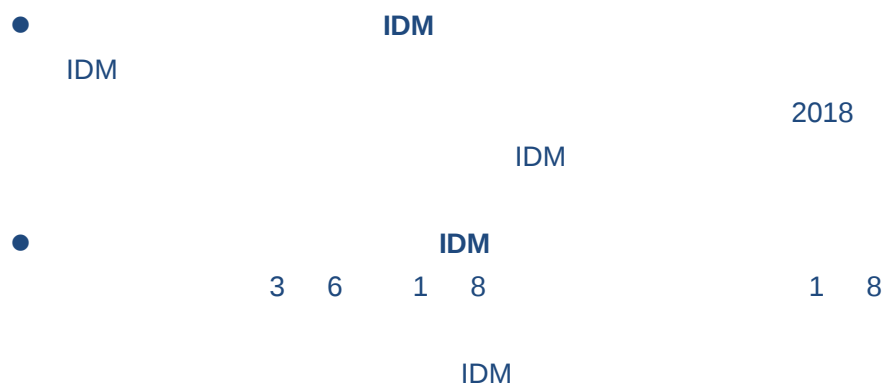


688396.SH

IDM

29.4~37.8

2020-02-20

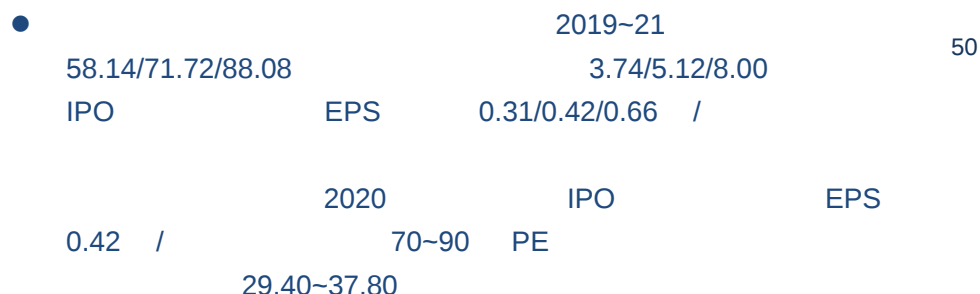


	44976.10
%	7.17
%	0
%	25.20
%	2.01
%	5.96
%	8.57
%	49.76

33694.31

87898.21

MOSFET



SAC S0260514050002
021-60750532
xuxingjun@gf.com.cn



SAC S0260519060001
SFC CE No. BFS478
021-60750632
gfwangliang@gf.com.cn



SAC S0260517080012
021-60750632
wanglu@gf.com.cn

021-60750632

wangzhaoguang@gf.com.cn

	2017A	2018A	2019E	2020E	2021E
	5,876	6,271	5,814	7,172	8,808
%	33.6	6.7	-7.3	23.3	22.8
EBITDA	1379	1500	1348	1547	1860
%	56.3	8.8	-10.1	14.8	20.3
	70	429	374	512	800
%	123.2	511.0	-12.9	37.0	56.2
EPS /	0.08	0.52	0.43	0.42	0.66
	2.01	1.79	2.08	1.21	1.48
ROE %	1.8	10.4	9.0	5.8	8.4

2017~19

2020

IPO

.....	5
.....	6
IDM+	6
.....	11
.....	13
100%	14
.....	16
/	19
.....	19
.....	21
.....	24
.....	27
.....	27
.....	29
.....	32
.....	34
.....	35
.....	36

12	2018	12
13		13
14	2018	13
15	2018	14
16		25
17		30
18		31
19		32
20		34
21		35

	IDM								2018
		IDM							
	2020	70-90	PE						
29.40~37.80									
	2019~21		58.14/71.72/88.08						
	-7.3%/23.3%/22.8%		3.74/5.12/8.00					IPO	
	EPS	0.31/0.42/0.66	/						
		2020		PE	175x				
52x	59x	95x			8				
					8				
MOSFET									
		2020		IPO				EPS	0.42
/		70~90	PE						
29.40~37.80									
1		IDM							
2									
3									

IDM+

2

	2019	1-6	2018		2017		2016	
	102,793.73	90.16%	241,885.78	90.14%	206,857.89	88.44%	108,118.07	81.19%
	6,193.05	5.43%	13,764.40	5.13%	9,694.05	4.14%	8,535.64	6.41%
	4,190.38	3.68%	9,937.33	3.70%	12,750.40	5.45%	11,638.61	8.74%
IC	829.34	0.73%	2,761.23	1.03%	4,603.45	1.97%	4,880.93	3.67%
	114,006.51	100.00%	268,348.74	100.00%	233,905.79	100.00%	133,173.25	100.00%

1

90%

IC MOSFET IGBT

SBD FRD IC

MOSFET MOSFET

IGBT SBD FRD Trench-FS

600V-6500VIGBT SBD 8

Trench FRD

-100V 1500V

3

MOSFET	MOS MOS	MOS MOS	-100V-1500V
IGBT		600V-1200V	
SBD	45V-150V	SBD SBD	200mA-30A
FRD		200V-6500V	

IC AC-DC

LED IC LED

LED IC BMSICBMSIC

IC IC

IC BCD CMOS

4 IC

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

2

MEMS MEMS ESD
MEMS UL

5

MEMS		

3

CPU CPU CPU CPU CPU
OTP MTP FlashCMOS MCU MCU MCU
4 8 16 32

6

MCU	MCU PC MCU				
MCU	MCU MCU				
MCU	8	16	32	CPU	

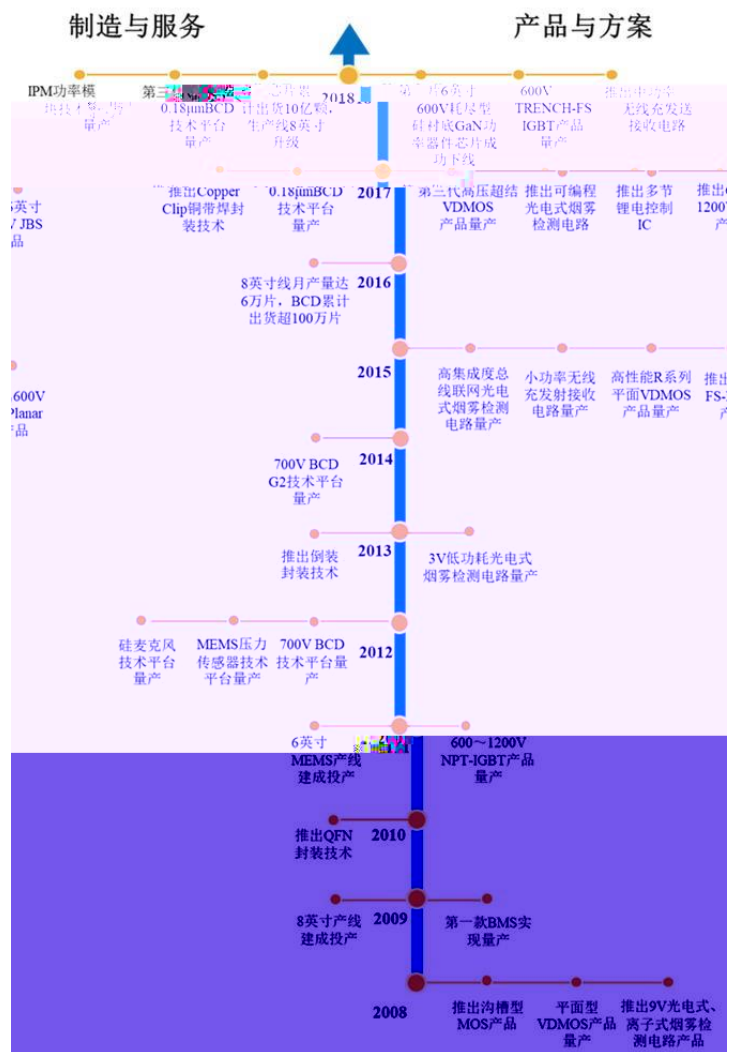
2.

7

	2019	1-6	2018		2017		2016	
	105,984.39	71.29%	267,427.00	74.87%	256,329.27	72.83%	218,777.02	72.17%
	36,930.19	24.84%	78,568.04	22.00%	82,011.16	23.30%	72,936.51	24.06%
	5,757.47	3.87%	11,195.78	3.13%	13,635.27	3.87%		

			2018
--	--	--	------

1 2008-2018



Diodes Incorporated

MPS International, Ltd

10 2018

1	DiodesIncorporated	15,941.15	2.54%
2	MPSInternational,Ltd	14,621.37	2.33%
3		13,907.58	2.22%
4			

13

	TCL
	TTi

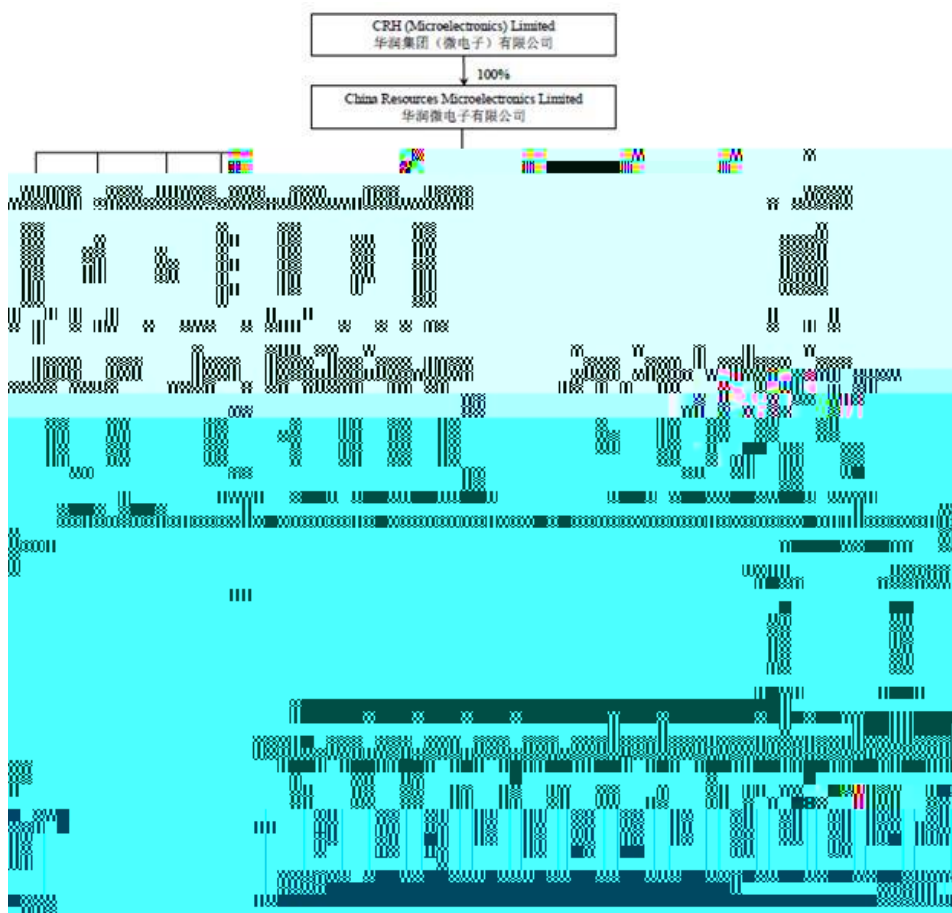
2004
2018
IDM

14 2018

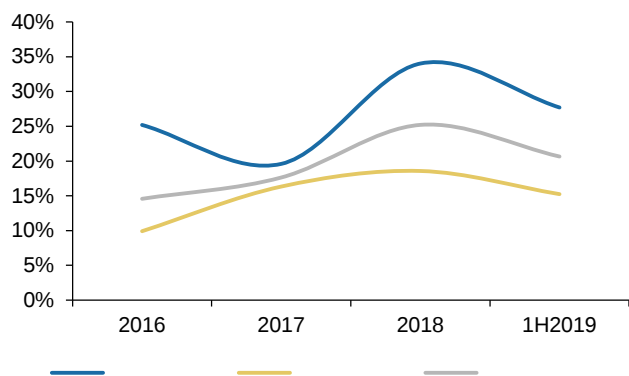
		2018	
1		509	
2		248	
3		239	
4		225	
5		111	
6	()	107	
7		92	
8		66	
9		65	
10		63	IDM

15 2018

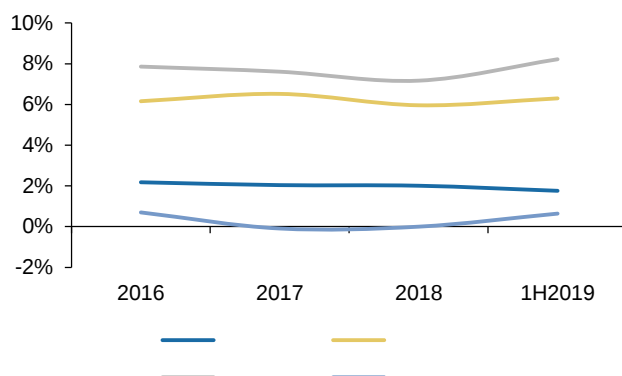
		2018
1		21.7
2		18.5
3		17.1
4		8.1
5		7.7
6		7.2
7		6.9
8		6



4

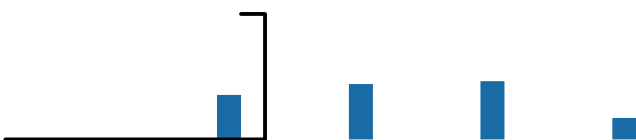


5



- 2016~18 2019 6~8%
- 2016 2018 2019 2% 2018 -30270 42944 511% 2019 16435

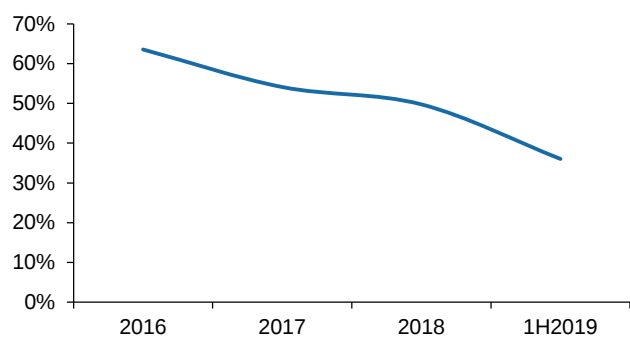
6



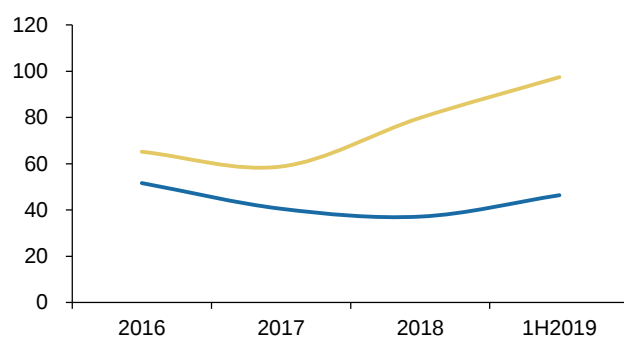
7

- 2019 6 30 36.03%
- 2016 2018

8

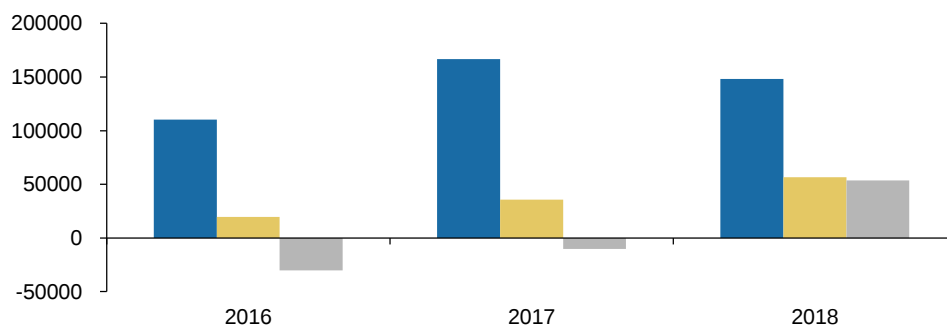


9



2016~2018	110342	166746
148244		
19695	35860	56712

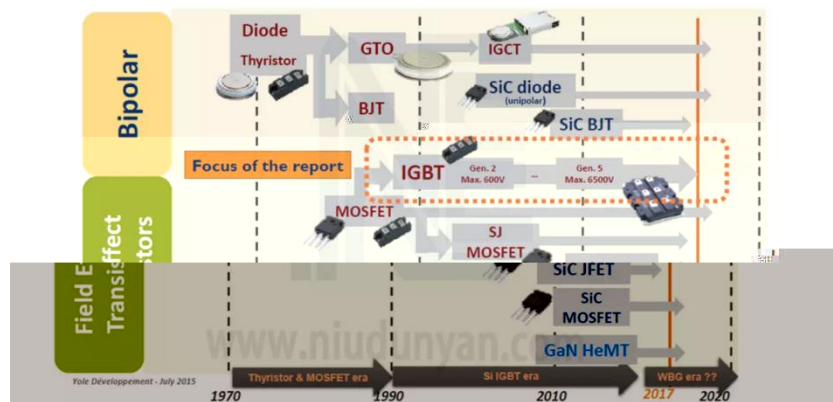
10



/

PN 1958 1940 GE 20 60 70
80 MOS

11



Yole

IC
MOSFET IGBT

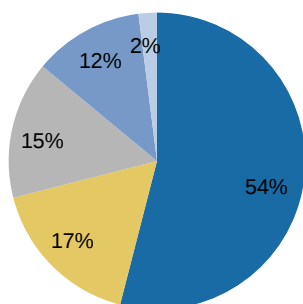
IC

IC

IHSMarkit
2018

IC MOSFET IGBT
60.98% 20.21% 13.92%

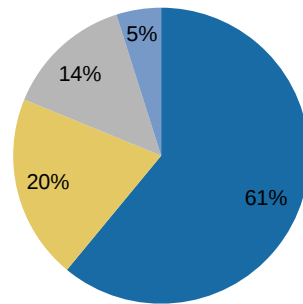
12 2017



■ IC ■ MOSFET ■ IGBT ■

Yole IHS Gartner

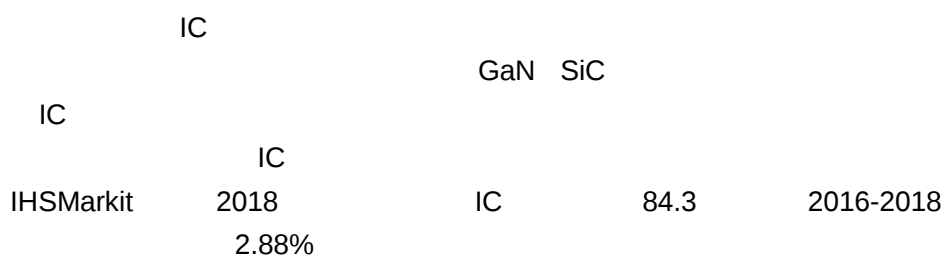
13 2018



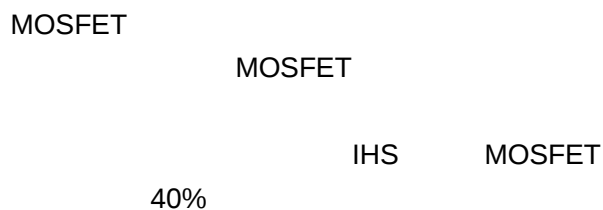
■ IC ■ MOSFET ■ IGBT ■

IHS Markit

1 IC



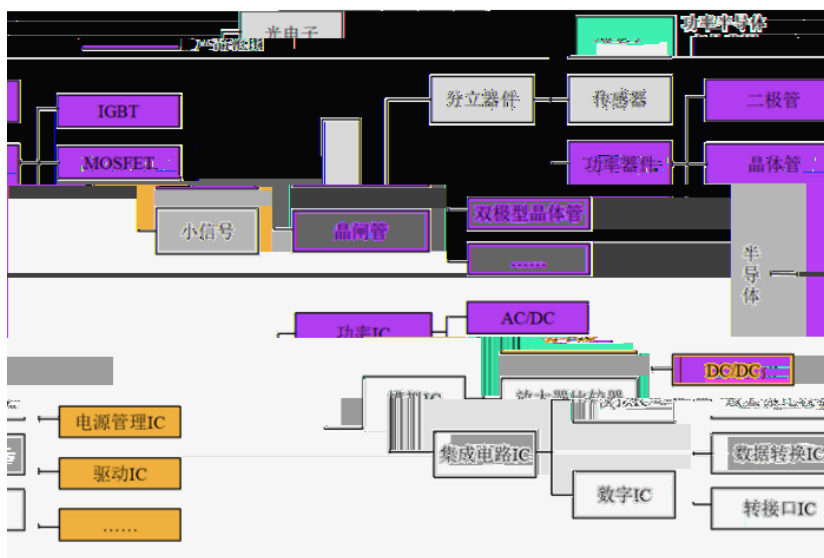
2 MOSFET



3 IGBT



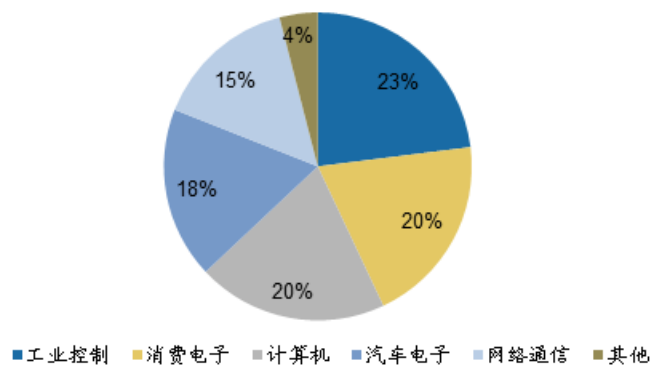
14



IHS

			IHSMarkit
2017	23%	20%	20%
18%	18%		

15 2017

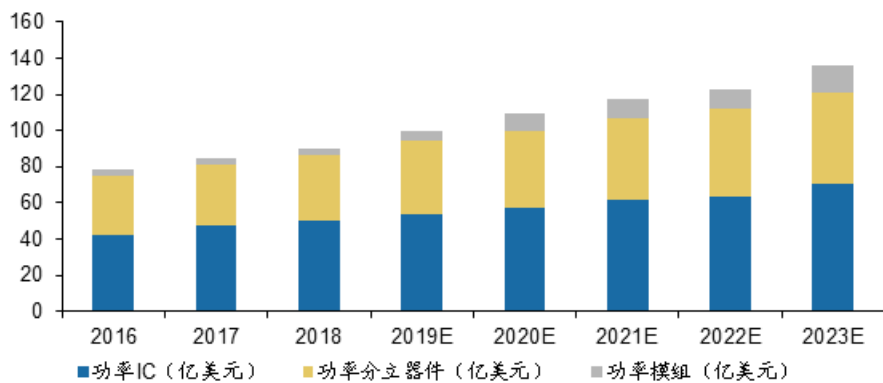
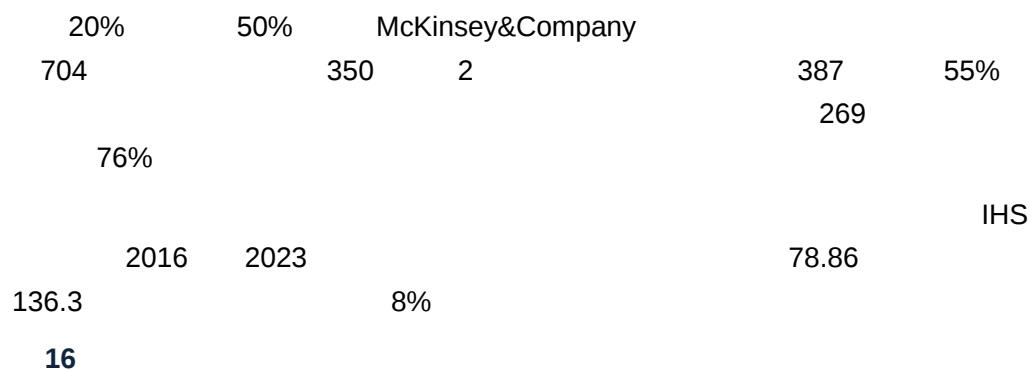


IHS Markit

1

MOSFET

IGBT



IHS

2

2025

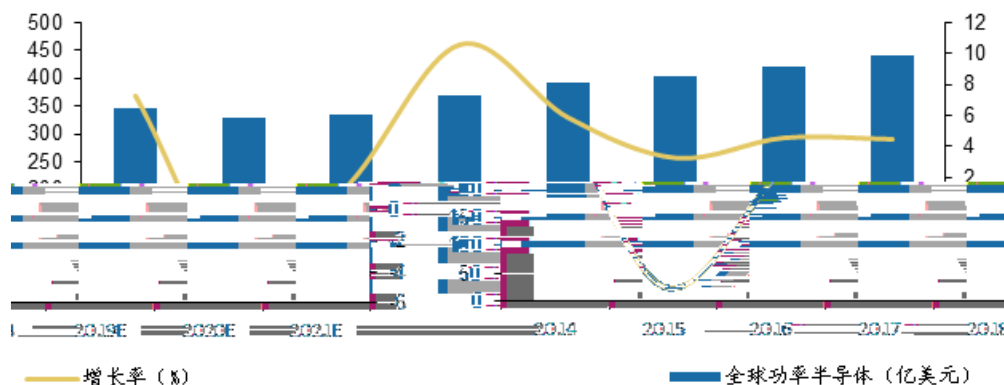
2017



3

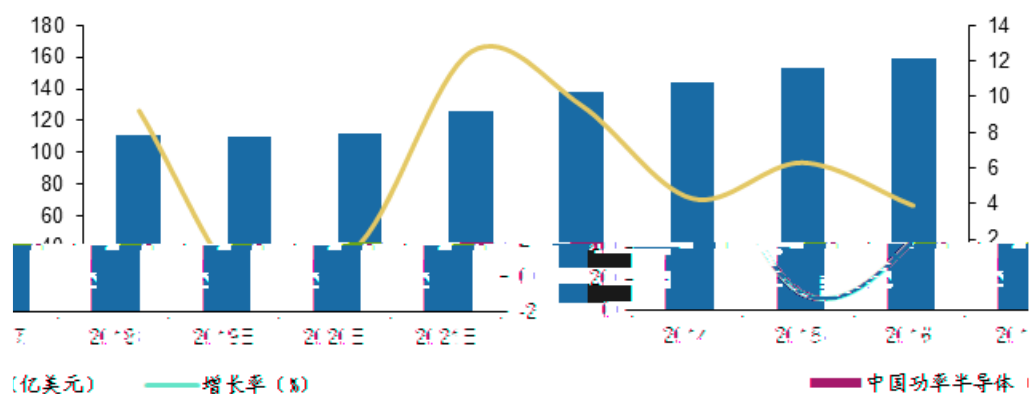
Category	Value	Category	Value	Category	Value
2017	2.44	2017	34%	2022	5.85
65%	Infineon			0.7	9.5
		9.5			
2022		2017	26.45		57.79
2017	2022	16.9%			
4	5G				
	5G				
		5G	4G	3	
					5G
5G		PA			
		IC	5G		MassiveMIMO
	MOSFET				
		2017	57.45	2021	70.81
3.38%	7.35%				
	IHSMarkit	2018			391
2021		441		4.1%	
		2018	138		9.5%
	35%				2021
	159		4.8%		

17 2014-2021



IHS

18 2014-2021



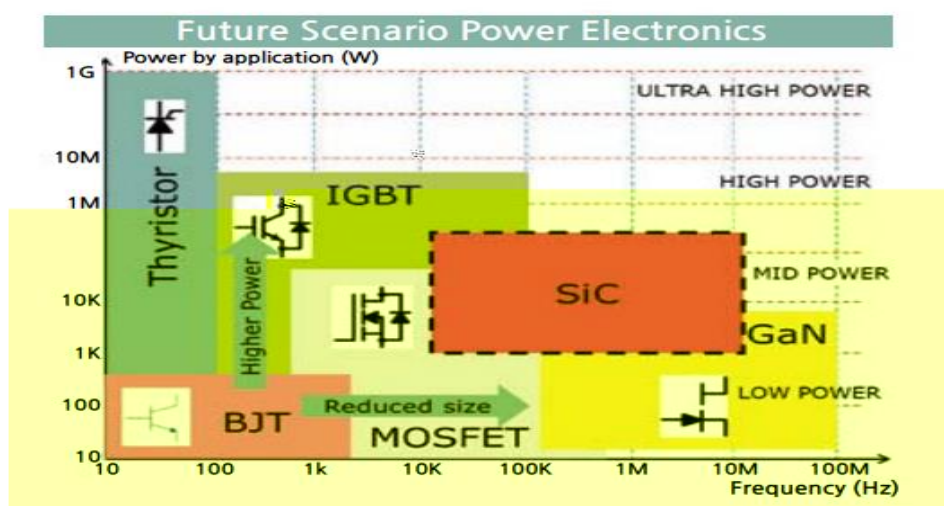
IHS

IGBT

MOSFET

SiC GaN

19



- 1.1eV
- 1.4
-

SiC GaN
5G

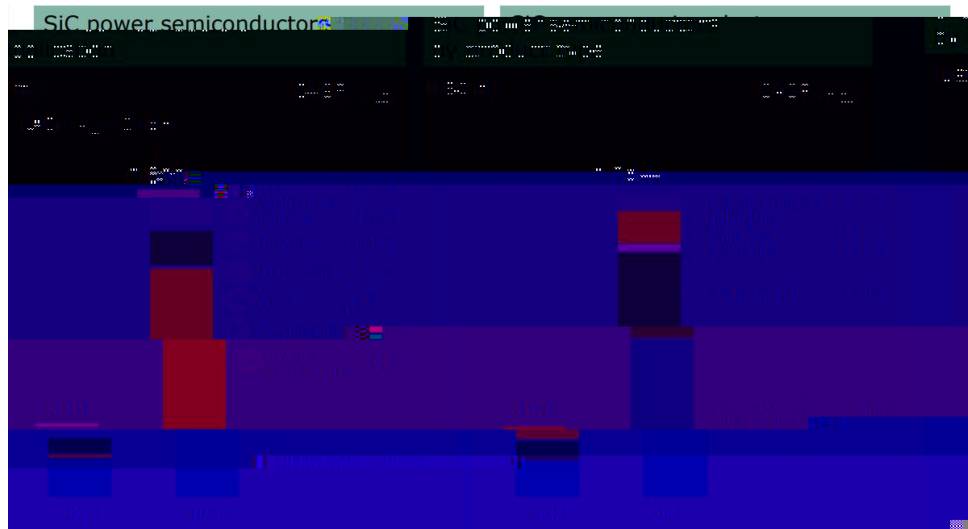
16

eV	K
1.1	1221
0.7	1678
1.4	1511
3.05	2826
3.4	1973
6.2	2470
5.5	3800
3.37	2248

SiC

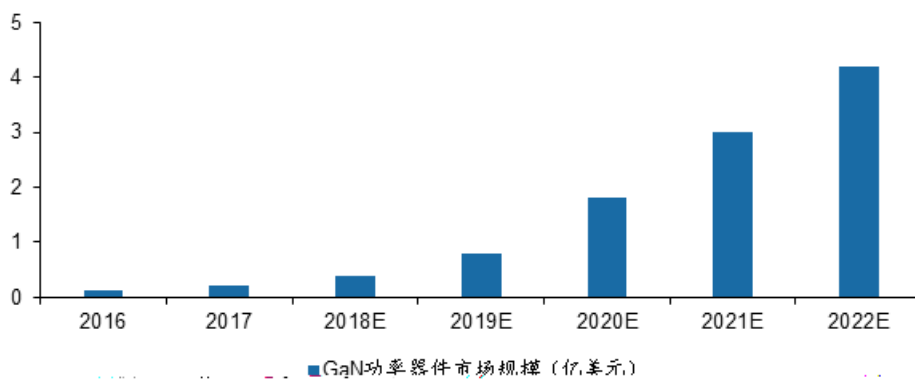
SiC SiC PFC / PV UPS
ROHM Cree SDK Infineon
SiC IHS 2023
16.4

20 SiC

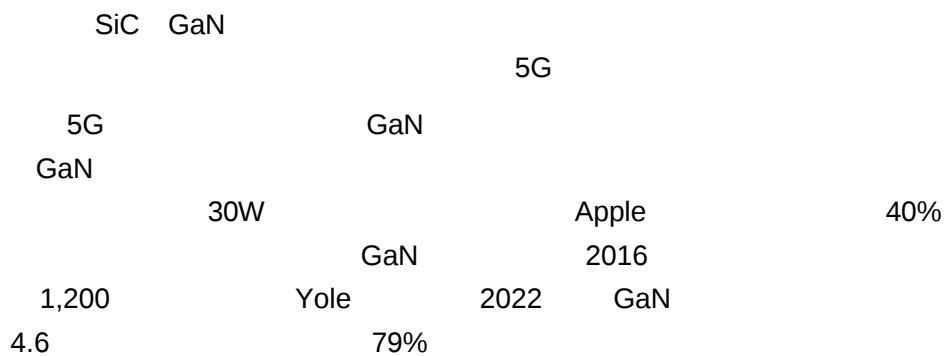


IHS

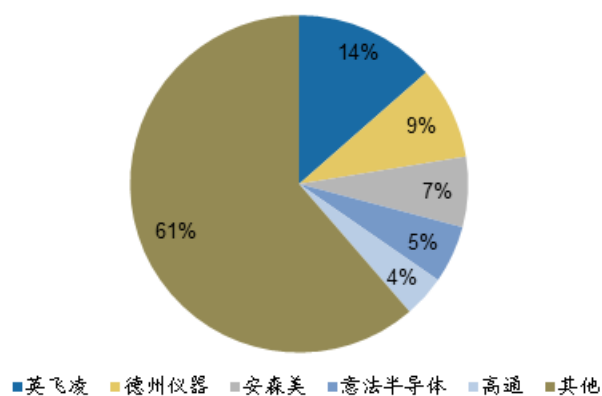
21 GaN



Yole



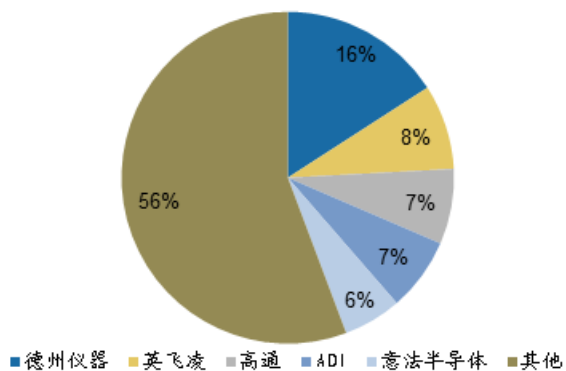
IHS 2018 39%
14%
22 2018



IHS

IC

IHS 2018
ADI
IC 44% 16%
23 2018 IC



IHS

MOSFET	iHS	62%	27%
--------	-----	-----	-----

24	2018	MOSFET
----	------	--------



IGBT	IHS	2018	IGBT	67%
		34%		
		600	1700V	
	650V		400V	

2018 IHS 138
391 35% 2018
Dialog
42% 14%

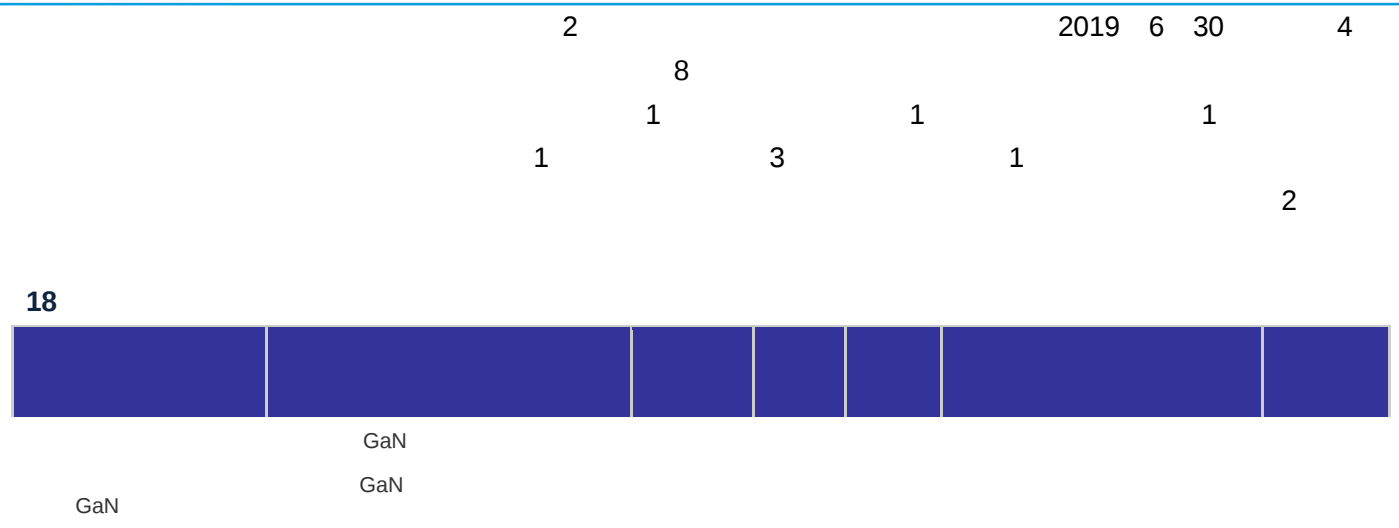
26 2018

17

MOSFET	MOS	1				FOM		MOS	MOSFET
			2		3				
	VDMOS	1				FOM	2	VDMOS	
IGBT				UIS	3	EMI			
	MOS	1			2			MOS	
					FOM	3			
SBD	IGBT	1	Trench-FS			2		IGBT	
					3				
	SBD	1	8	Trench	2	45V-150V		SBD	SBD
FRD			3						
	FRD	1			2			FRD	
			3					FRD	
IC	IC	1				WPC	QI	2	
						EMI	3		
	IC								IC
LED			2-7		5-8	10			
	LED	IC	1		700V	2	3	LED	IC
		1		2		3			M-BUS

						2016	2018
	34,558.55	44,742.09	44,976.10				
7.86%	7.61%	7.17%	2019	6	30	7,937	
641		2,290					36.93%

5



8

300000

19

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

1 8

8 BCD

8 MEMS

BCD MEMS 16,000

2

IC

MEMS

3

4

2019-2021

72,555.35

60,000.00

IDM

IC

20

	2016	2017	2018	2019E	2020E	2021E
	4,397	5,876	6,271	5,814	7,172	8,808
YoY		33.6%	6.7%	-7.3%	23.3%	22.8%
	637	1,035	1,581	1,265	1,766	2,304
	14.5%	17.6%	25.2%	21.7%	24.6%	26.2%
	3,032	3,520	3,572	2,847	3,024	3,213
YoY		16.1%	1.5%	-20.3%	6.2%	6.3%
	300	575	663	417	501	598
	9.9%	16.3%	18.6%	14.6%	16.6%	18.6%
	2,188	2,563	2,674			

2019

Q4

2020 5G

IDM

2019/20/21

28.47/30.24/32.13

-20.3%/6.2%/6.3%

14.6%/16.6%/18.6%

2019

IDM

2016 2018

IHS Markit 2018

12	31	2017A	2018A	2019E	2020E	2021E
		4,598	5,106	5,191	10,140	11,579
		1,219	1,538	1,916	6,155	6,724
		1,322	1,177	1,160	1,428	1,752
		900	1,181	1,010	1,200	1,443
		1,157	1,211	1,105	1,357	1,660
		5,149	4,886	4,881	5,006	4,960
		0	0	0	0	0
		4,226	3,898	3,921	3,975	3,960
		397	351	301	351	301
		268	294	317	338	357
		257	343	343	343	343
		9,747	9,992	10,072	15,146	16,539
		2,409	4,654	4,606	4,994	5,488
		0	0	0	0	0
		1,012	916	906	1,081	1,304
		1,397	3,737	3,701	3,913	4,184
		2,867	318	318	318	318
		0	0	0	0	0
		0	0	0	0	0
		2,867	318	318	318	318
		5,276	4,972	4,925	5,312	5,806
		830	830	879	1,216	1,216
		6,022	6,021	5,972	9,709	9,709
		-3,479	-3,049	-2,675	-2,163	-1,363
		3,832	4,148	4,175	8,762	9,562
		638	872	972	1,072	1,172
		9,747	9,992	10,072	15,146	16,539

12	31	2017A	2018A	2019E	2020E	2021E
		1,667	1,482	1,725	1,365	1,669
		-103	538	474	612	900
		1,372	953	1,005	1,075	1,146
		196	-95	181	-432	-499
		202	87	66	110	123
		-605	-575	-1,000	-1,200	-1,100
		-570	-533	-1,000	-1,200	-1,100
		0	0	0	0	0
		-35	-42	0	0	0
		-267	-627	-347	4,074	0
		0	-253	0	0	0
		0	85	0	4,074	0
		-267	-459	-347	0	0
		795	281	378	4,240	569
		434	1,200	1,538	1,916	6,155
		1,200	1,517	1,916	6,155	6,724

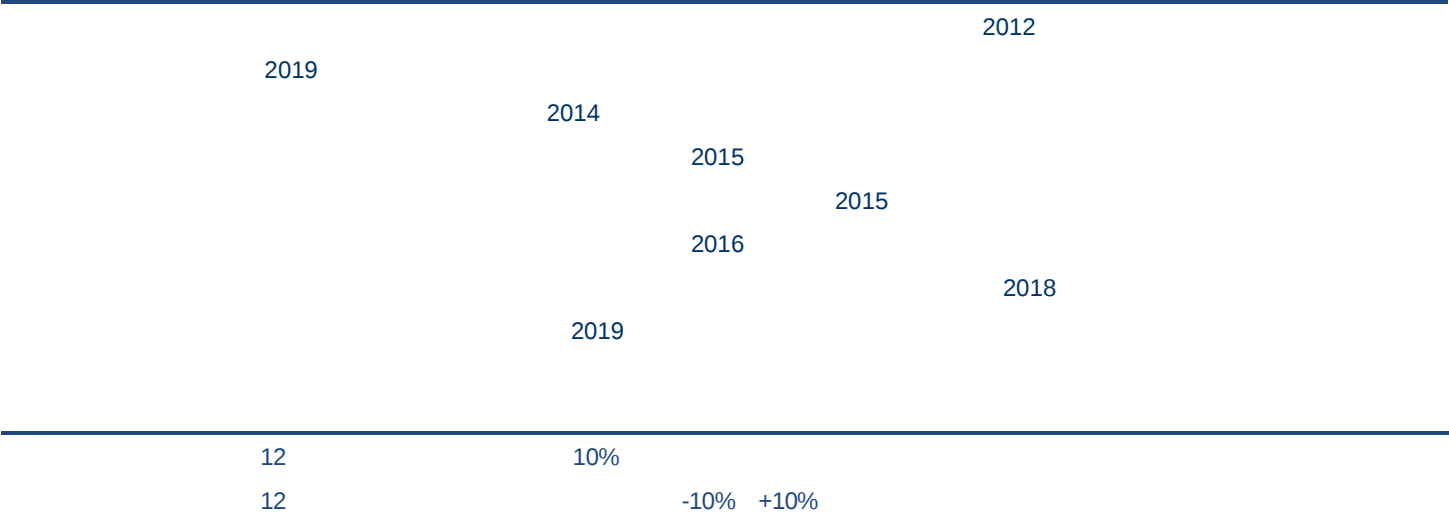
12	31	2017A	2018A	2019E	2020E	2021E
		33.6%	6.7%	-7.3%	23.3%	22.8%
		87.6%	1376.1%	-11.1%	29.2%	47.0%
		123.2%	511.0%	-12.9%	37.0%	56.2%

12	31	2017A	2018A	2019E	2020E	2021E
		5,876	6,271	5,814	7,172	8,808
		4,840	4,690	4,550	5,406	6,503
		79	85	78	97	119
		120	126	116	158	194
		383	374	320	466	573
		447	450	407	574	705
		-5	0	-43	-61	-97
		145	72	66	110	123
		0	0	0	0	0
		-34	11	0	0	0
		-46	586	521	672	989
		-13	5	0	0	0
		-59	591	521	672	989
		44	53	47	60	89
		-103	538	474	612	900
		-173	108	100	100	100
		70	429	374	512	800
EBITDA		1,379	1,500	1,348	1,547	1,860
EPS		0.08	0.52	0.43	0.42	0.66

ROE
ROIC

		17.6%	25.2%	21.7%	24.6%	26.2%
		-1.7%	8.6%	8.2%	8.5%	10.2%
		1.8%	10.4%	9.0%	5.8%	8.4%
		0.3%	8.4%	5.5%	7.0%	10.1%
		54.1%	49.8%	48.9%	35.1%	35.1%
		2.6%	24.5%	24.3%	16.2%	14.8%
		1.91	1.10	1.13	2.03	2.11
		1.51	0.83	0.89	1.77	1.83
		0.68	0.64	0.58	0.57	0.56
		4.89	5.32	5.32	5.32	5.32
		6.12	4.51	4.51	4.51	4.51
		0.08	0.52	0.43	0.42	0.66
		2.01	1.79	1.96	1.12	1.37
		4.62	5.00	4.75	7.21	7.86

P/E
P/B
EV/EBITDA



1

2

/

/

/

/

/

5

/

/

(1)

12

(300373)
