2020 05 26

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

S1070518060001
021-31829706
✉ zoulanlan@cgws.com
S1070119070022
021-31829735
✉ guowang@cgws.com

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** 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

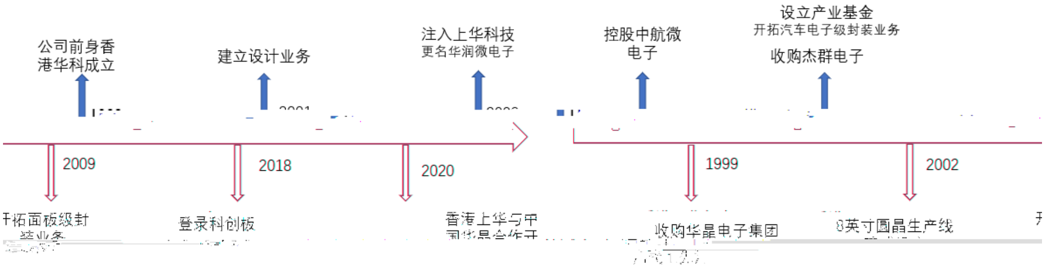
2018 IDM

2020

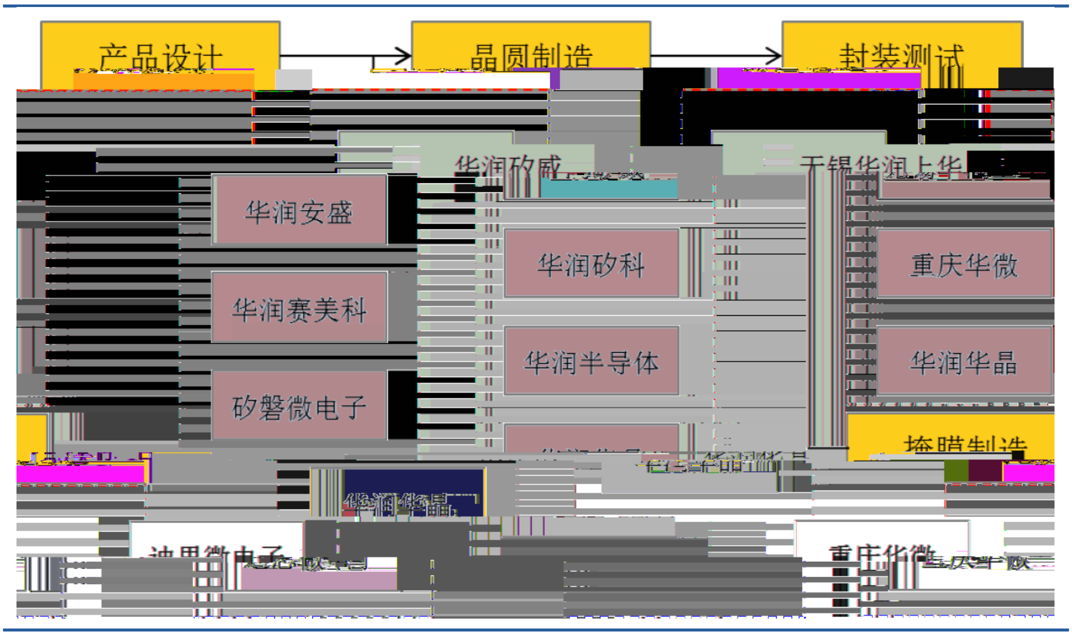
6-8 5

2 1 3

1



2



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

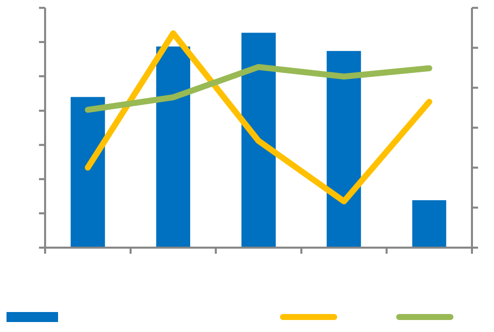
2017-2019 2020 Q1 17.62% 25.20% 22.84% 24.92% 2018 2019 20.68% 2019 24.67% 2020 Q1 24.92%

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%

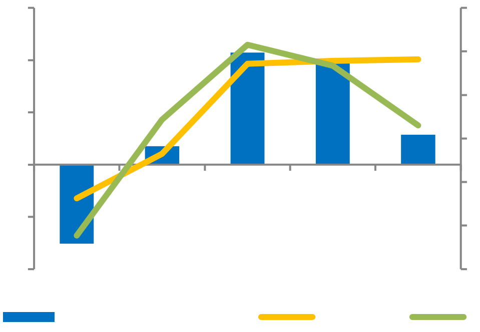
2017- 2019 2020 Q1 97.47 99.92 100.95 145.57 54.13% 49.76% 36.70% 26.03%

5



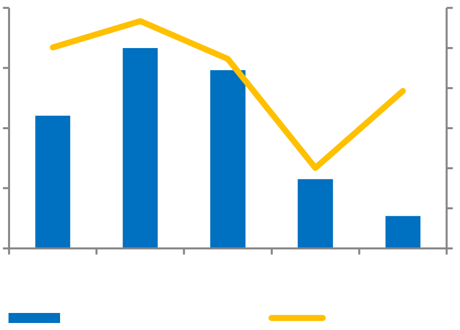
Wind

6 **ROE**



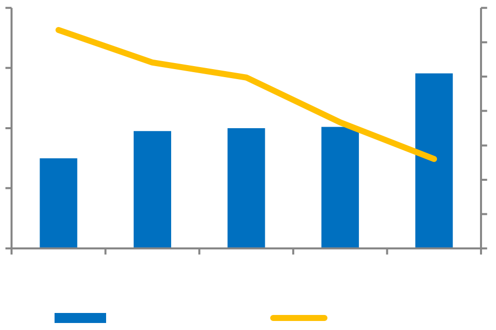
Wind

7



Wind

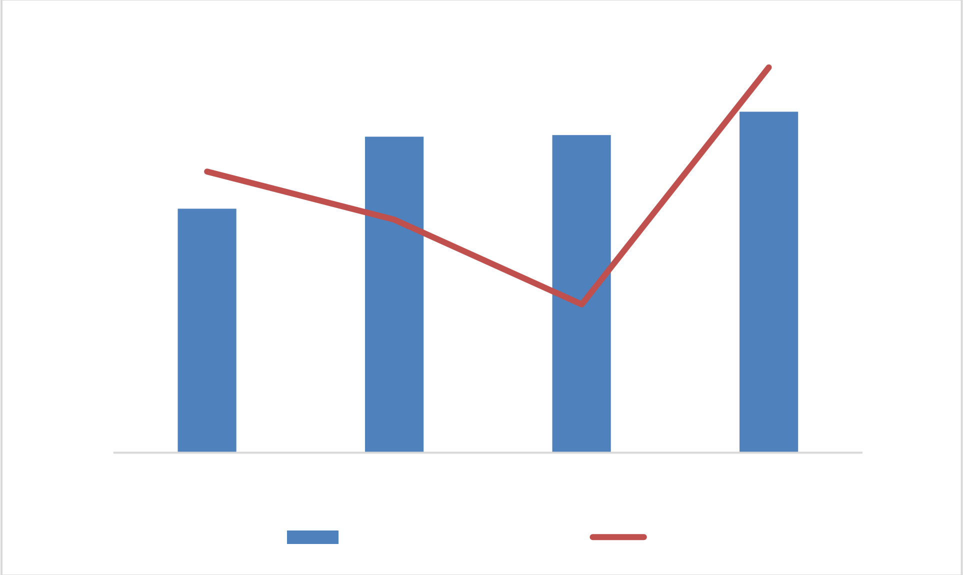
8



Wind

7%

9

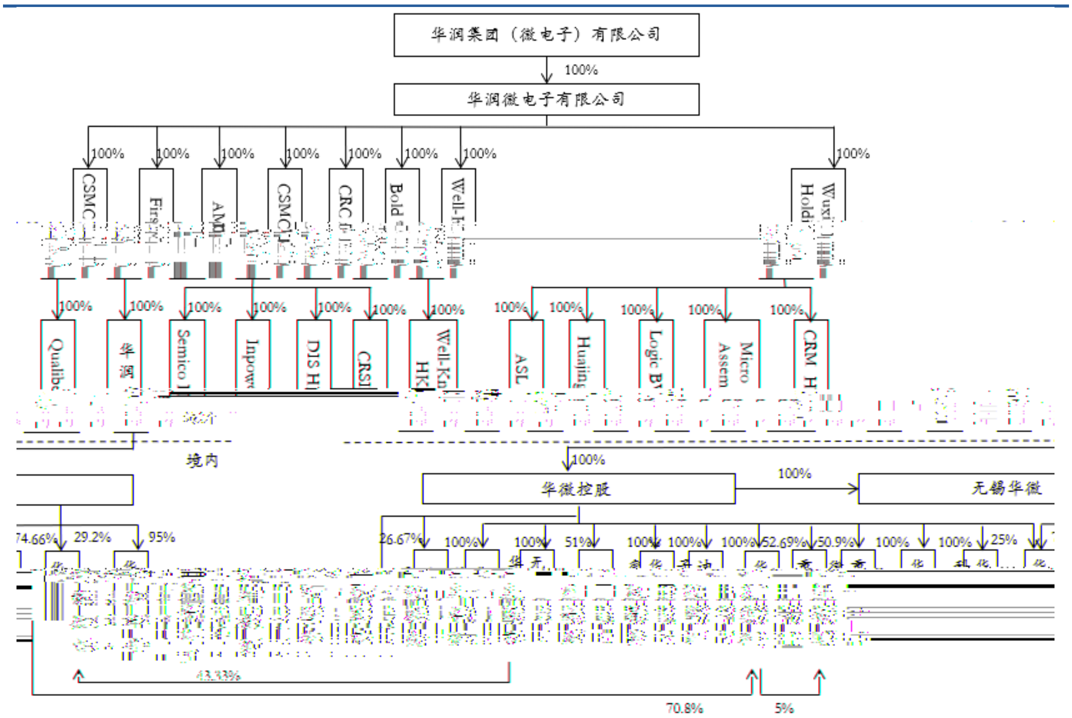


1.3 **8**

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%

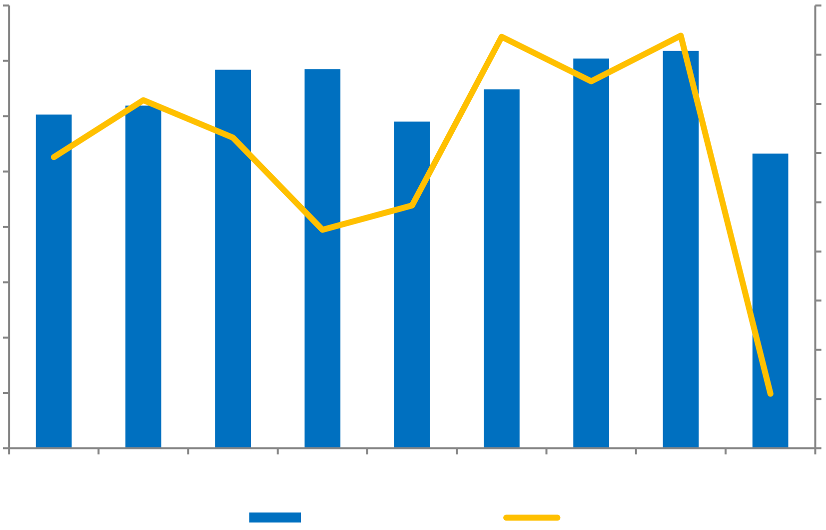
2 “
” “ ” “
” “ MEMS ”

3
50% 20% 30%

5G
5G 2019 8 5G
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

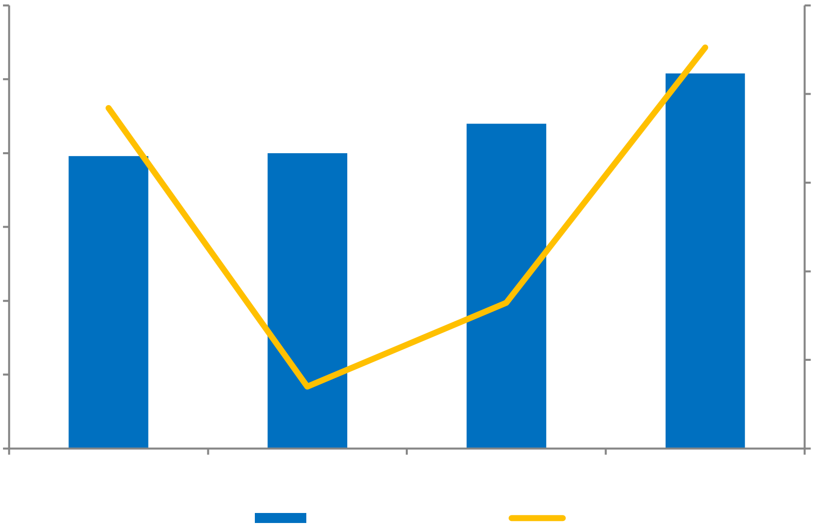


IDC

2019 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



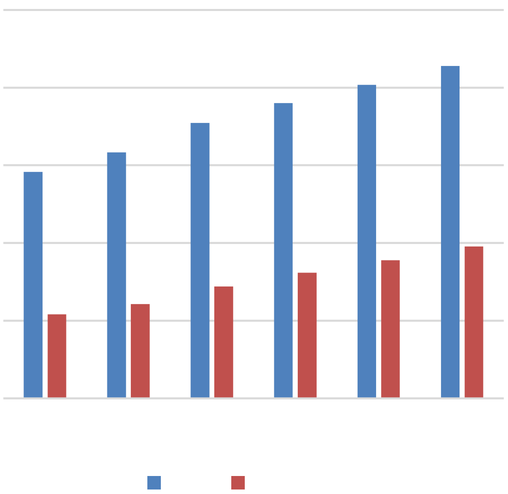
IDC

2018 15833 6073 2022 21399 9783 7.82% 12.66% 10%

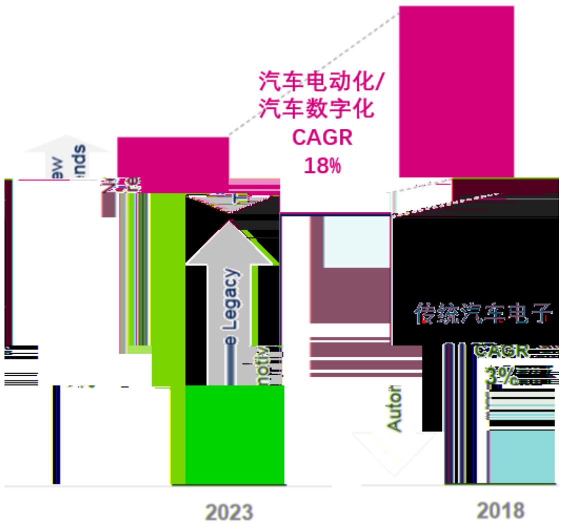
10%~25%
35%

/
18%
3%

15



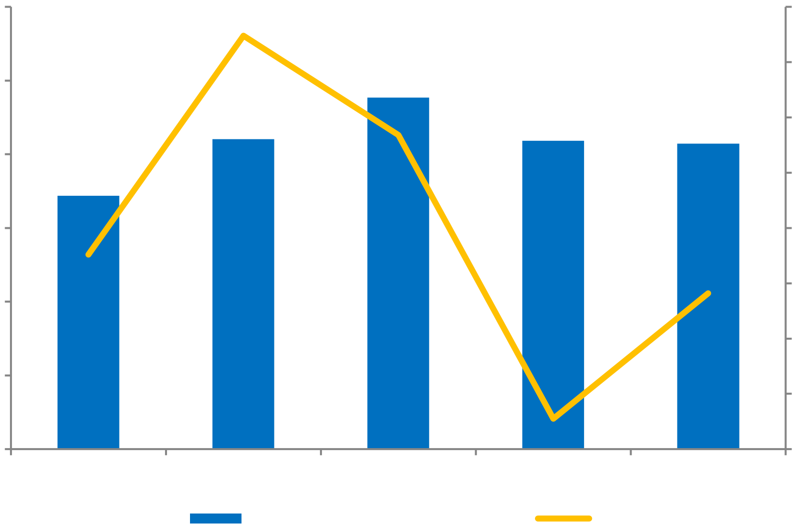
16



strategy analytics *ST*

2018 4,767 2017 13.7% 2019
2020
0.9%
5G

17



Gartner

2018 1578

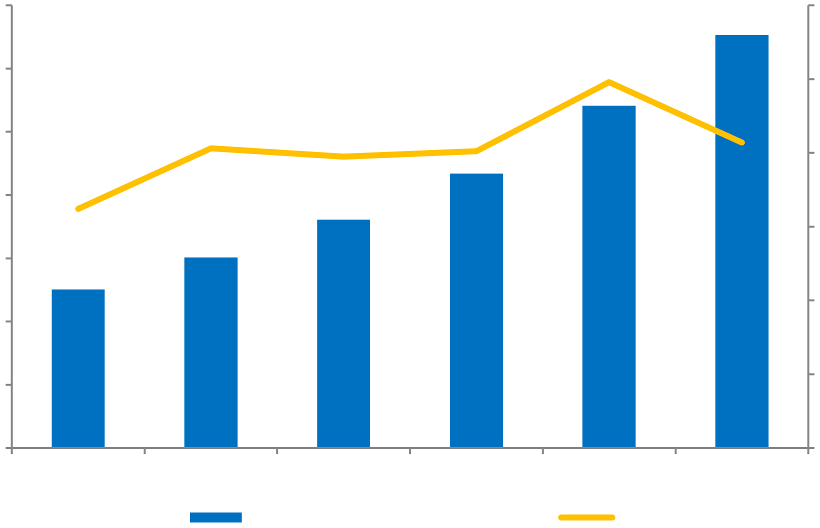
20% 33%

2018

6,531 20.7% 2013-2018

21.09%

18



2.2

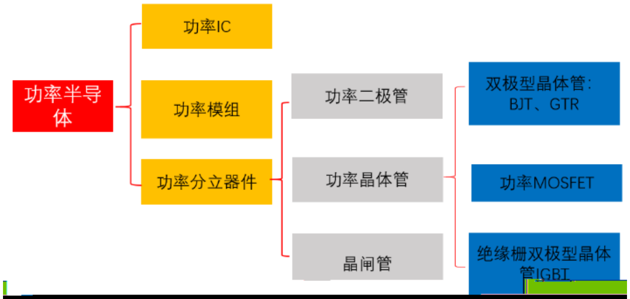
IC

( )

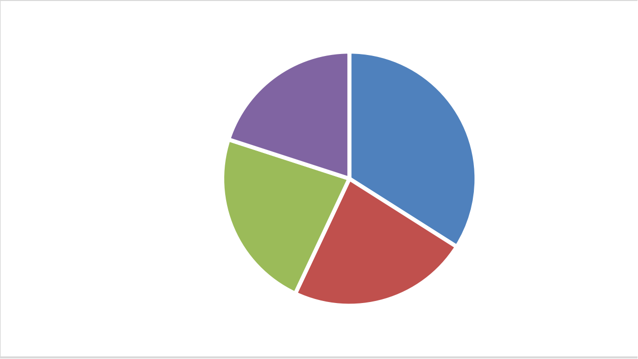
34% 23% 20% 23%

19

20 **2017**



[redacted]



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

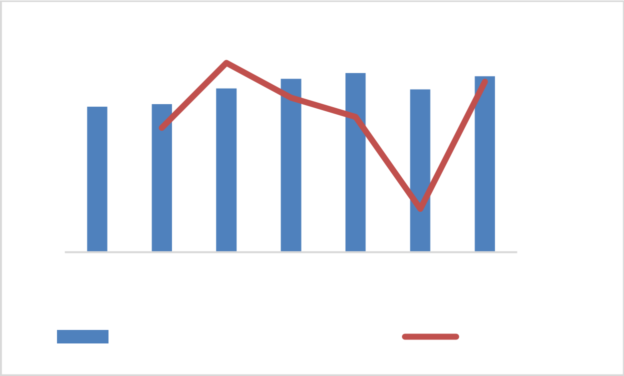
4 5G 4G 4G 3

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

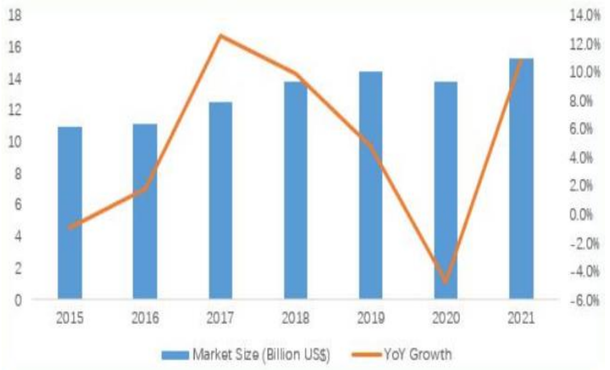
2020 367
9.1% 2021
397 8.1%

21

22



QYresearch

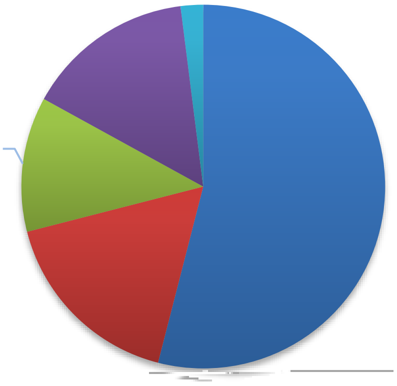


QYresearch

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%

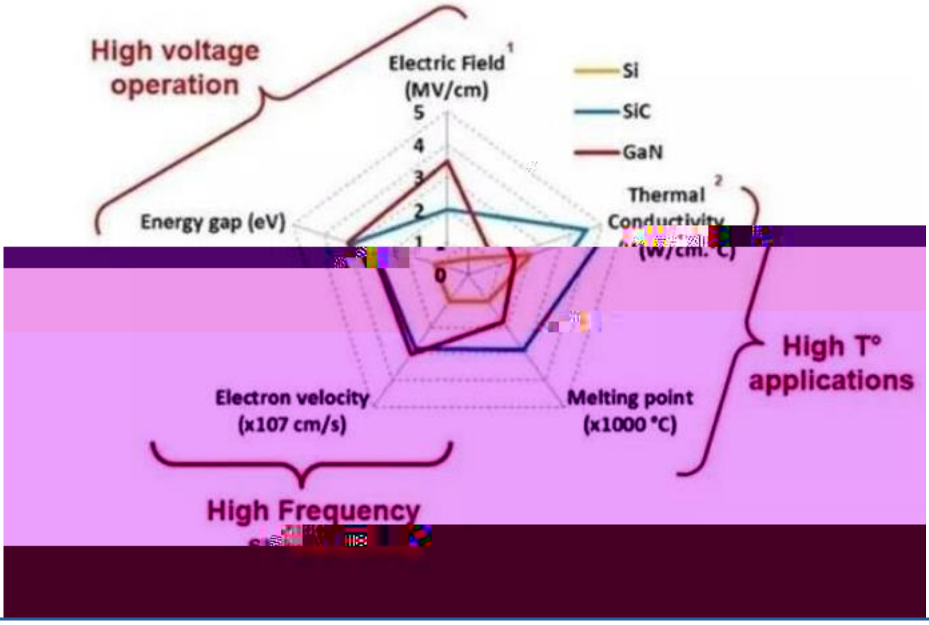
MOSFET

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%

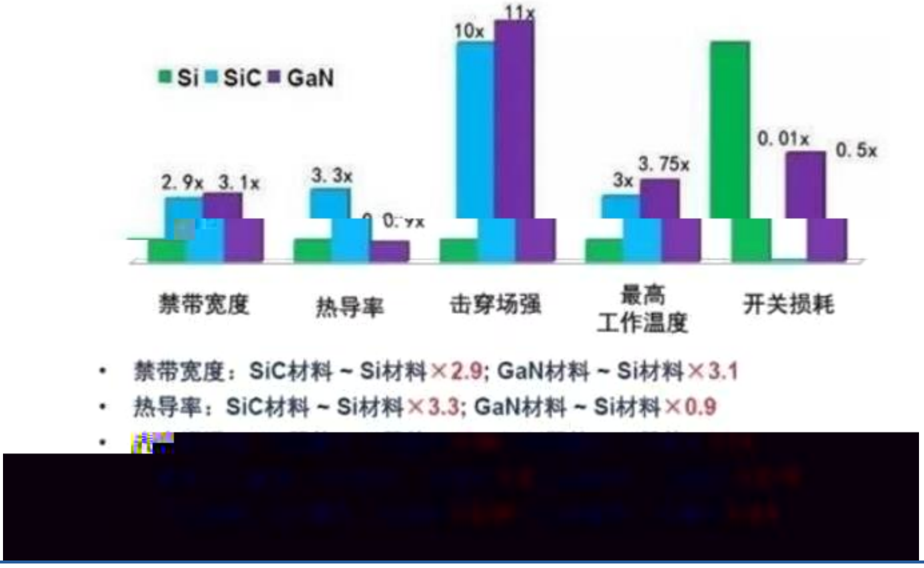
27



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

GaN

28 **Si SiC GaN**

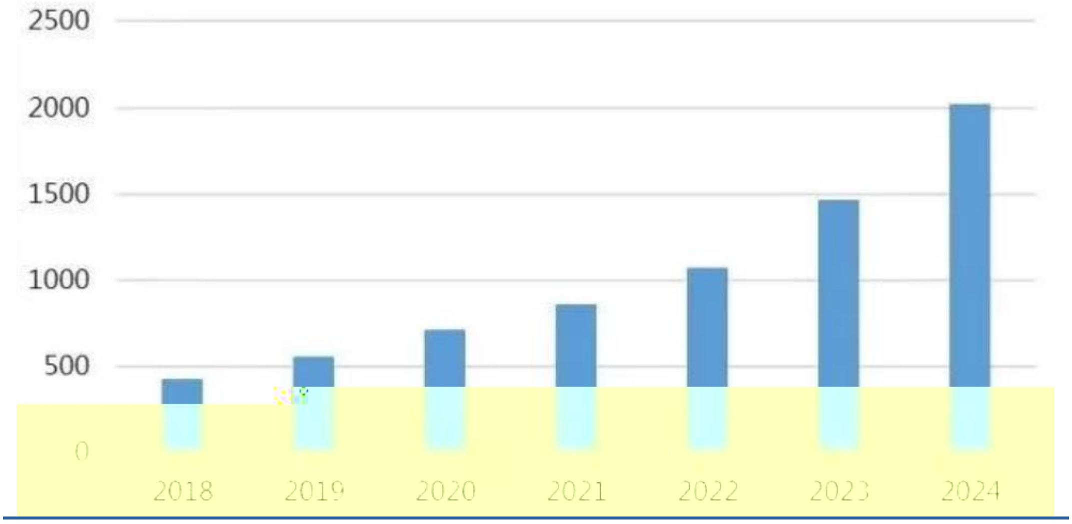


- 禁带宽度：SiC材料～Si材料×2.9; GaN材料～Si材料×3.1
- 热导率：SiC材料～Si材料×3.3; GaN材料～Si材料×0.9
- [illegible]

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.

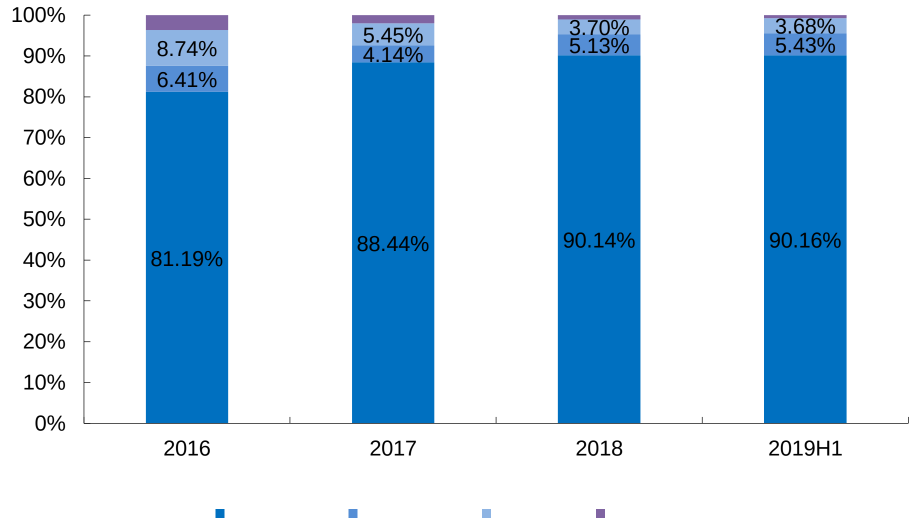
3.1 **MOSFET**

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

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**

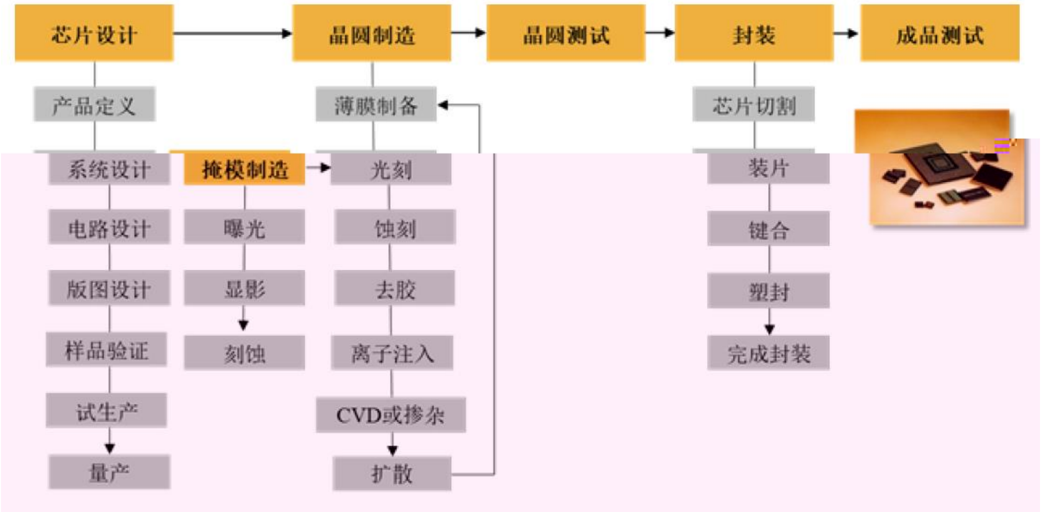
Fabless

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

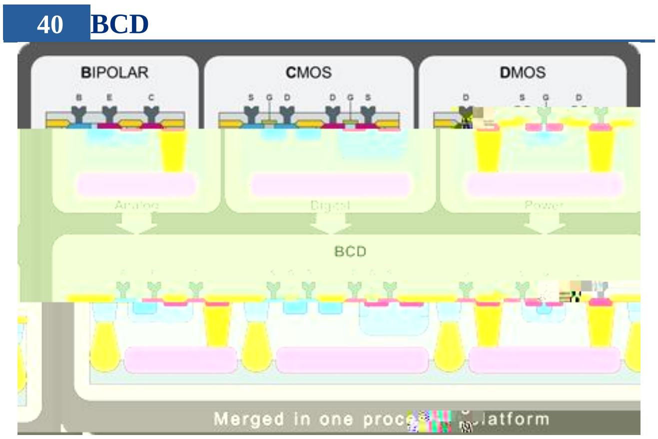
5

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

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

39

40 BCD



BCD 4 BCD 0.13 BCD
BCD CMOS
BCD IDM

BCD 5-700V BCD
BCD SOI BCD BCD

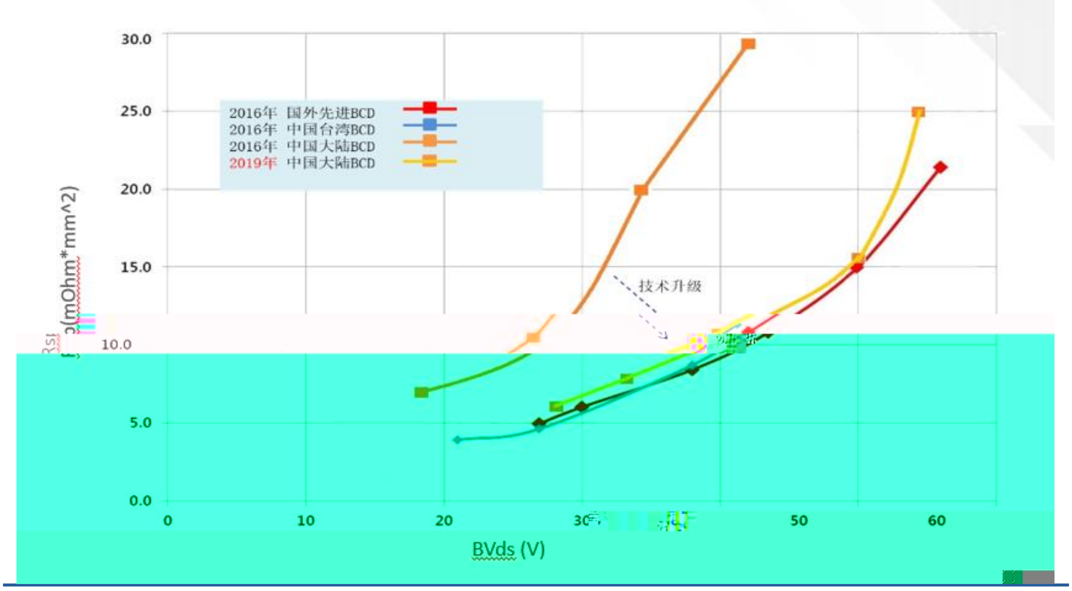
1 BCD 0.18μm BCD 7-120V 6
0.11μm

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

3 SOI BCD SOI BCD

IGBT

41 **BCD**

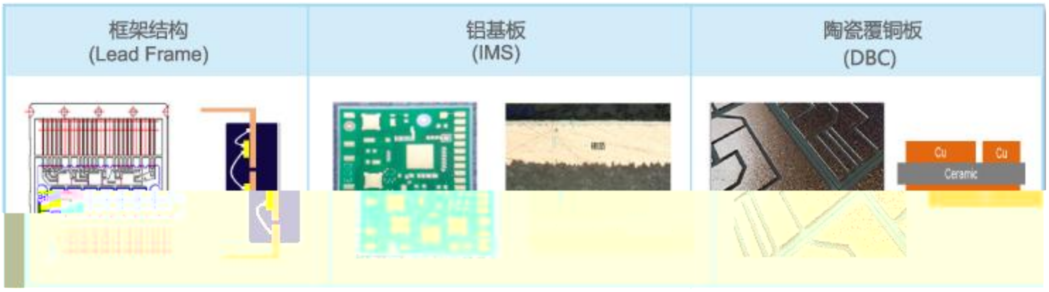


CopperClipBond
FC IPM

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
“ ”

减