

(688396)

IDM

()	()
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IDM
BCD/MEMS

●				62.60			2020-2022
	5.22	7.17	9.25		EPS	0.43	0.59 0.76
	2020	7.42	PB				

2020.06.08

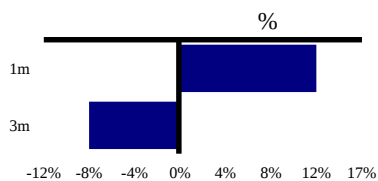
(688396)

62.60

42.54

2020.06.07

www.crmicro.com



52

32.38-50.99
51,725

EBIT

2018A	2019A	2020E	2021E	2022E
6,271	5,743	6,440	7,406	8,888
4,690	4,431	4,755	5,378	6,320
85	66	74	85	102
126	112	126	144	173
374	377	423	486	583
546	274	502	645	865
0	0	0	0	0
11	0	0	0	0
0	31	47	-40	-48
586	478	685	956	1,244
53	-6	72	100	128
108	112	130	179	231
429	401	522	717	925

(IC)

NOPLAT

1,538	2,438	6,984	7,310	7,760
27	44	44	44	44
0	82	82	82	82
3,898	3,816	3,966	4,266	4,566
571	557	557	557	557
9,992	10,095	15,203	16,412	17,966
4,654	1,979	2,121	2,384	2,783
318	1,726	1,726	1,726	1,726
5,020	6,391	11,356	12,302	13,458
7,471	7,897	12,862	13,808	14,964
497	277	452	581	778
953	709	-7	-7	-7
133	-1,192	63	64	99
-533	-611	-308	-508	-557
1,050	-816	200	130	314
1,482	576	631	889	1,113
-575	-41	-308	-508	-557
-627	-180	4,223	-56	-105
281	356	4,546	325	450

EBIT

EBIT

(ROE)
(ROA)
(ROIC)

6.7%	-8.4%	12.1%	15.0%	20.0%
8150.3%	-49.9%	83.3%	28.6%	33.9%
511.0%	-6.7%	30.2%	37.4%	29.0%
25.2%	22.8%	26.2%	27.4%	28.9%
8.7%	4.8%	7.8%	8.7%	9.7%
6.8%	7.0%	8.1%	9.7%	10.4%
10.4%	7.4%	5.1%	6.5%	7.7%
5.4%	5.1%	4.3%	5.5%	6.4%
6.7%	3.5%	3.5%	4.2%	5.2%
91.9	86.9	86.9	86.9	86.9
35.0	51.8	51.8	51.8	51.8
581.6	641.6	861.6	808.8	737.9
3.5	1.4	1.2	1.2	1.2
8.5%	10.6%	4.8%	6.9%	6.3%
49.8%	36.7%	25.3%	25.0%	25.1%
99.1%	58.0%	33.9%	33.4%	33.5%
118.35	126.82	97.38	70.87	54.96
0.00	0.00	4.95	4.61	4.25
0.61		88.41	71.27	52.55
5.53	6.04	7.57	6.86	5.72
0.0%	0.0%	0.0%	0.0%	0.0%

PE

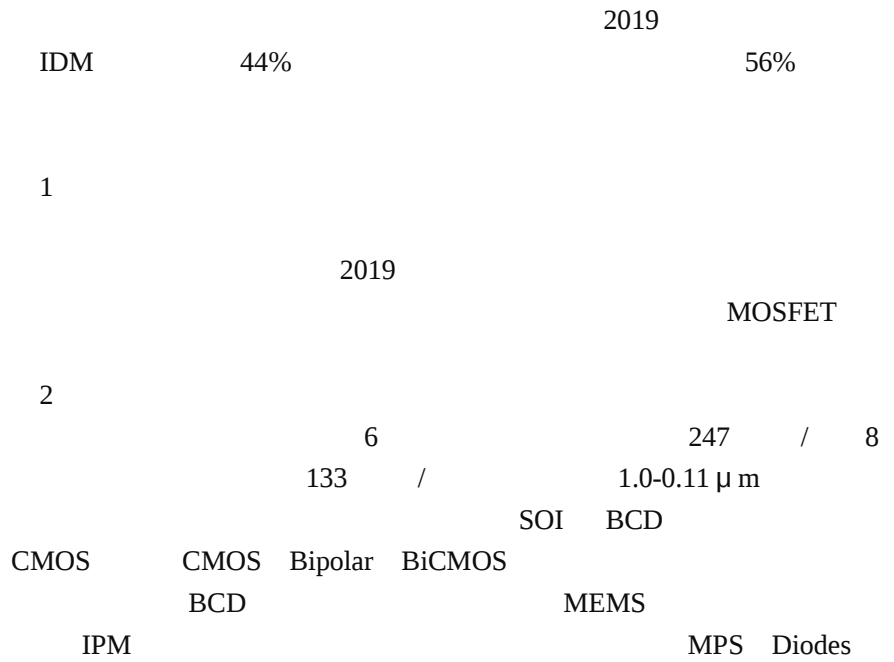
PB

EV/EBITDA

P/S

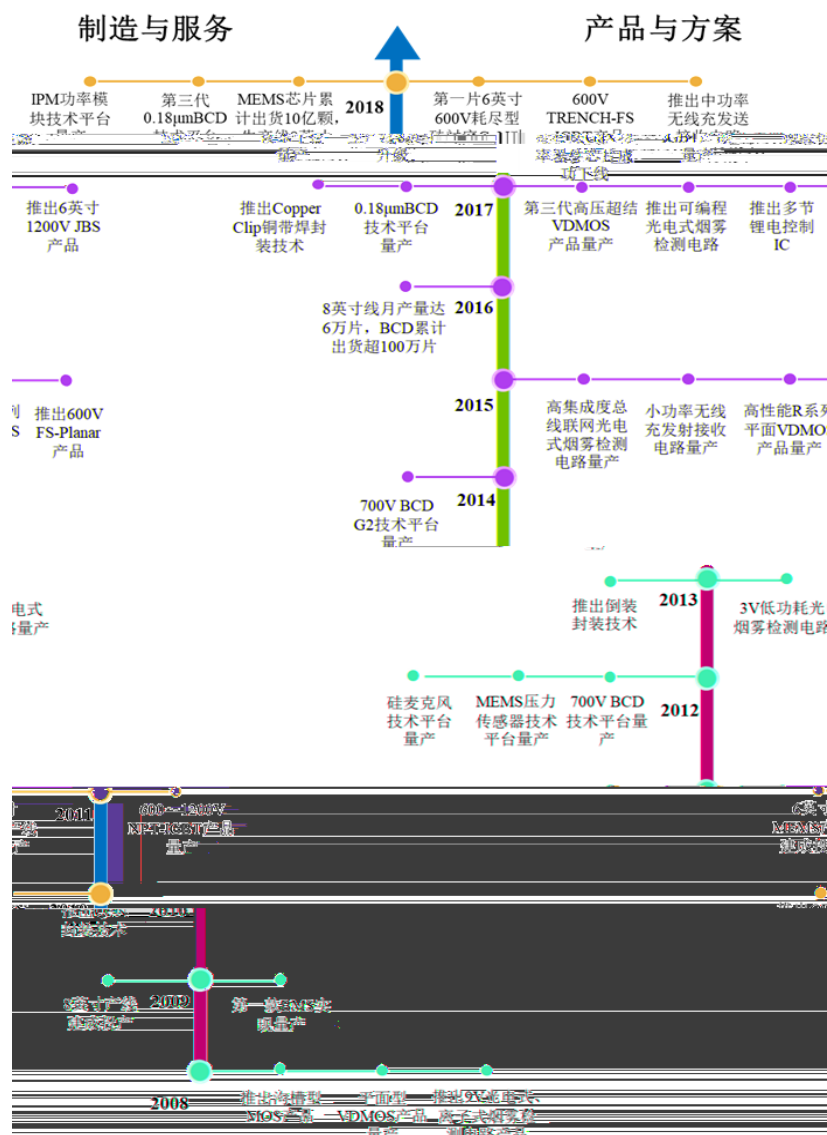
1. IDM

1.1.



1

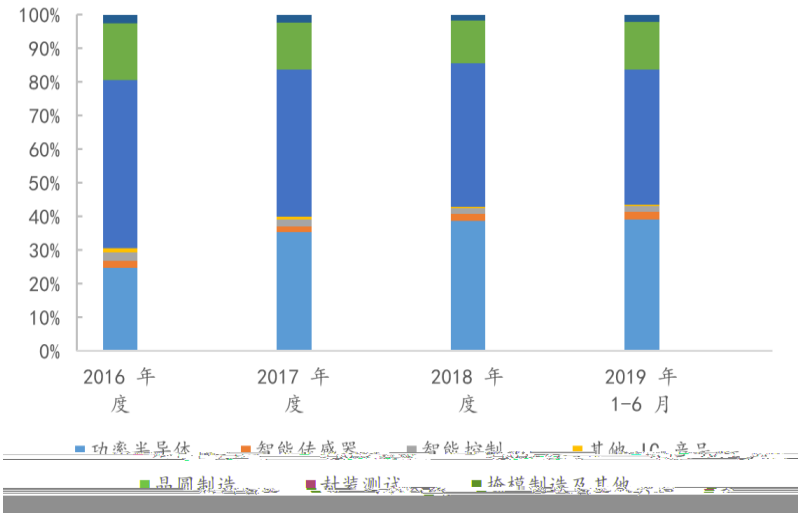




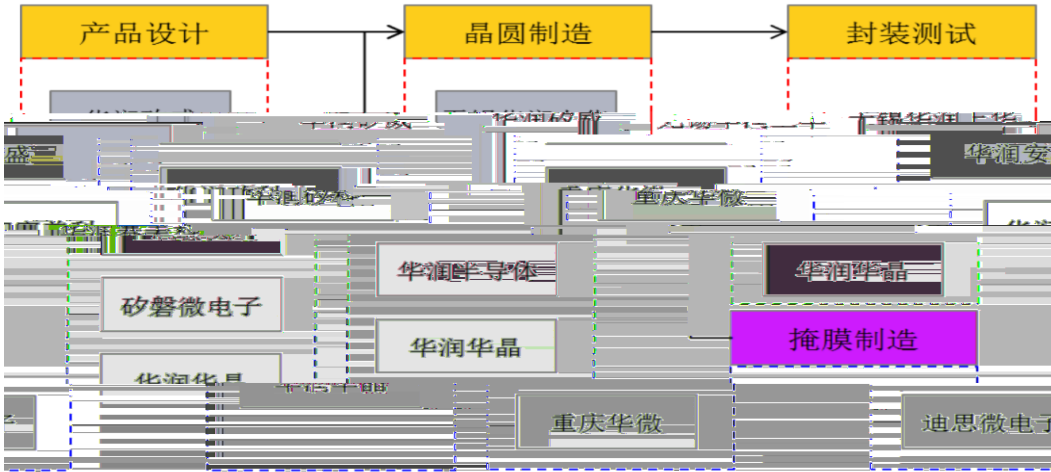
2019H1	40.35%	39.13%
14.06%	2019	

39.81%

3



4



			2019	2,578
PCT		399	291	
	1,401		1,228	
173	MOSFET	IGBT	FRD	MEMS
			SBD	
			BCD	

2019
1771
1128
737

1:

				%
2019 1-6	1		7,889.40	2.99%
	2	MPS International, Ltd	7,222.97	2.74%
	3	Diodes Incorporated	5,665.30	2.15%
	4		5,195.50	1.97%
	5		5,149.24	1.95%
			31,122.41	11.79%

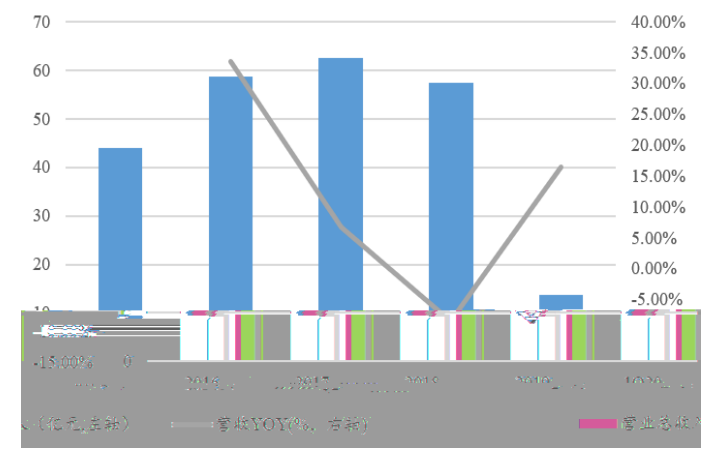
1.2.

2016-2018 2016
2018 43.97 58.76 62.71
19.4% -3.03 0.70
4.29 2017

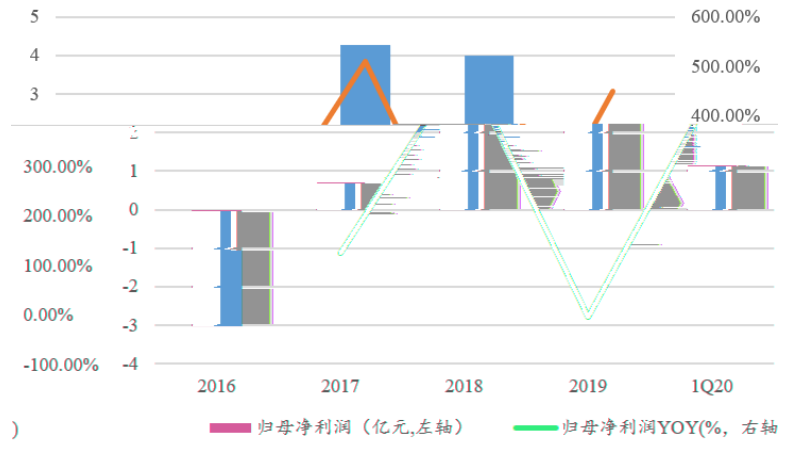
2019
2020Q1 2019
57.43 8.42% 4.01
6.68% 2019 2018 4
2020Q1 13.82
16.53% 1.14 450.35%

2019

5 2020Q1



6 2020



20Q1

17.62% 25.20%

2016

2020

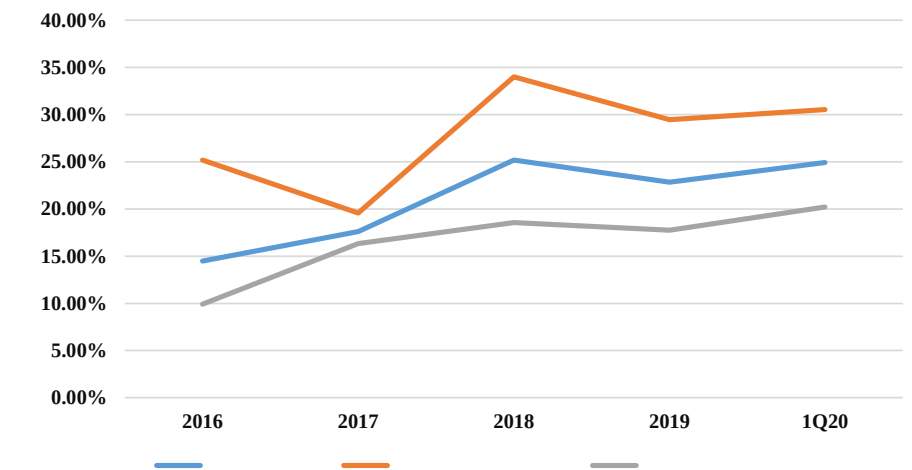
-2019

14.49%

24.92% 2019

2020Q1

7 20Q1



wind

1.3.

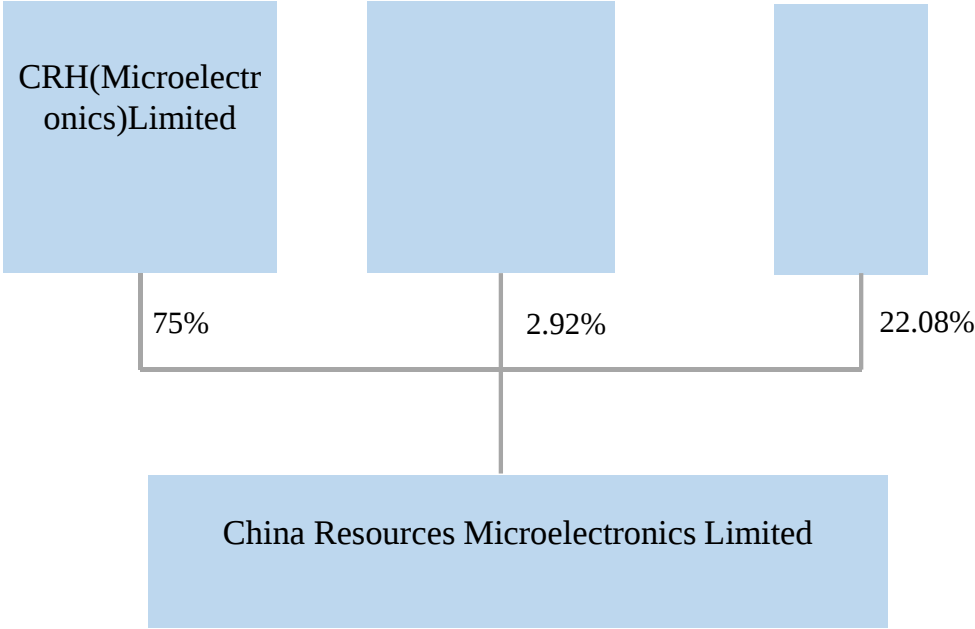
CRH (Micro)
CRH 75%
2.92%

100%

IPO

									2011
								IPO	
				292,994,049				25.00%	
									15%
				336,943,049				27.71%	
	2020	3	27						
								292,994,049	
				43,949,000					
				336,943,049				56,254.72	
				292,994,049				375,032.38	
								431,287.10	
				7,712.64				423,574.46	
					16			20	3
						7			

8 CRH



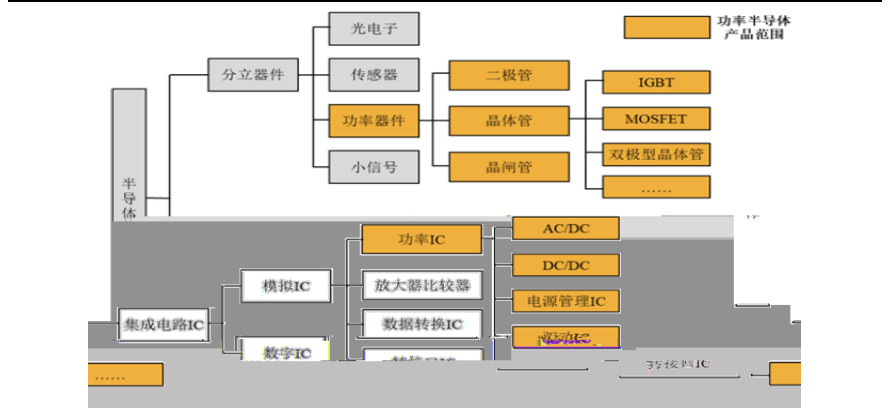
Wind

2. :

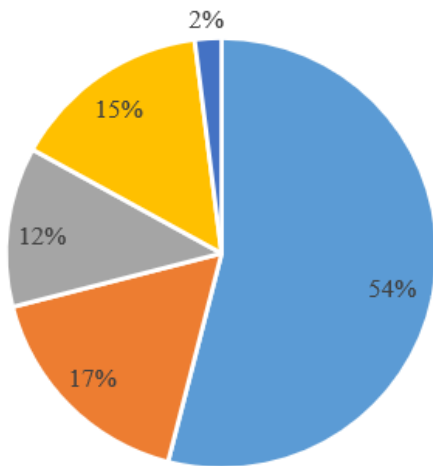
MCU

IC

10



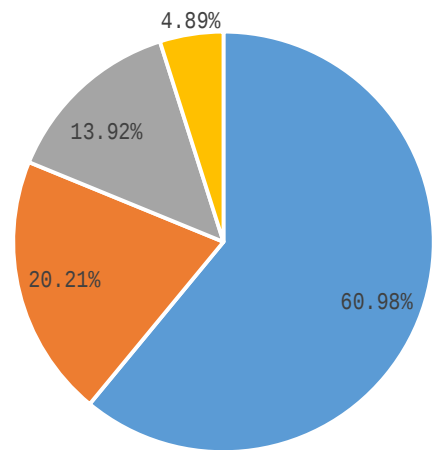
11 IC MOSFET IGBT 2017



■ 功率IC ■ IGBT ■ MOSFET ■ 功率二极管 ■ 其他

QY Research

12 IC MOSFET IGBT 2018



■ IC ■ MOSFET ■ IGBT ■ 其他

IHS

2019

5G

459

463

431

Omdia 2020

6.6%

Omdia 2020

2020

6.9%

2021

			2021	160		
		IC			Omdia 2019	2018
				166	8%	40%
		2020			149	
		6%			2021	2022
			167			
13	2020		14		2017-2022	
2021						

Omdia 2020

Omdia 2019

IC

IC

GaN SiC

>

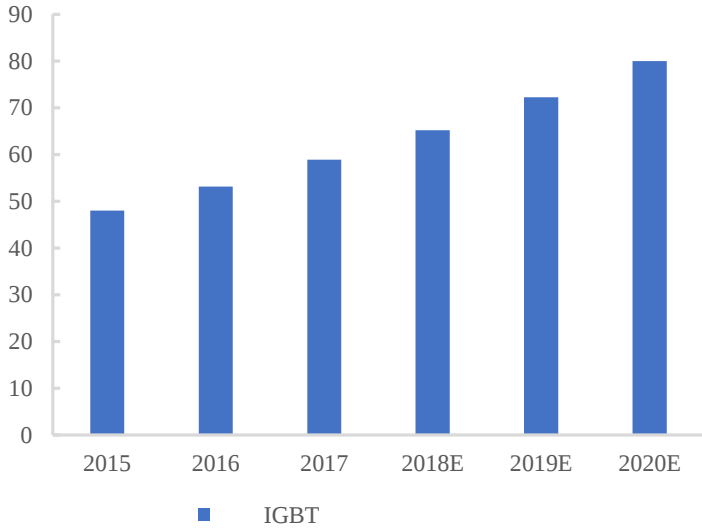
IC

IGBT

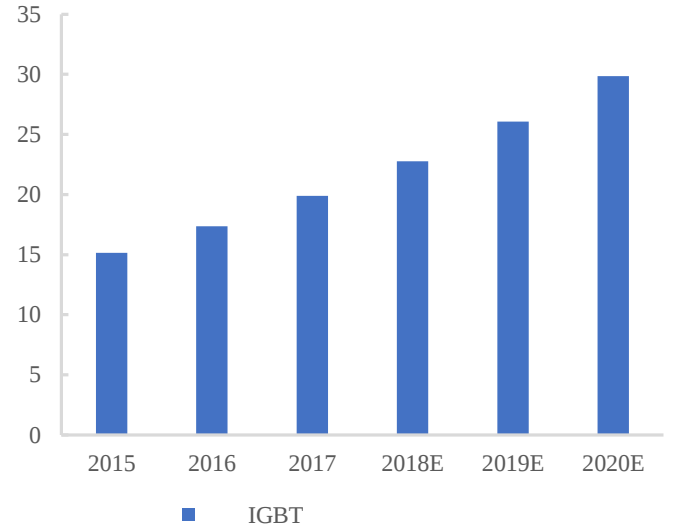
IGBT

IGBT 2015
 IGBT 2020
 CAGR 10%
 IGBT 2015
 IGBT 2020
 CAGR 15%

15 IGBT 2020 80



16 IGBT



IHS 2017 10
 60
 5.3
 9

19

IHS

2.1.2.

MOSFET

MOSFET

IC IGBT

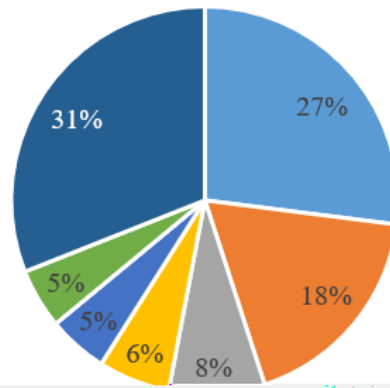
	MOSFET	20-40V N/P-Ch Trench MOSFET
		60-200V Trench MOSFET
		400-700V Planar MOSFET

VDMOS MOS
IHS Markit

MOSFET

MOSFET

18 2019 MOSFET



■ 其他 ■ 英飞凌 ■ 安森美 ■ 华润微 ■ 东芝 ■ 意法半导体 ■ 瑞萨

Omdia 2019

MOS

2019

MOS

MOS

1.7 MOS

5A-43A

MOS
MOS

30V
MOS

MOS

2019

MOSFET

4

/

IC

IC
IC

LED

BCD

IC

IC

IC

SOC IC

IC
100

QI

IC

IC

2-7

5-8

10

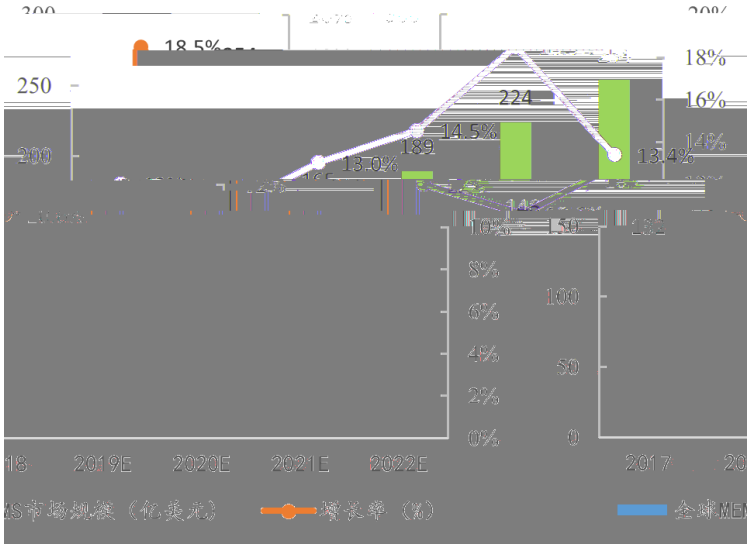
14-16

AFE

	2019	BMS IC	2-10
		64%	
IGBT			
8	IGBT	,	
Trench-FS IGBT	IGBT	16	
IGBT	IGBT		
		8	IGBT
		Trench-FS	
600V-6500V IGBT		Trench-FS IGBT	
		IGBT	
	2019	IGBT	45%
6000			
	SBD		
SBD	FRD	SBD	8
Trench		FRD	
IC			
	MOSFET	IGBT	
	IC		
2.2.			
	MEMS		MEMS
MEMS		2018	MEMS
	146	10.8%	
MEMS			
	Yole Development	2018-2022	MEMS
		14.85%	MEMS
	60%		

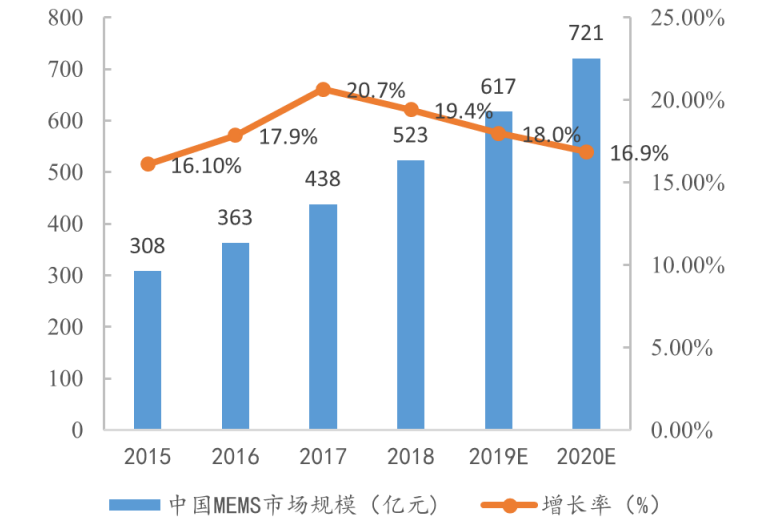
2018 MEMS 523
 19.5% 2018-2020 17.41%

19 MEMS



Yole

20 MEMS



IDM

MEMS
MEMS

IDM Yole Development 2017
IDM

MEMS
MEMS
MEMS
IC

MEMS

3:

	MEMS		

2.3.

MCU

MCU CPU RAM ROM

4 8 16 32

32 CPU IP MCU

MCU

Gartner 2014

37.5 2020 250 3,000

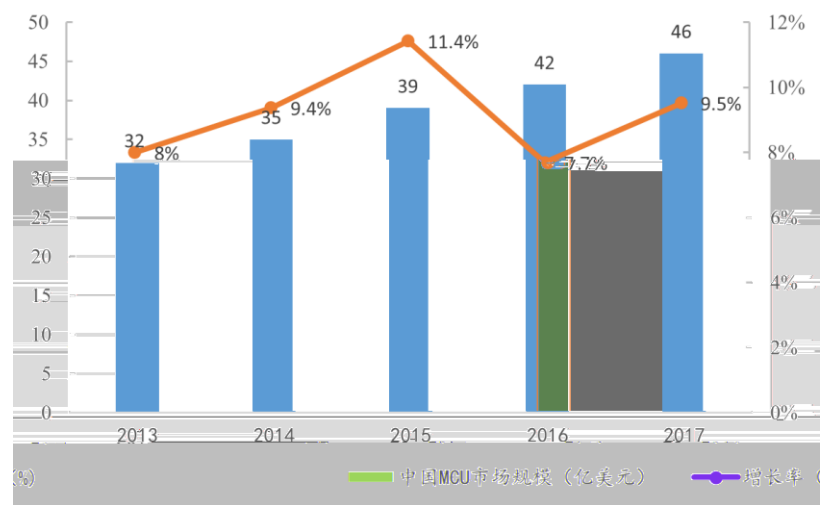
MCU

60%-70%

IHS Markit 2017 MCU

46 5 9.5%

21 MCU



IHS Markit

32 CPU IP MCU

MCU MCU MCU

OTP MTP Flash CMOS

4 8 16 32 CPU

4: MCU

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

BCD/MEMS

			2019	31.84	
	8.09		14.19%	2.97%	
		23.75		14.75%	
	152.7	14.75%	4.29		19.98%
2019					
	71.29%	24.82%			
	22				

wind

MEMS

BCD

IPM

6

247

/ 8

CMOS Bipolar BiCMOS
 BCD MEMS
 1 8 60
 1 8 3 6 8
 73 6 247
 MOS MOS SBD
 MOS MOS IGBT GaN
 2019 “ 0.18 BCD
 ”
 MEMS 6 8
 23.1 8 BCD/MEMS
 1.6 / 2018 9 2021 5
 2020 7 BCD
 0.13um/0.11um MEMS 6 8
 12
 90nm

5:

			2018
	3 6	Analog BCD MEMS DMOS Power Discrete	247
	1 8	Advance BCD Analog DMOS	73
	1 8	MOS MOS MOS SBD	60
			199
		QFP QFN PQFN FC-QFN TSSOP SSOP MSOP IPM	62
			69
			2.4

2.4

		81.59%	79.57%	82.42%	-
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2016 -2018 8 2019

2017 8 83.11%

99.01% 2017 52.41%

8

2016 -2018

6

6

6

2016 -2018

2019

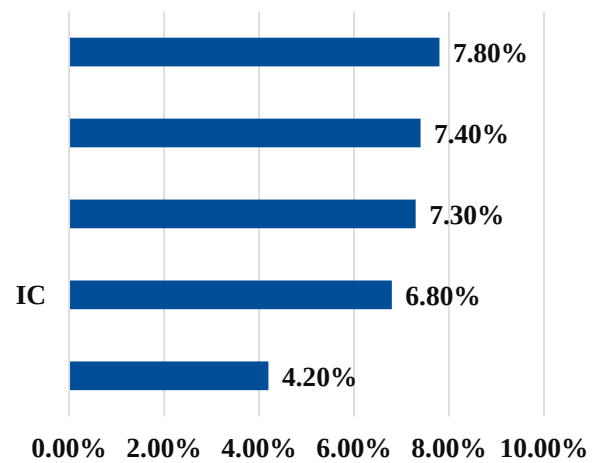
IC MEMS

0.35-90nm

0.35um-90nm

IC

23



IC Insights

MPS Diodes

IC

IC

BCD Bipolar-CMOS-DMOS

Bipolar

CMOS

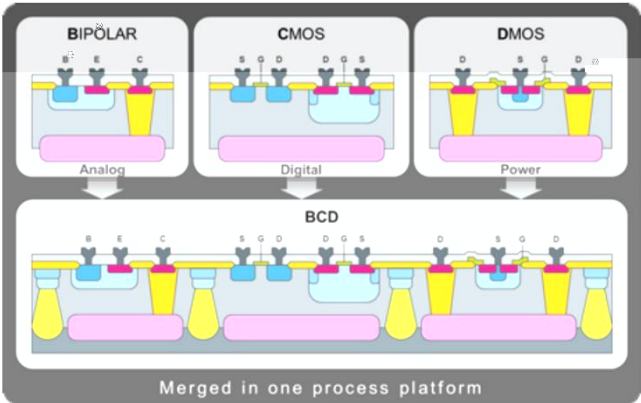
DMOS

Transparency Market Research
 IC

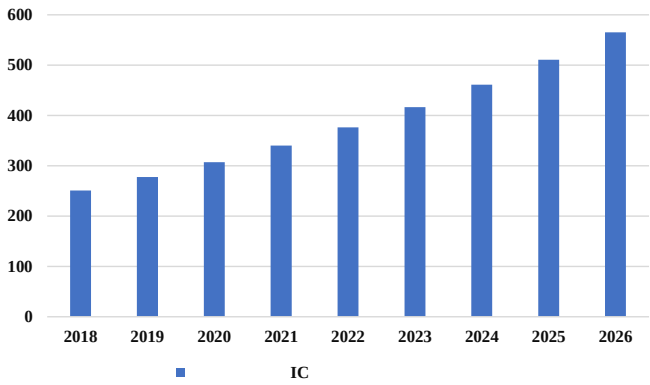
		IC	2026
565	2018-2026	CAGR	10.69%

	MEMS	MCU	2.2	2.3
--	------	-----	-----	-----

24 BCD



25 IC



Transparency Market Research

4.

BCD/MEMS

		30	15	8	BCD
		8	MEMS		
BCD	MEMS	16,000			6
			SiC	GaN	
	IC		MEMS		
					3
		6			
			5	15	
	2019				
	67,320.13				

7:

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

8

16,000 2019 8 BCD MEMS
 MEMS
 3
 6 8
 MEMS
 BCD
 0.11um BCD 0.11um
 BCD e-flash 5V I/O
 PMIC sub-PMIC
 BMS
 BCD MEMS 16,000
 1
 SiC GaN
 Yole Development 2022 GaN
 11 SiC 4.5
 IDM
 650V GaN SiC JBS SiC
 MOSFET
 SiC
 6 SiC JBS
 JBS 1200V 650V
 MOSFET
 2020 SiC
 GaN 6
 GaN
 650V
 GaN MOCVD GaN MOCVD

2020

IDM

2020/2021/2022 22.88%/19.79%/32.00%
2020/2021/2022 5.20%/10.58%/ 8.00%
2020/2021/2022 52%/50%/45%
2020/2021/2022 0
2020/2021/2022 12.14%/15.00%/20.00%
2020/2021/2022 26.16%/27.38%/28.89%

8

	2017	2018	2019	2020E	2021E	2022E
	3519.76	3571.91	3183.52	3348.92	3703.13	3999.38
%	59.90%	56.96%	55.44%	52.00%	50.00%	45.00%
%		1.48%	-10.87%	5.20%	10.58%	8.00%
%	16.33%	18.57%	17.76 %	18.00%	17.76%	17.76%

IDM

50%

PB	2020	PB	4.95	2020	7.42
PB	62.60				
PS	2020	PS	9.80	2020	14.70
PS	77.86				

62.60

9

2020 6 6

			P/S 2020E				PB		
				2020E	2021E	2022E	2020E	2021E	2022E
300623.SZ		25.07	14.16	4.79	5.39	6.59	5.23	4.65	3.81
300373.SZ		28.36	5.43	6.08	6.78	7.71	4.67	4.18	3.68
			9.80	-			4.95	4.42	3.74

wind

wind

7.

1.		300		15%	
12		12			
300					