IDM

—— 688396

2020 05 26

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

S1070518060001
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S1070119070022
021-31829735
✉ guowang@cgws.com

	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** IDM MOSFET 2019 2019 2020 Q1

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

- 400 36%

SiC GaN
Si

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
“ ”

■

1. IDM

1.1 IDM

2000

2017

2004

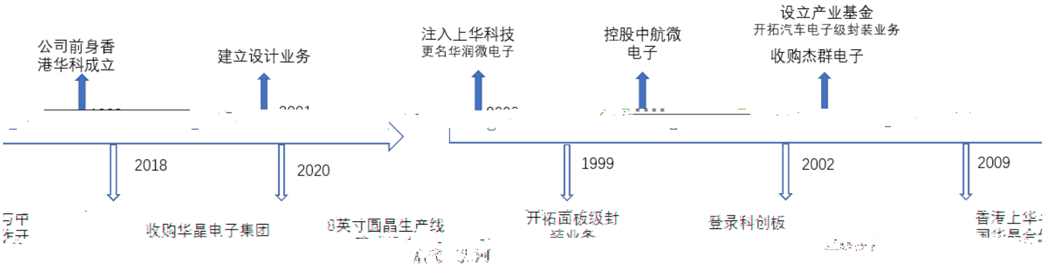
2018 IDM

2020

6-8 5

2 1 3

1



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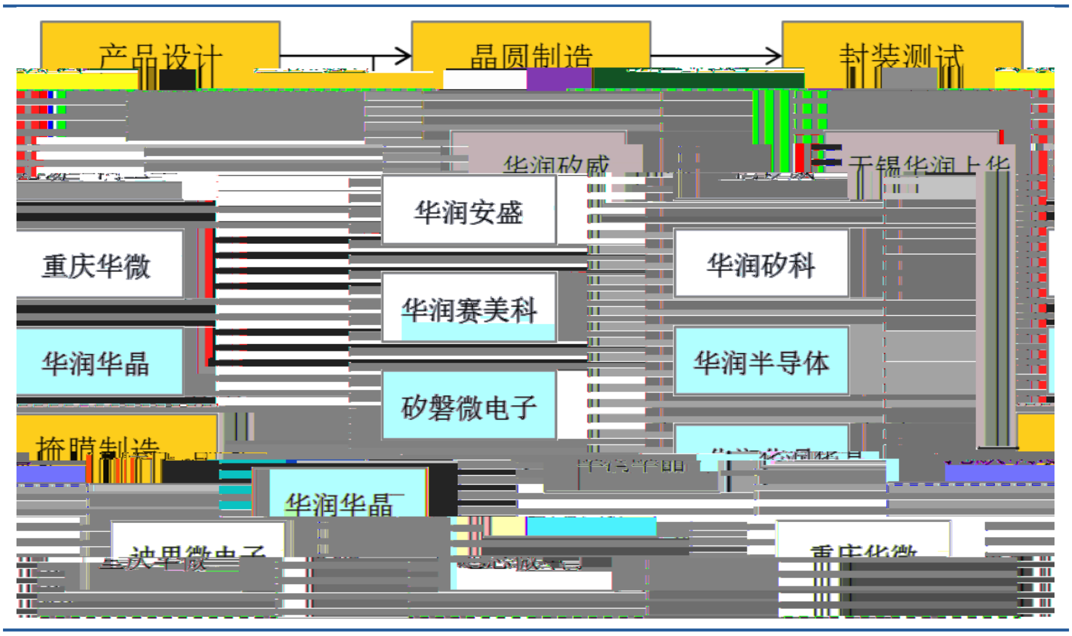


2019
90%

2016
2016-2019
13.32 23.39 26.83 25.16 30.29% 39.81%
42.78% 43.81% 2017
2018 2019

2016-2019
25.19% 19.59% 34.02% 29.48% 2017
-1.80% 2018
1
34.30% 2 2019

2016-2019 9.91% 16.33% 18.57% 17.76%
2016 9.91% 2018 18.57% 8
2019

43%

3

4

wind

wind

2019 6.45 11.32%

1

1.2

2017 -2019 58.76 62.71 57.43 33.63% 6.73% -8.42% 2017 2018 2019 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

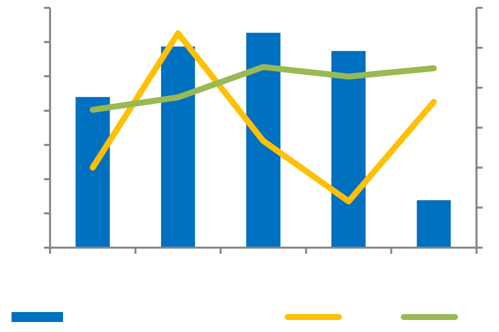
2017-2019 2020 Q1 17.62% 25.20% 22.84%
24.92% 2018
2019
20.68% 2019
24.67% 2020 Q1 24.92%

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%

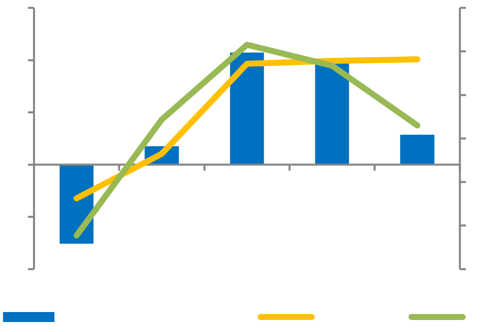
2017- 2019 2020 Q1 97.47 99.92
100.95 145.57 54.13% 49.76% 36.70% 26.03%

5



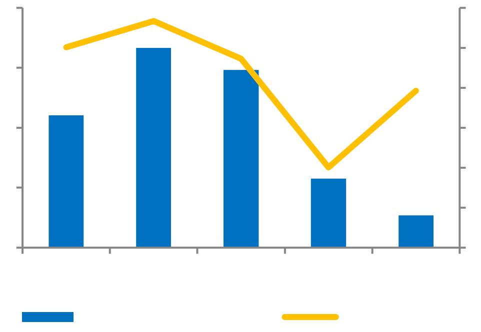
Wind

6 ROE



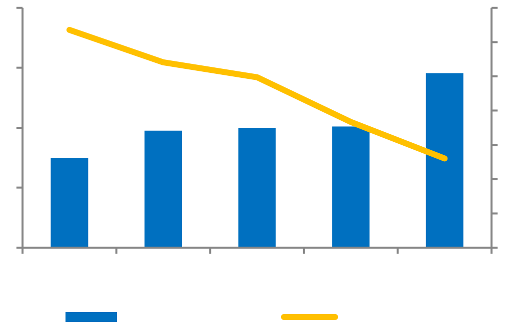
Wind

7



Wind

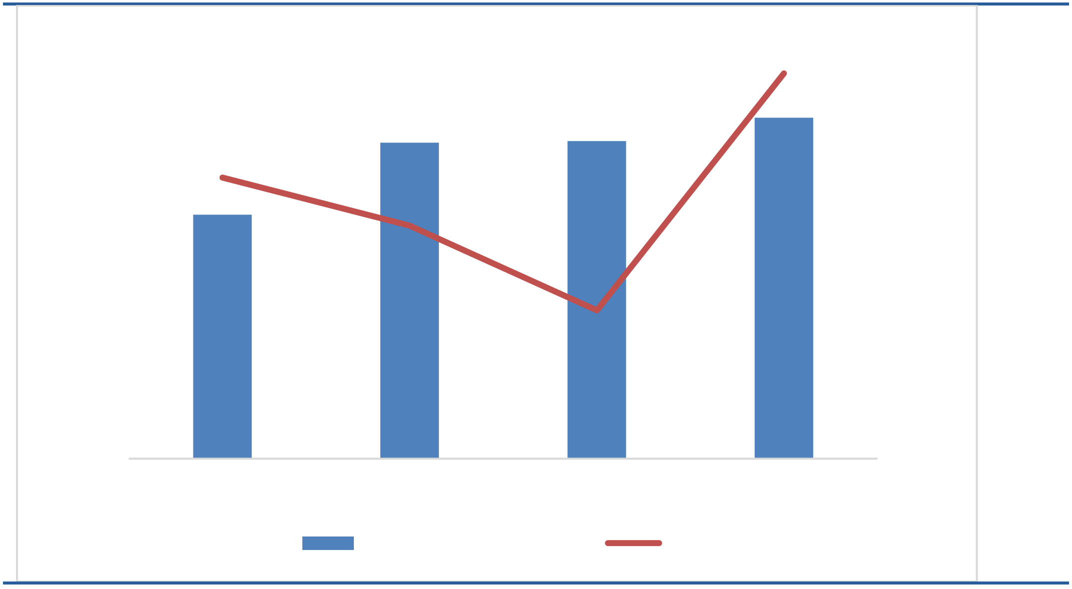
8



Wind

7%

9

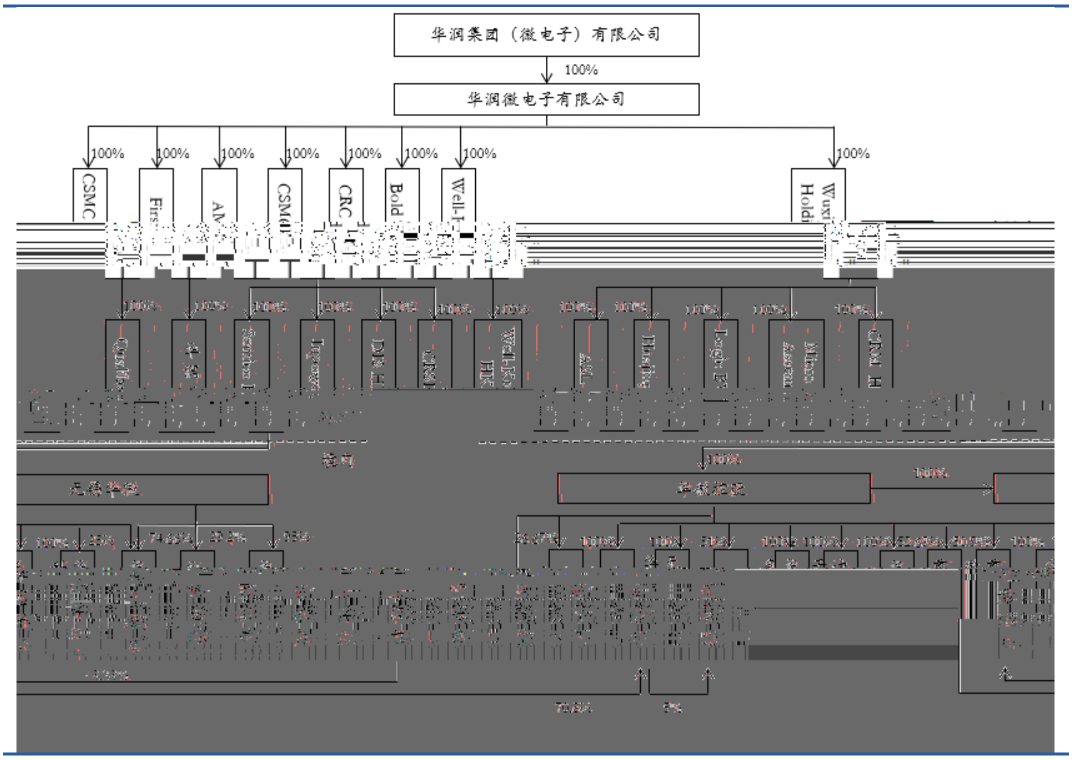


1.3 **8**

IPO 100% 100% 100%

IPO 2020 2 27 72.29% 6.42%

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 ”

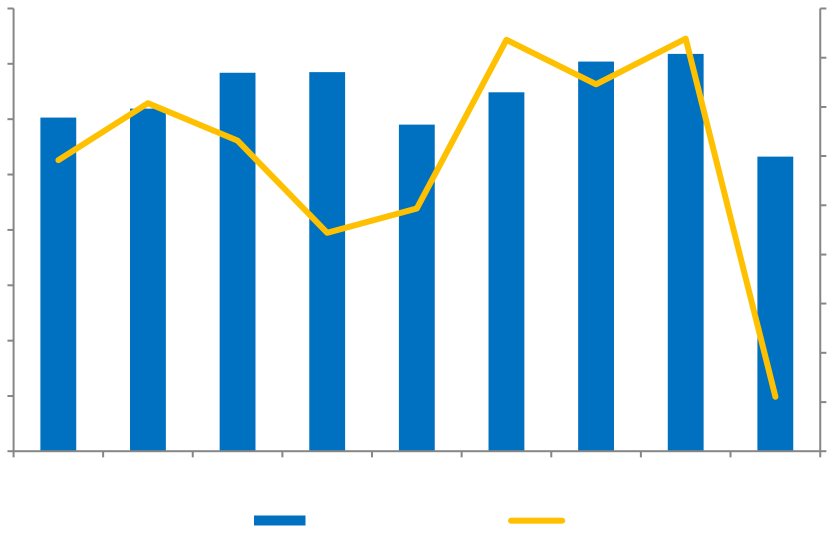
3 50% 20% 30%

5G

5G 2019 8 5G Ɽ Җ 8 21.9 12 541.4 0.3%[illegible]1T2718 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 Q2 Q3

2019 Q4 7.5% 253.5

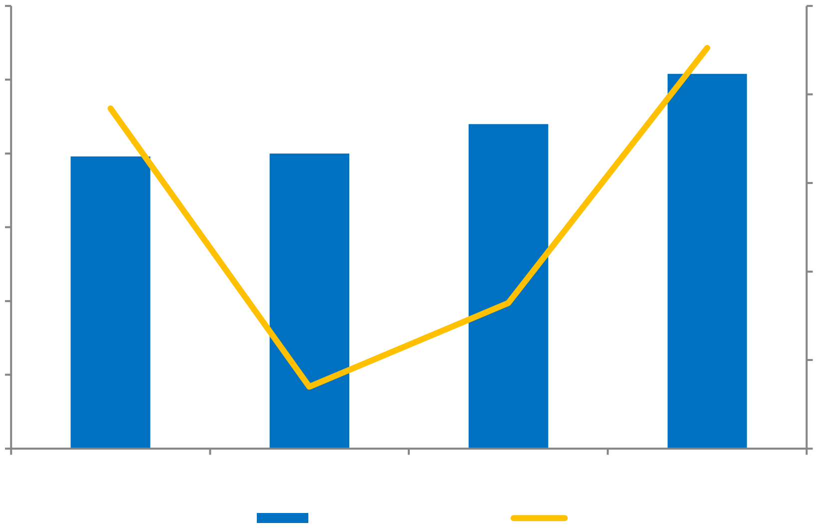
IDC 2020Q1

11.0% Q2 8.9% 2020 2020

886 3.4% 2024 1166

2019-2024 CAGR 5.6%

14



IDC

2018 15833 6073

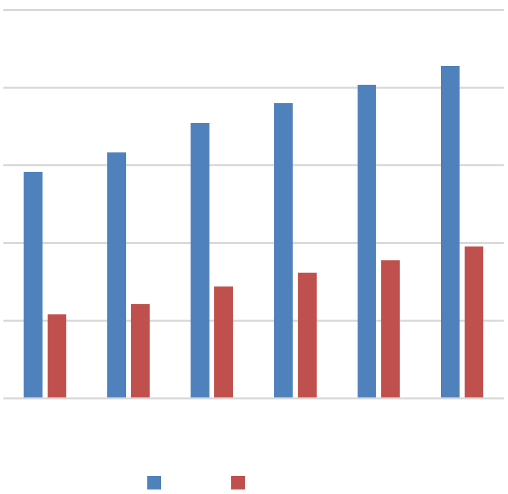
2022 21399 9783 7.82% 12.66%

10%

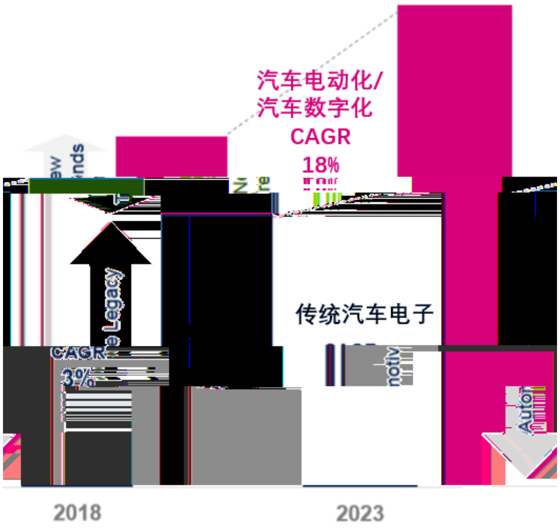
10%~25%
35%

/
18%
3%

15



16

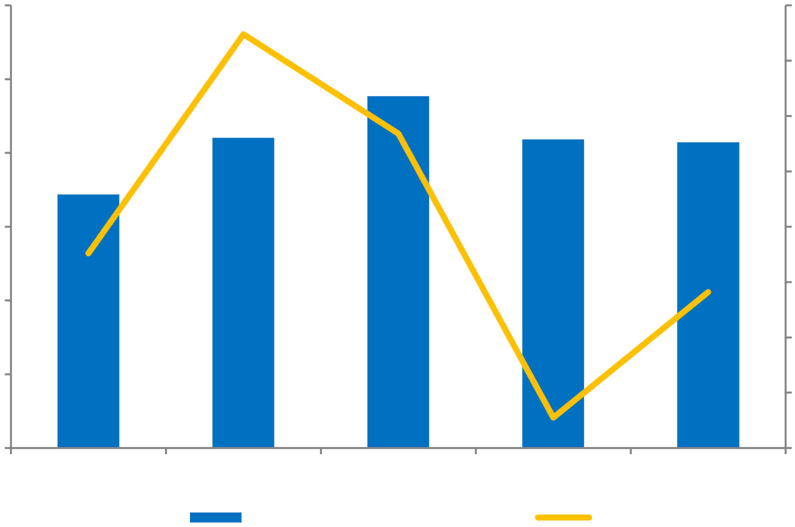


strategy analytics *ST*

2018 4,767 2017 13.7% 2019 2020 0.9%

5G

17

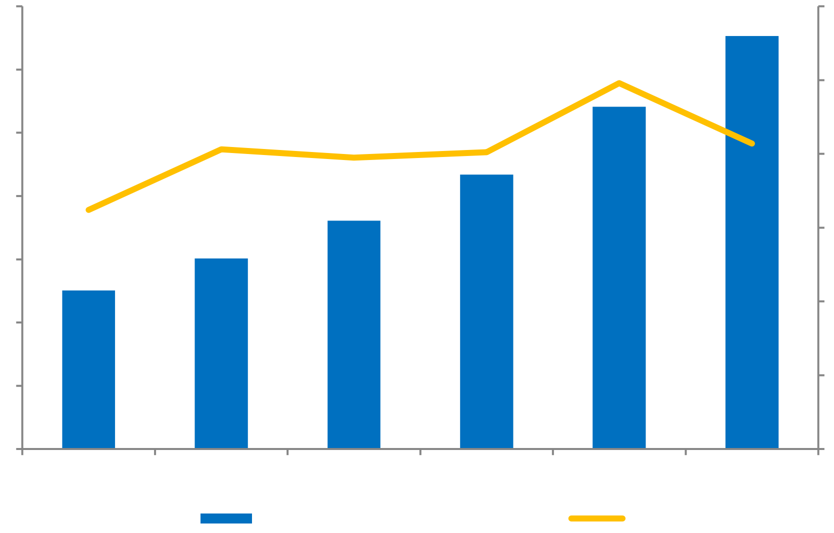


Gartner

2018 1578
20% 33%

2018
6,531 20.7% 2013-2018
21.09%

18



2.2

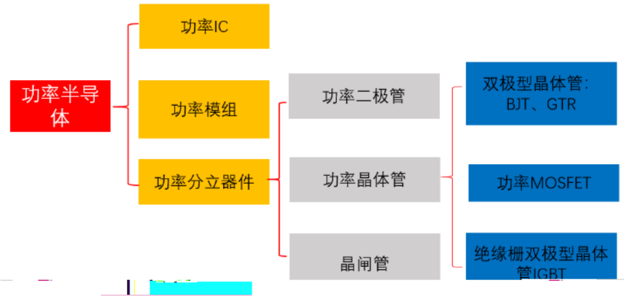
IC

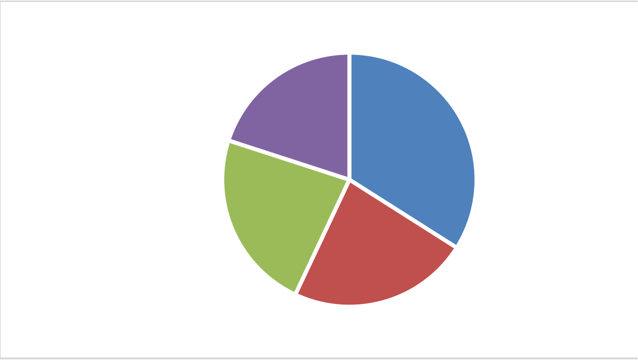
( )

34% 23% 20% 23%

19

20 2017





5G

1

2
71 MHEV / HEV/PHEV
BEV 90 305 350
27% 330% 393%
2018 200
2025 1000
2030 2800 2018
60 2020 70 2022
80

3
0.79 10.67
5G
PA Massive MIMO
MOSFET

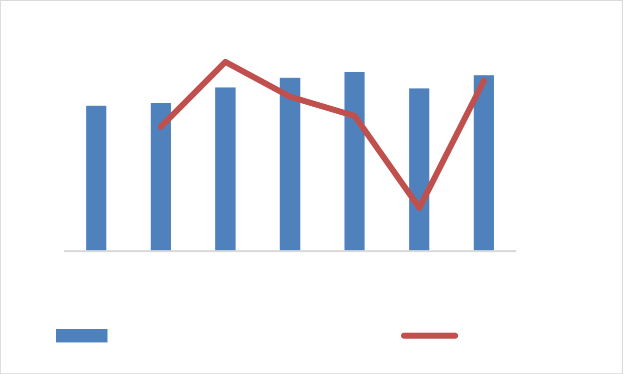
4 5G 4G 4G 3

2018 391 5.9% 2019
403 3.3% 2019
145 36%

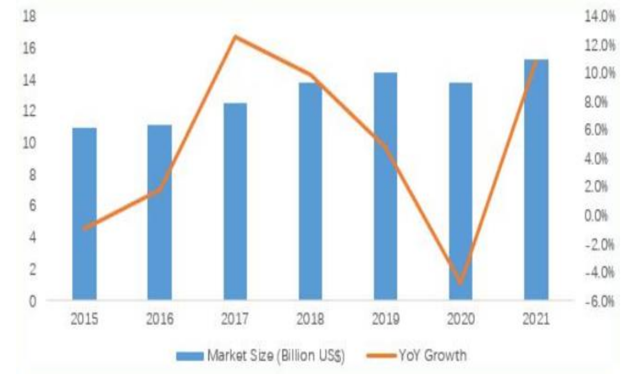
2020 367
9.1% 2021
397 8.1%

21

22



QYresearch

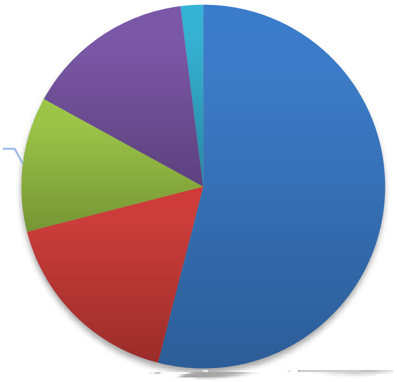


QYresearch

IC 54% MOSFET IGBT / 17% 12% 15%

IC MOSFET IGBT 2018 60.98% 20.21% 13.92%

23 2017



Yole IHS Gartnet

IC IC 2016 79.65 2018 84.3 CAGR 2.88%

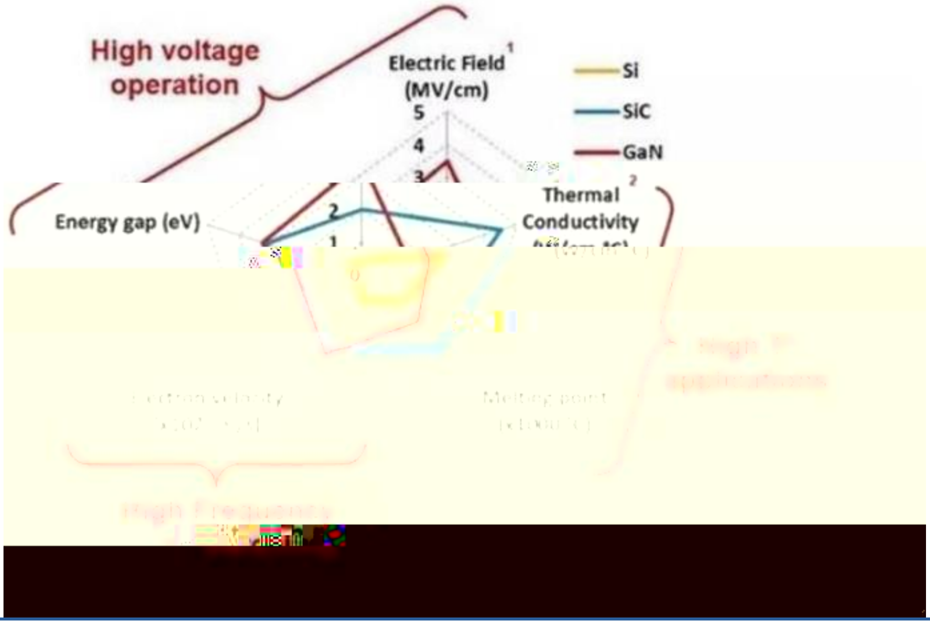
MOSFET

2016 21.10 2018 27.92 CAGR 15.03%

IGBT Insulated Gate Bipolar Transistor BJT MOSFET MOSFET BJT

IGBT 2016 15.40 2018 19.32 CAGR 11.74%

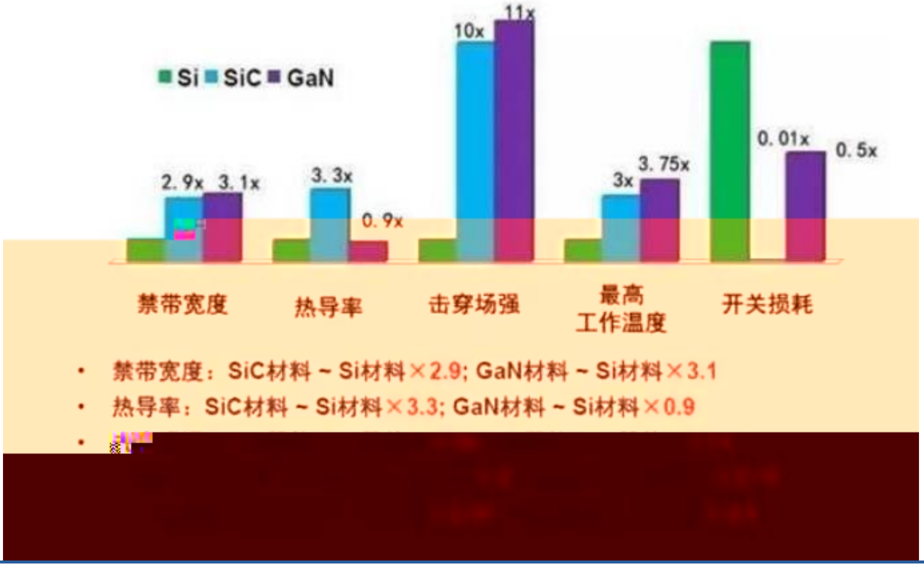
27



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

GaN

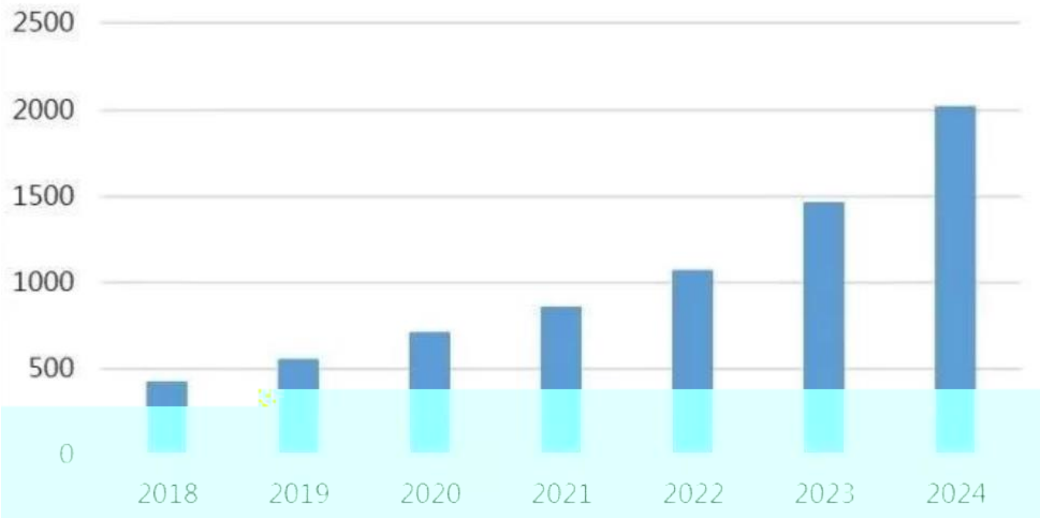
28 Si SiC GaN



SiC 2018 SiC
5 2024 20 CAGR 30%
2024 SiC
50%

GaN
Yole 2020 GaN
3 2016 2020 80%

29 SiC



Yole

GaN SiC
IDM
650V GaN SiC JBS SiC MOSFET

1200V 650V
MOSFET

600V HEMT

3.

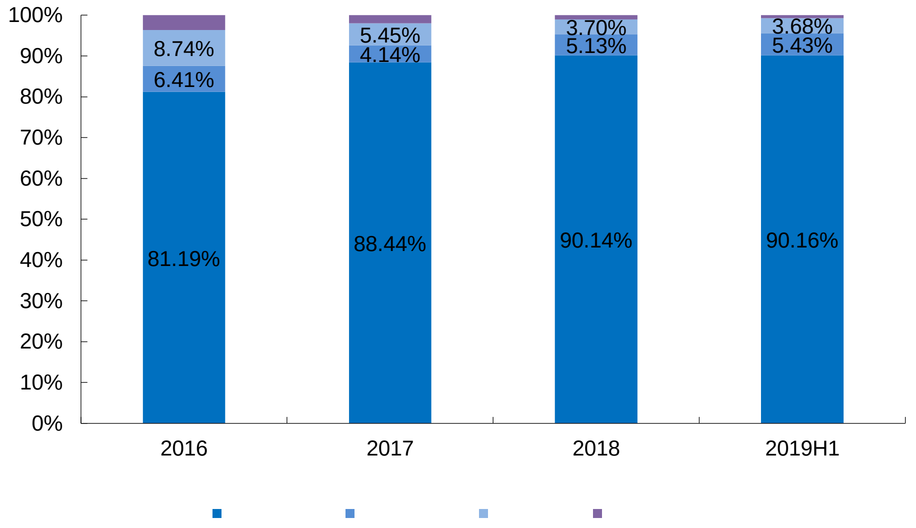
3.1 **MOSFET**

IDM

90% 2018 5.13%

3.7%

30



IC

MOSFET IGBT SBD FRD

2018 MOSFET 8.7% 6

33 2018 MOSFET

IHS

IGBT 600V-1200V Trench-FS

IGBT

SBD FRD

Y 1 SBD SBD

IC IC IC

1 AC-DC

2 LED IC LED LED

3 BMS IC

4 IC
IC

5 IC

WPC QI

6 IC

7 IC BCD CMOS

35 IC

3.2 **BCD**

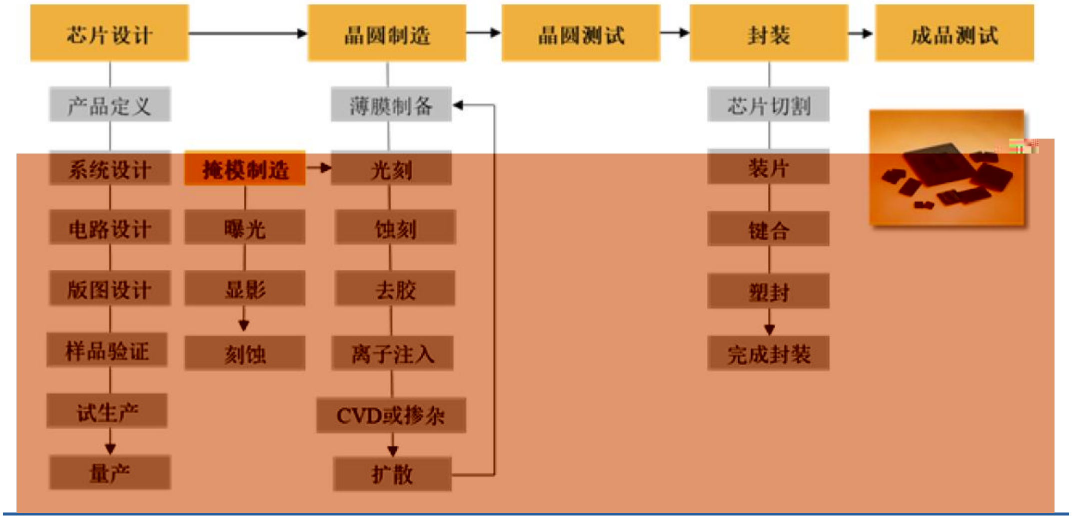
Fabless

IDM IDM

IDM 2018
IDM

IDM IDM

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

1 8 3 6
8 73 6 247
1 8 60

2018 11 100
12 MOSFET IGBT
IPO 8
BCD MEMS 19.2

62 2.4

4

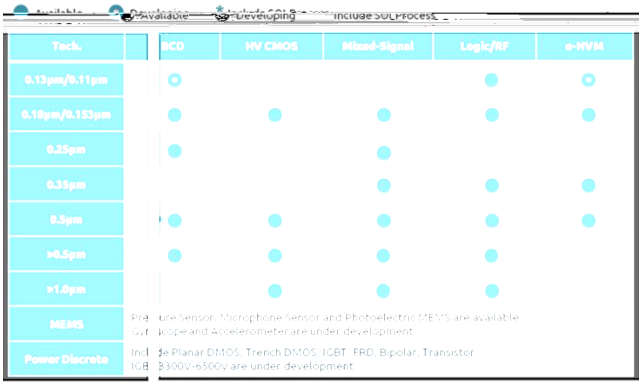
2018
2017 2018 6.3 37%
2017

5

CMOS/ANALOG BICMOS RF/Mixed-Signal CMOS BCD MEMS BCD MEMS

BCD BIPOLAR-CMOS-DMOS 1986 ST BCD CMOS DMOS LED

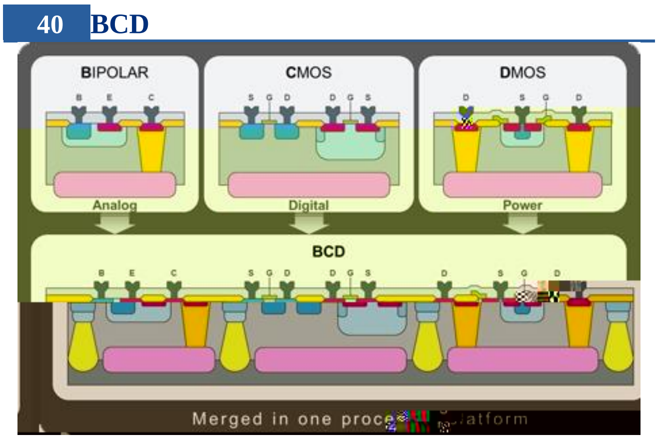
39



● Available ◎ Developing * Include SOI Process

Tech.	BCD	HV CMOS	Mixed-Signal	Logic/RF	e-NVM
0.13µm/0.11µm	◎			●	◎
0.18µm/0.153µm	●	●	●	●	●
0.25µm	●		●		
0.35µm			●	●	●
0.5µm	* ●	●	●	●	●
>0.5µm	●	●	●	●	
>1.0µm		●	●	●	
MEMS	Pre ure Sensor, Microphone Sensor and Photoelectric MEMS are available. Gyr scope and Accelerometer are under development.				
Power Discrete	Incl de Planar DMOS, Trench DMOS, IGBT, FRD, Bipolar, Transistor. IGB 3300V-6500V are under development.				

40 BCD



BCD 4 BCD 0.13 BCD BCD CMOS BCD IDM

BCD 5-700V BCD
BCD SOI BCD BCD

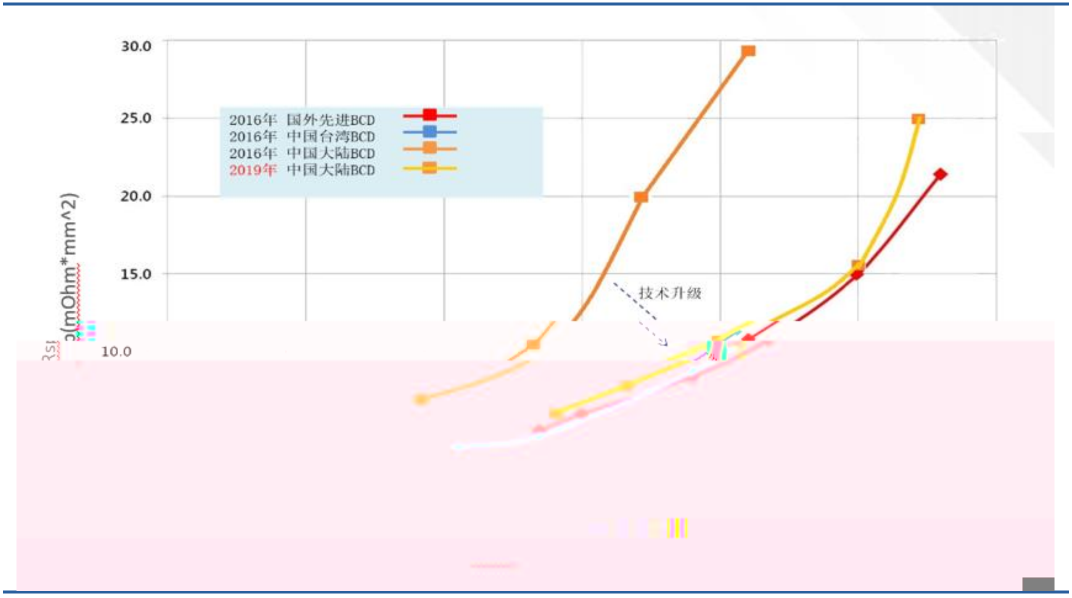
1 BCD 0.18μm BCD 7-120V 6
0.11μm

2 BCD 2007 700V CDMOS
2011 2013 2016 700V BCD
BCD

3 SOI BCD SOI BCD

IGBT

41 BCD

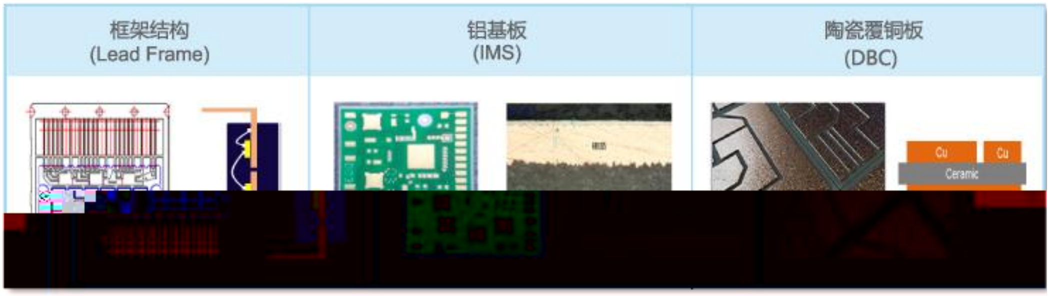


CopperClipBond
FC IPM

IPM

IMS 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
“ ”