

2020 05 26

	40.6
	493.67
	96.28
	121,593
	23,714
12 /	55.00/31.77

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IDM

688396

	2018A	2019A	2020E	2021E	2022E
	6271	5743	6543	7515	8667
(+/-%)	6.7%	-8.4%	13.9%	14.8%	15.3%
	429	401	472	601	702
(+/-%)	511.0%	-6.7%	17.8%	27.3%	16.8%
EPS	0.35	0.33	0.39	0.49	0.58
PE	115	123	105	82	70

IDM

MOSFET

2019
2019

2020 Q1

BCD

2018 -100V 1500V MOSFET MOSFET
IGBT Trench-FS
600V-6500V IGBT
6 247 8 133
BCD BCD SOI BCD BCD 5-700V
GaN SiC

400
36%

	SiC Si		GaN		SiC			Si
	2018		5		2024			20
					IDM			
	2020-2022			4.73	6.01	7.02		
EPS	0.39	0.49	0.58	PE	104.60X	82.16X	70.34X	

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13	PC								??
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16									??
17									??
18									??
19									??
20	2017								??
21									??
22									??
23	2017								??
24	MOSFET								??
25	IGBT								??
26	2017								??
27									??
28	GaN Si SiC GaN								??
29	SiC								??
30									??
31									??
32	MOSFET								??

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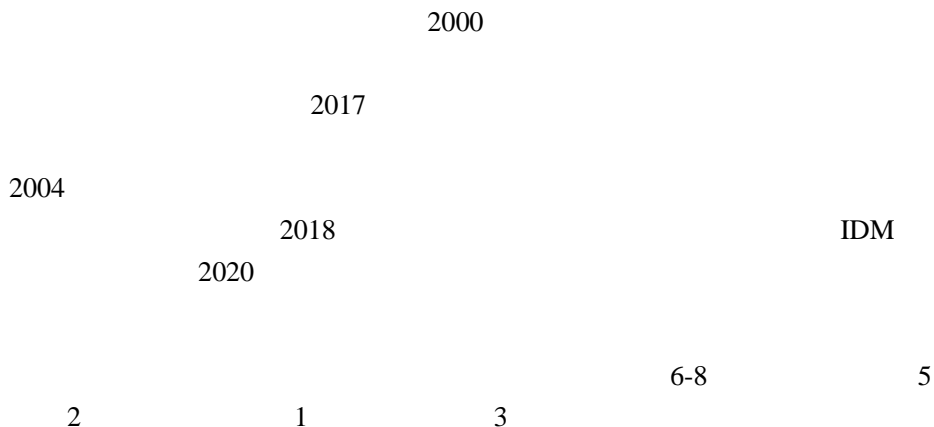
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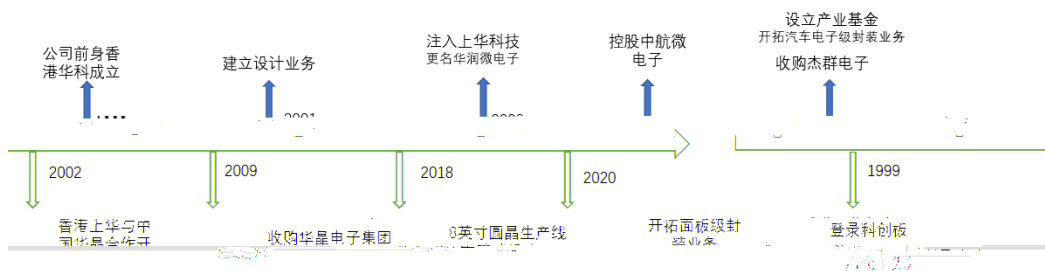
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1. IDM

1.1 IDM



1



2



wind

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wind

11.32%

2019

6.45

1	

1.2

2017	-2019		58.76	62.71	57.43			
33.63%	6.73%	-8.42%	2017			2018		
	2019		26.40	16.86%				
2019	Q3	Q4	-13.16%	16.94%	2020	Q1	2019	
			13.82			16.53%		
							2017-2019	
		13.09	9.15	6.62			22.28%	14.60%
11.53%					1-2			

□

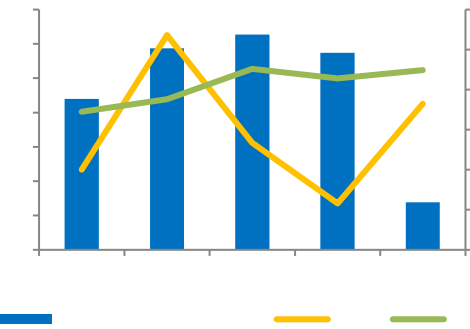
2017-2019 2020 Q1 17.62% 25.20% 22.84%
24.92% 2018

20.68% 2019
24.67% 2020 Q1 24.92%
2017-2019 2020 Q1 0.70 4.29
4.01 1.14 2017 2018 2019 2020Q1
512.9% -6.5% 450.4% 2018
2019 43.97%
2019 Q3 Q4 -33.28% 701.13% 2020 Q1
450.35% 2019

2017- 2019 2020 Q1 16.67
14.82 5.76 2.71 28.38% 23.64% 10.04%
19.62%

2017- 2019 2020 Q1 97.47 99.92
100.95 145.57 54.13% 49.76% 36.70% 26.03%

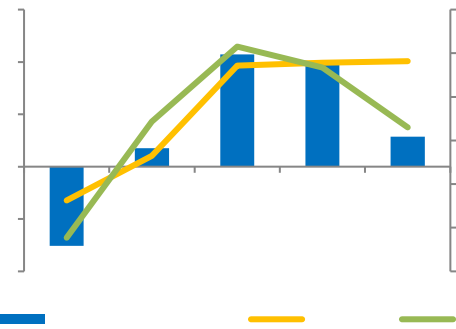
5



Wind

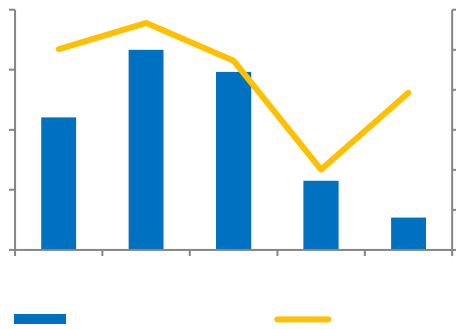
6

ROE



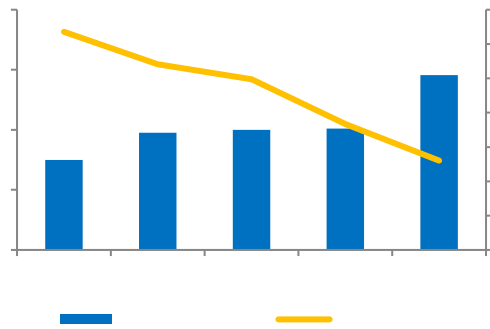
Wind

7



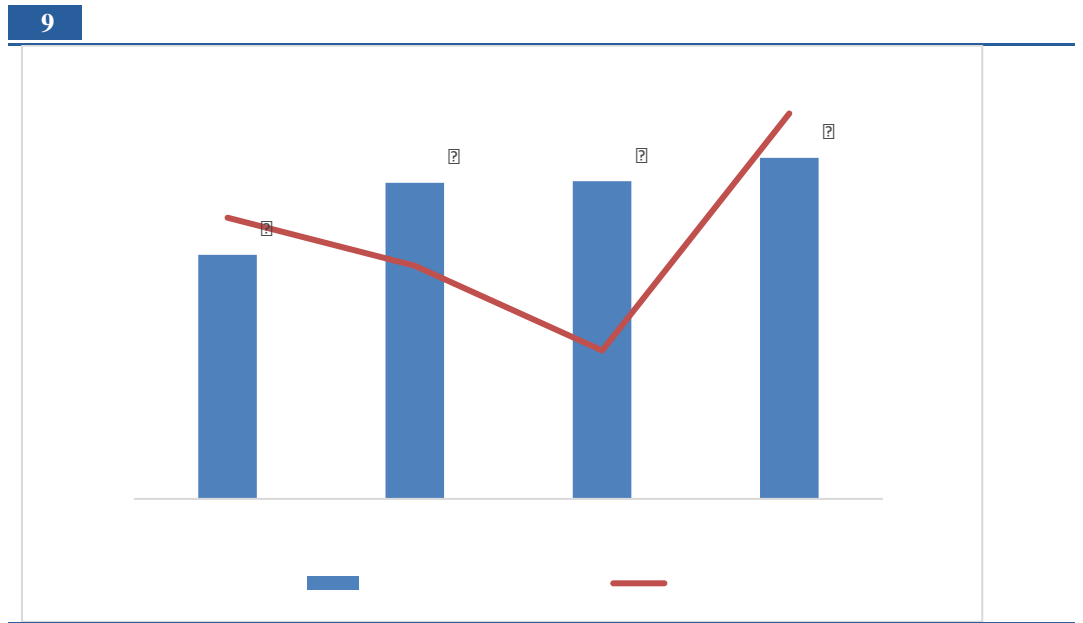
Wind

8



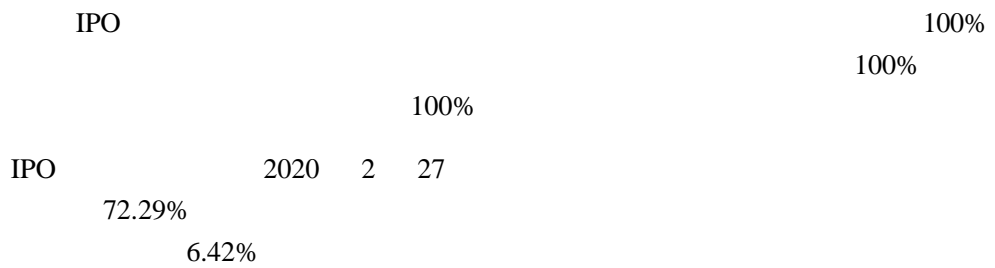
Wind

7%



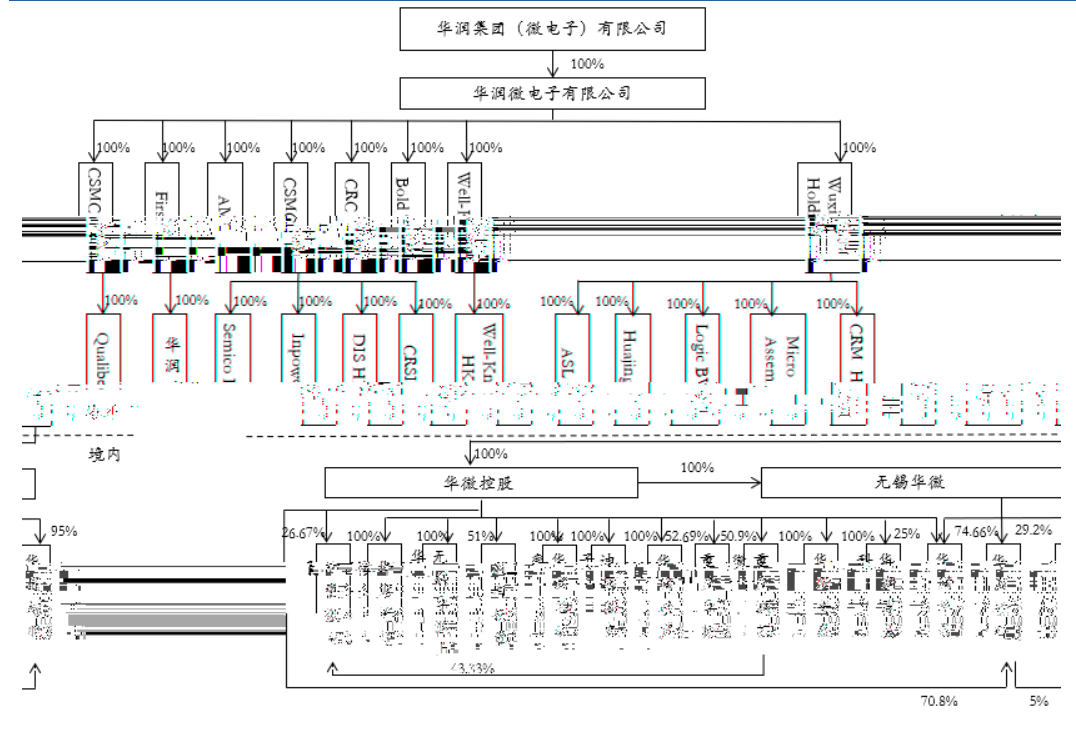
1.3

8



10

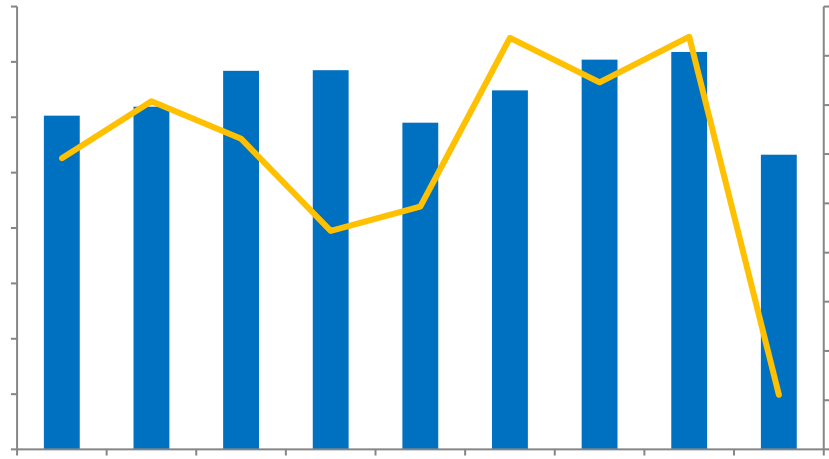
2020 1 31



IPO	30	8		
1 8		8	BCD	
	BCD	0.13um/0.11um	8	MEMS
		2018	9	2021 5
	BCD MEMS	16,000	8	11
8	14.5%			
2				
	MEMS			
3				
		50%	20%	30%

□

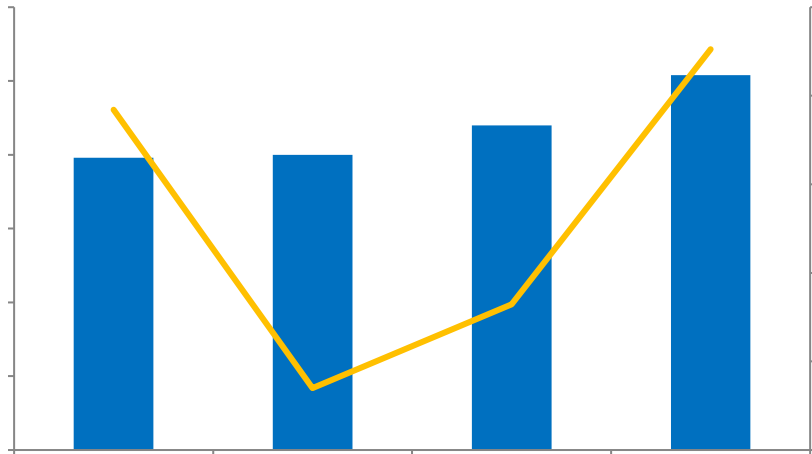
5G							
	5G		2019	8	5G		
		8	21.9		12	541.4	0.7%
	18.7%	2019	5G		1376.9		
	3.7%						
2020							5G
	5G		1	546.5	4	1638.2	
26.9%	40.2%	5G					
	2020	5G				2020	5G
		1500					2020
5G		1.75	2.25	5G			



IDC

2019 Q4	7.5%	253.5	2019 Q2	11.0%	886	2020 Q2	8.9%	978.3	2020 Q3	1166
2019-2024 CAGR		5.6%	IDC 2020		3.4%	2024				

14

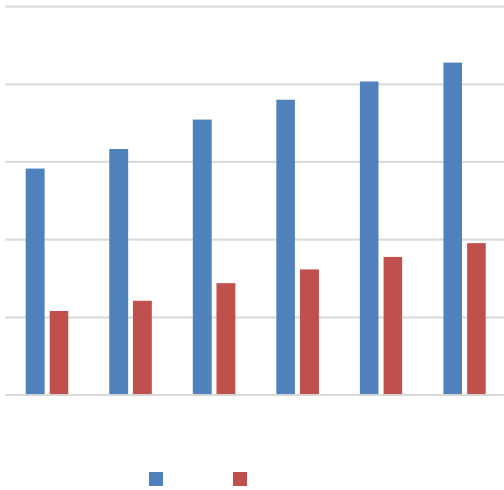


IDC

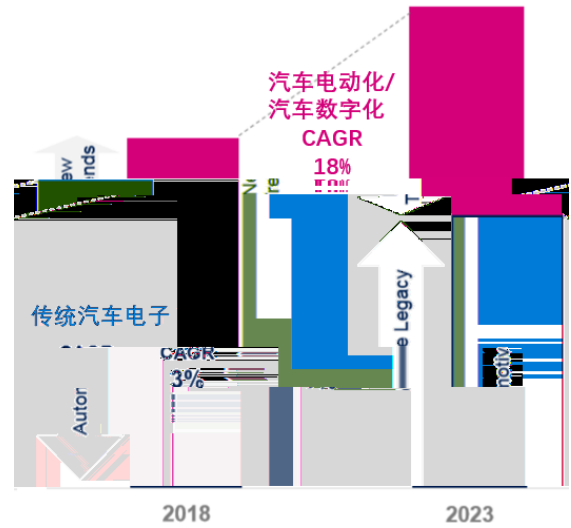
2018	978.3	2022	7820
2020	1583	2021	6073
CAGR		7.82%	12.66%
		10%	

35% 10%~25% / 18% 3%

15



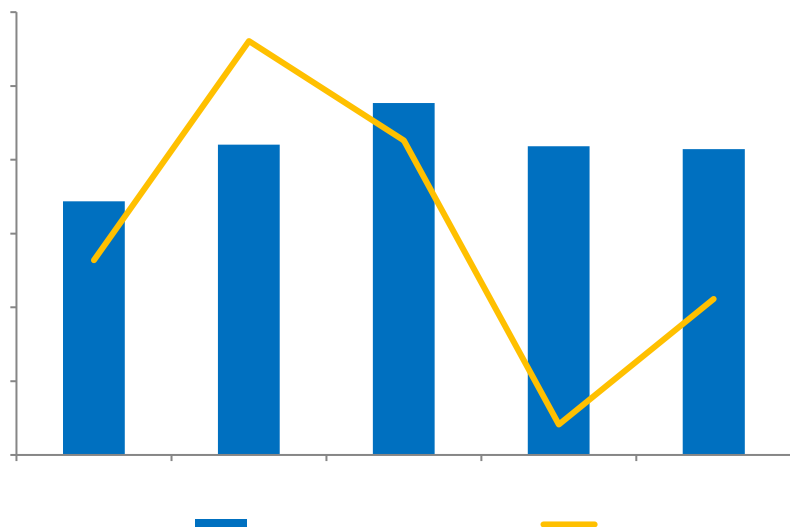
16



strategy analytics ST

2018 4,767 2017 13.7% 2019 2020 0.9%

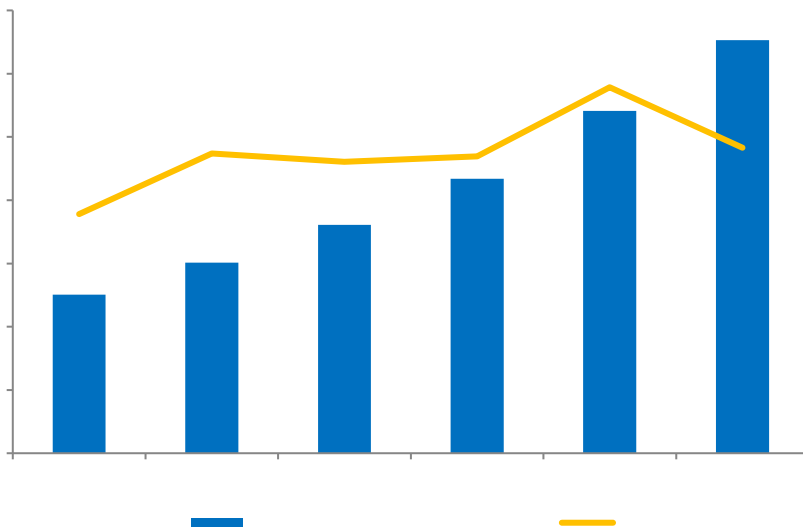
17



Gartner

20% 2018 1578
33%
6,531 20.7% 2013-2018 2018
21.09%

18



2.2

IC

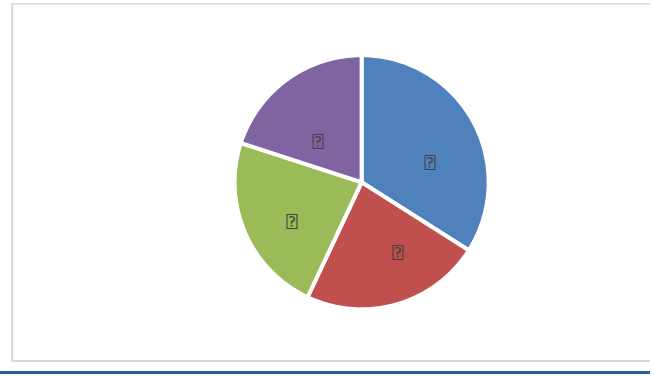
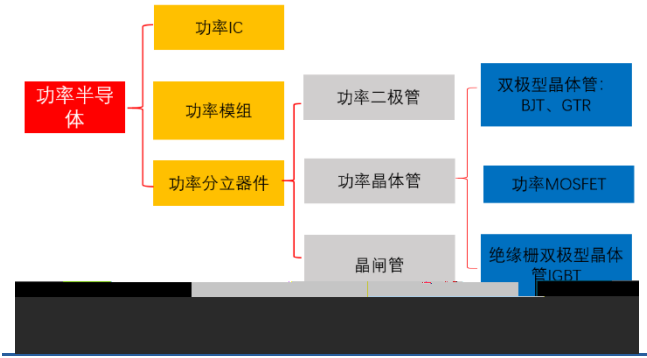
()

34% 23% 20% 23%

19

20 2017

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5G

1

2

	71	MHEV	/	HEV/PHEV
	BEV	27%	90	305
		330%		350
	2018		200	
			2025	1000
2030	2800		2018	
	60	2020	70	2022
80				

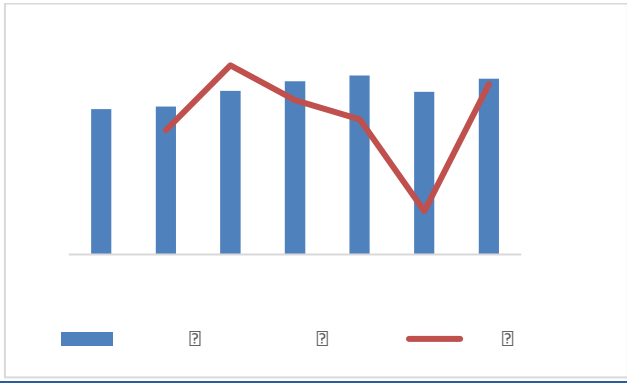
3

	0.79	10.67
	5G	
PA		Massive MIMO
	MOSFET	

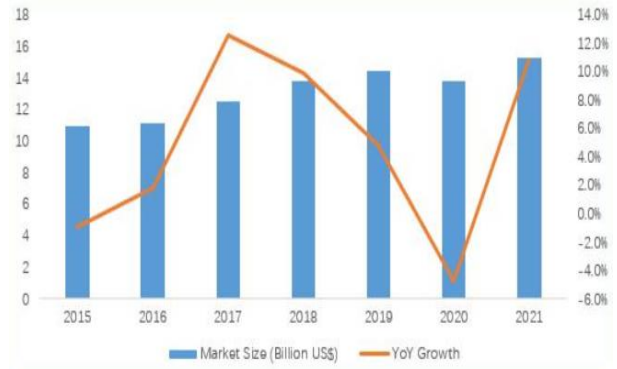
4

	5G	4G	4G	3
2018		391	5.9%	2019
	403	3.3%		2019
	145		36%	
2020				367
9.1%		2021		
	397	8.1%		

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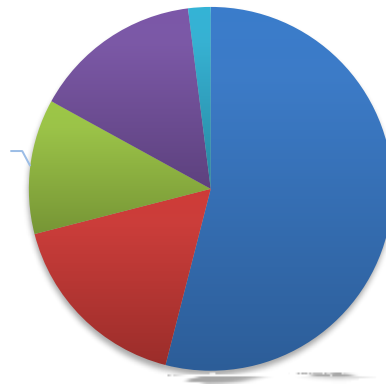
QYresearch



QYresearch

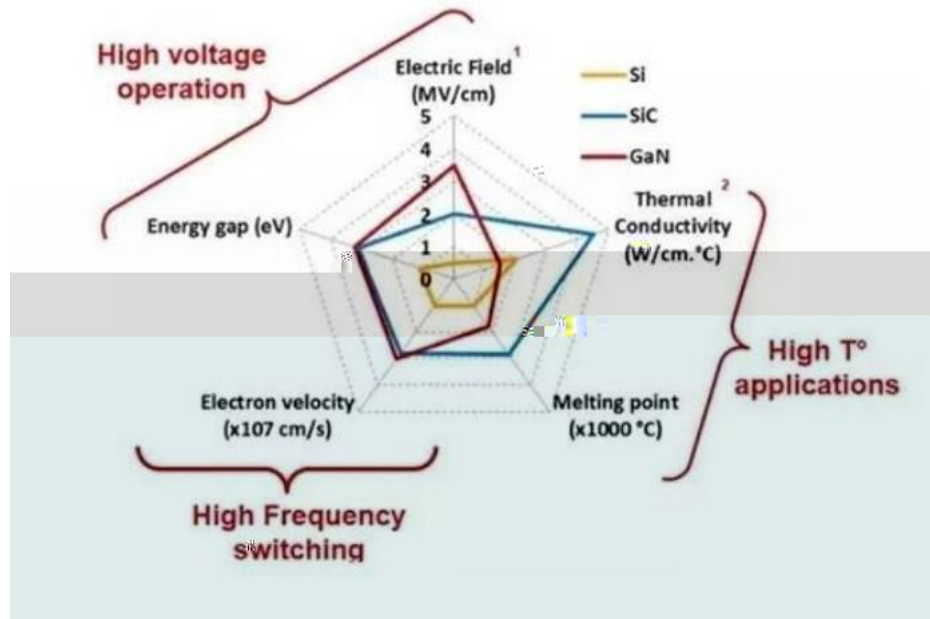
IGBT	/	17%	12%	15%	IC	54%	MOSFET
					IC	60.98%	MOSFET
					IGBT	20.21%	13.92%

23 2017



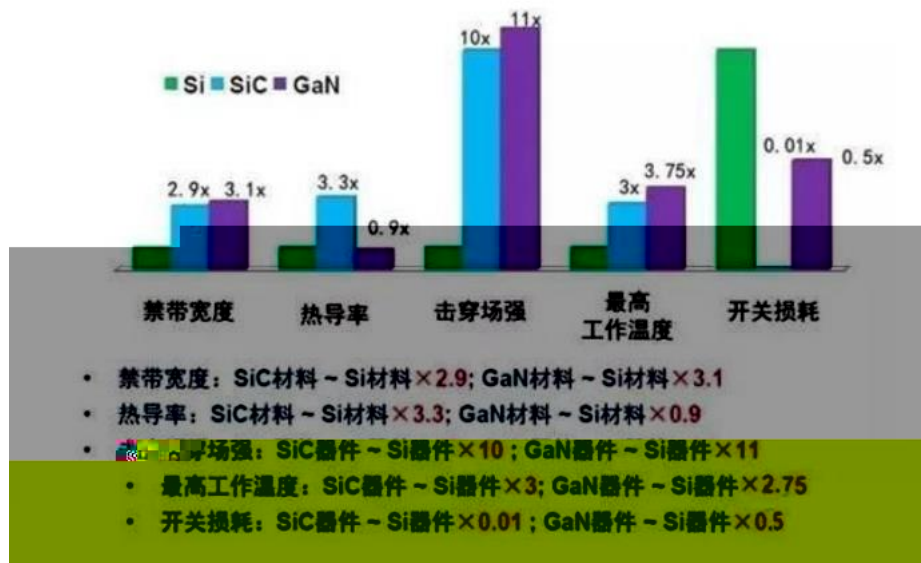
Yole IHS Gartner

IC	2016	79.65	2018	84.3	CAGR	2.88%	IC
MOSFET	2016	27.92	CAGR	15.03%	2018	21.10	2018
IGBT	Insulated Gate Bipolar Transistor						BJT
MOSFET			MOSFET				
			BJT				
CAGR	IGBT	2016	15.40	2018	19.32		



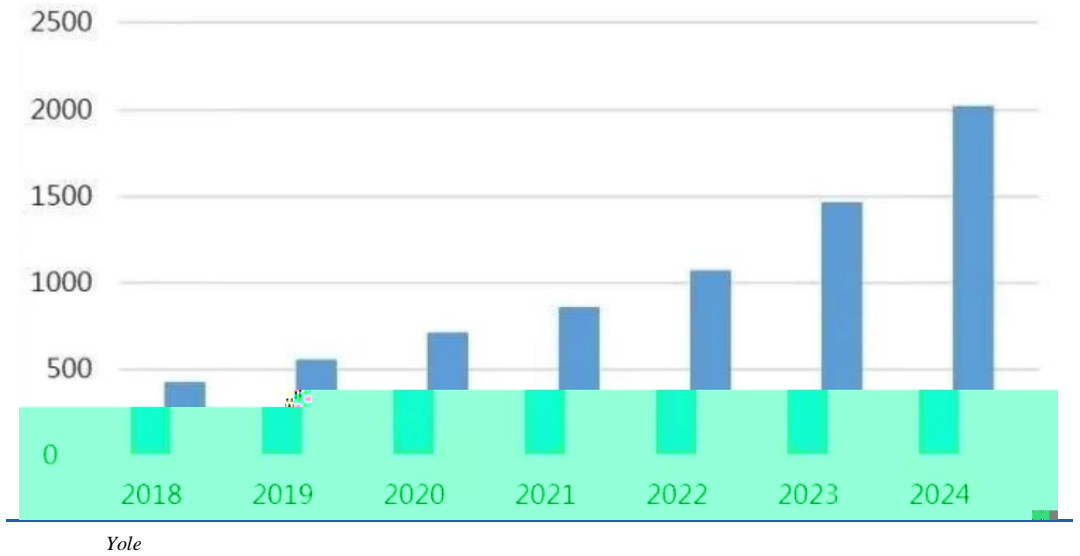
3	Si	SiC	3	3	10	600v-10kv
	1kw-500kw	10khz-10Mhz		SiC		
				Si		
	GaN					

28 Si SiC GaN



SiC 2024 2018 SiC CAGR 30%
5 2024
50%
GaN
Yole 2020 GaN
3 2016 2020 80%

29 SiC



Yole

GaN IDM
650V GaN SiC JBS SiC MOSFET
1200V 650V MOSFET
600V HEMT

3.

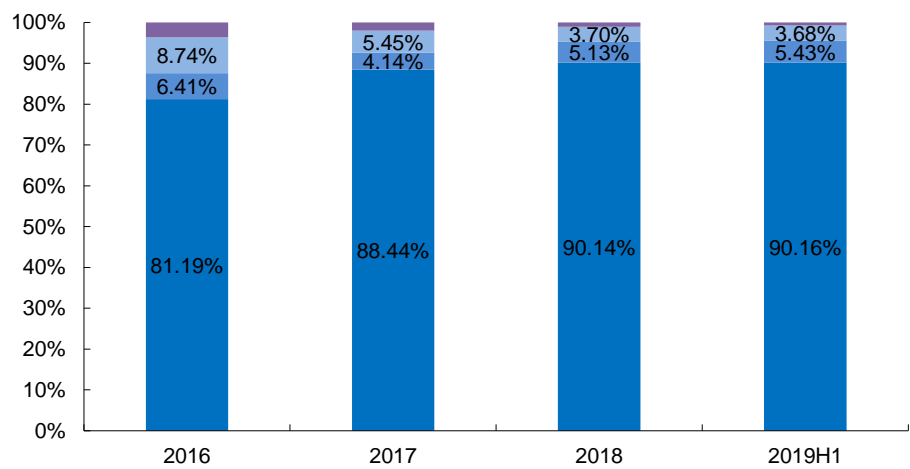
3.1

MOSFET

IDM

3.7% 90% 2018 5.13%

30



IC

MOSFET IGBT SBD FRD

2

2018 MOSFET 8.7% 6

33 2018 MOSFET

IHS

IGBT

600V-1200V

Trench-FS

IGBT

SBD FRD

2

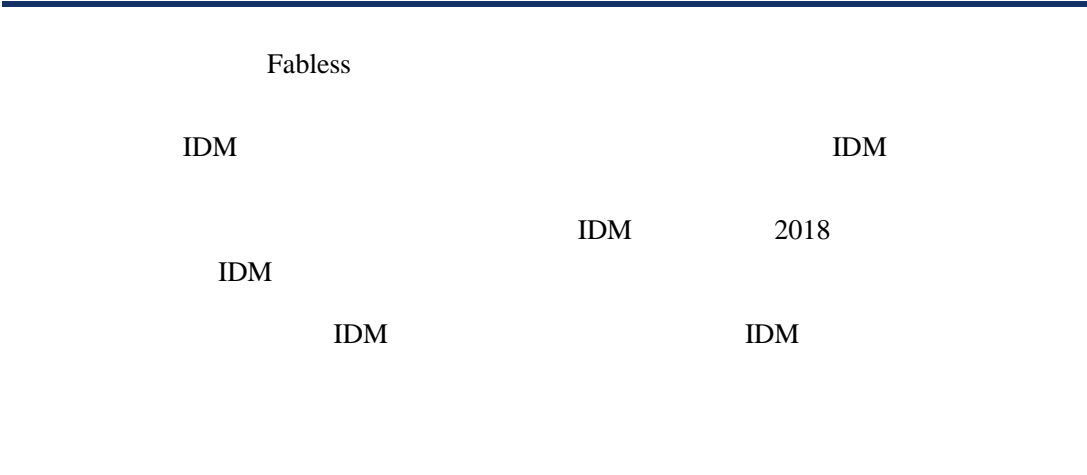
2 SBD SBD

	IC	IC	IC	
1	AC-DC			
2	LED	IC	LED	LED
3	BMS IC			
4		IC	IC	
5		IC		
6	WPC	QI		
		IC		
7		IC	BCD	CMOS

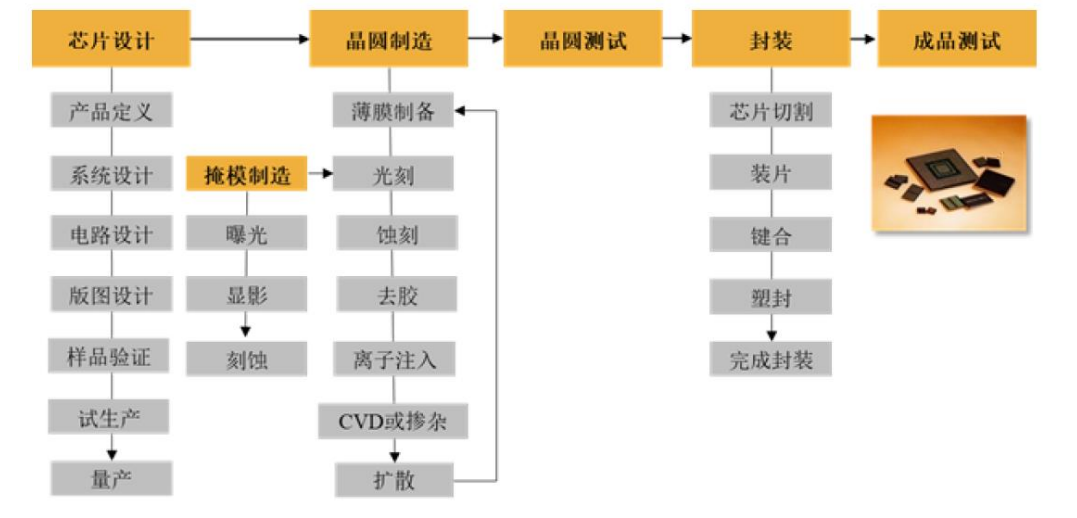


3.2

BCD



36



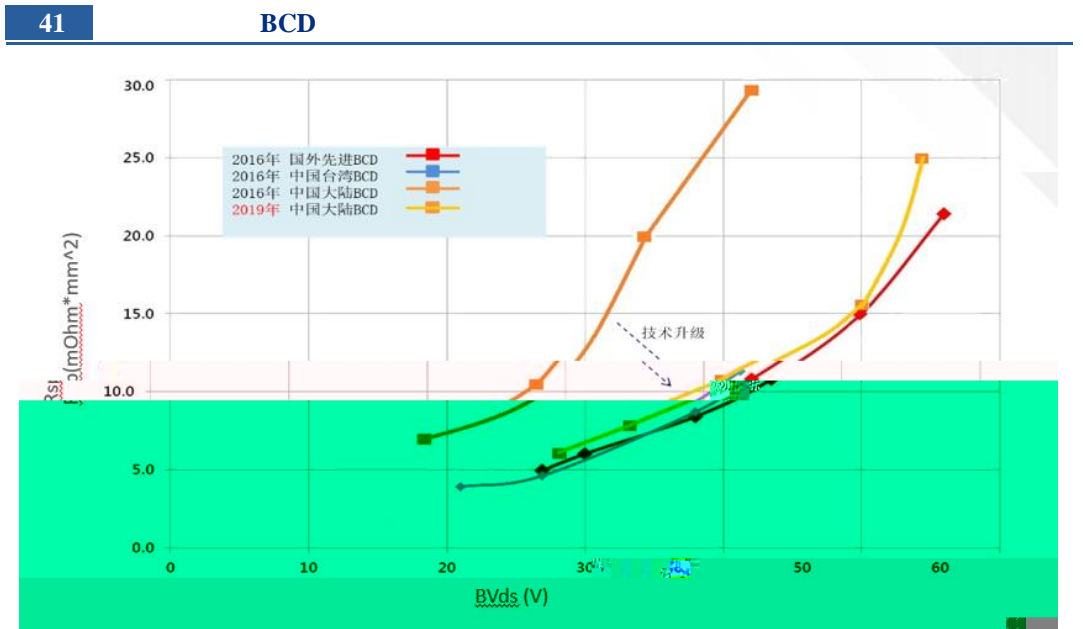
	2018		35.72	1.48%	
		26.74	4.3%	75%	
	7.86	4.2%	22%		
1.12	17.9%	3%			
	2016-2018	2019H1	7.85%	16.06%	19.49%
15.24%	2016-2018				
2019					
2016-2018	2019H1	14.27%	16.75%	15.28%	15.51%
15%					

37

38

	8			73	6	1	8	3	6
		1	8					60	247
2018	11						100		
			12					MOSFET	IGBT
		BCD	MEMS		19.2	IPO		8	
	62							2.4	
	4								

	BCD	BCD	BCD	BCD	5-700V	BCD
	BCD	SOI	BCD	BCD		
1			BCD	0.18μm BCD	7-120V 6	0.11μm
2			BCD	2007		700V CDMOS
			2011	2013	2016	700V BCD
			BCD			
3	SOI	BCD		SOI	BCD	
						IGBT



FC

IPM

IPM

IPM

IMS

IPM

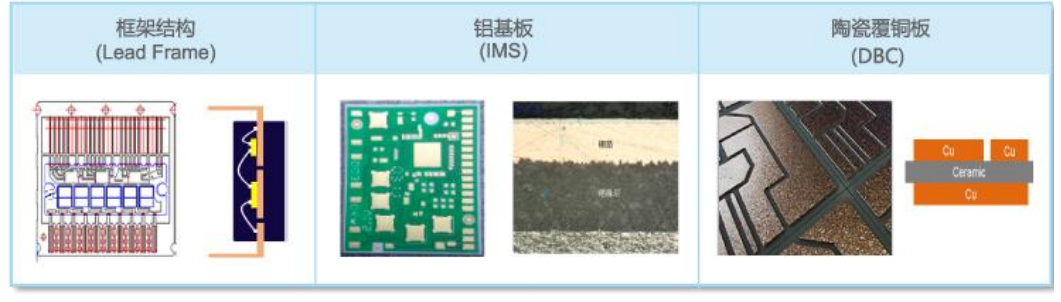
CopperClipBond

IPM

IPM

IPM

42 IPM



4.

IDM

	2020-2022				4.73	6.01	7.02
EPS	0.39	0.49	0.58	PE	104.60X	82.16X	70.34X

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