

(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

2020.06.08

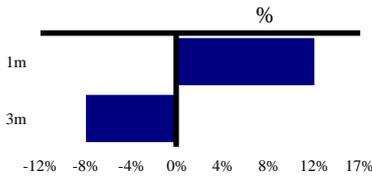
(688396)

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
EBIT	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

	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
(IC)	7,471	7,897	12,862	13,808	14,964

NOPLAT

	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

	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%

EBIT

	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%

(ROE)
(ROA)
(ROIC)

	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%

PE

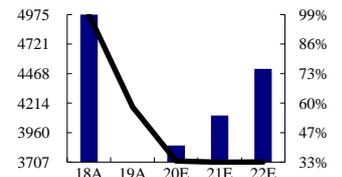
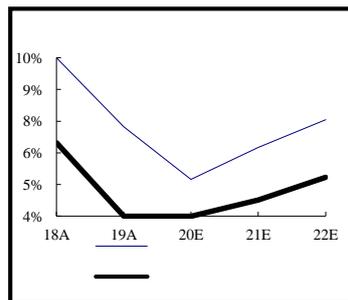
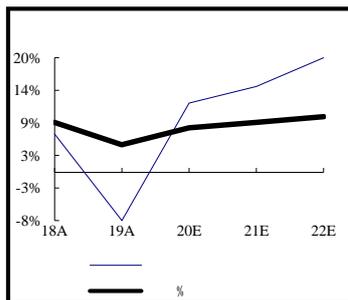
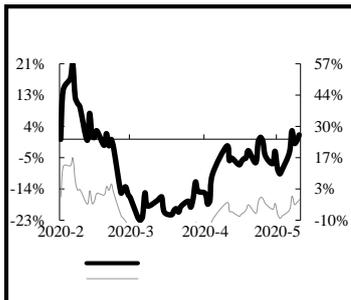
	91.9	86.9	86.9	86.9	86.9
	35.0	51.8	51.8	51.8	51.8
	581.6	641.6	861.6	808.8	737.9
	3.5	1.4	1.2	1.2	1.2
	8.5%	10.6%	4.8%	6.9%	6.3%

PB

EV/EBITDA

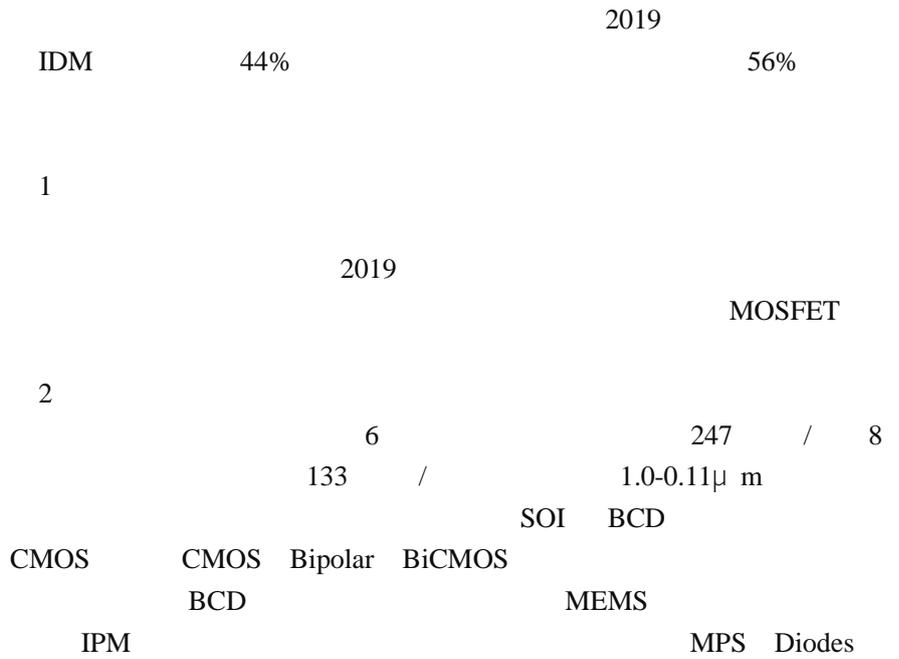
P/S

	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%



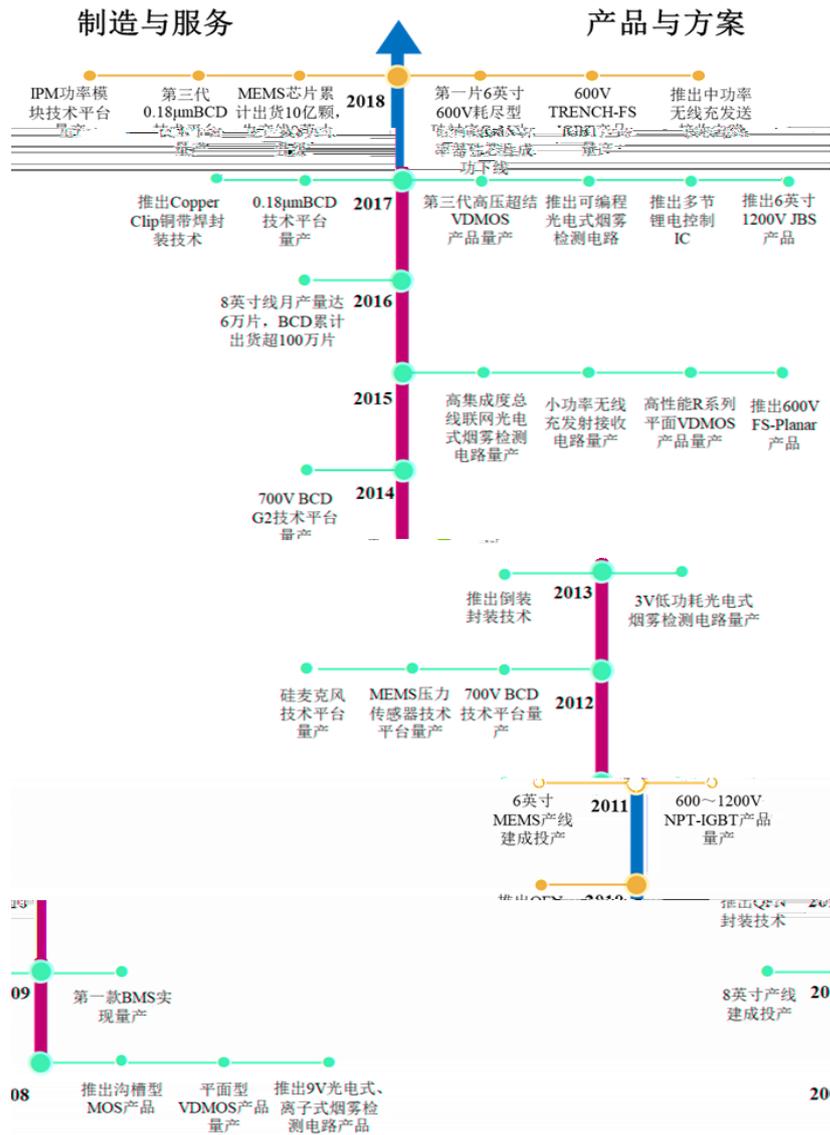
1. IDM

1.1. !



1



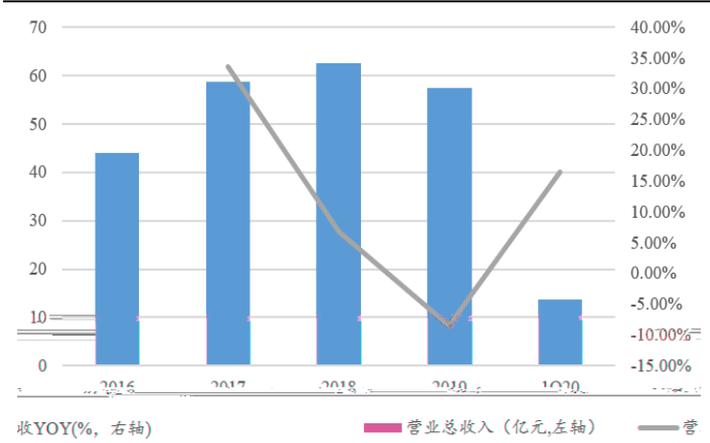


2019H1 40.35% 39.13%

14.06% 2019

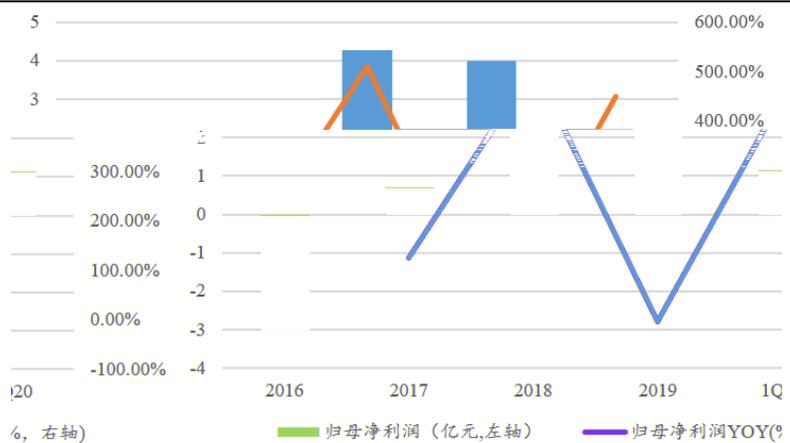
39.81%

5 2020Q1



wind

6 2020

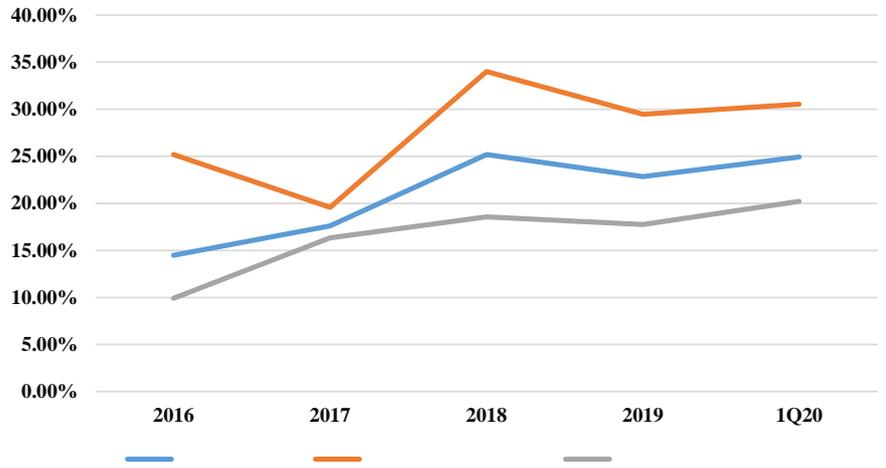


wind

20Q1		2016	-2019	14.49%
17.62%	25.20%	22.84%	2020	24.92%
			2019	

2020Q1

7 20Q1



wind

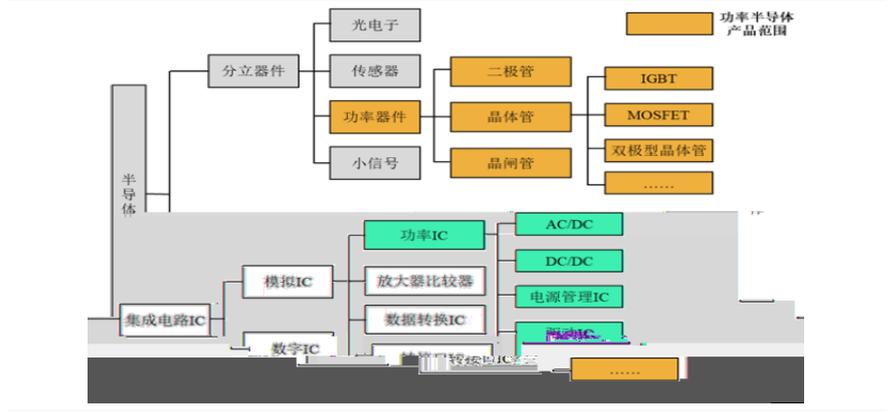
1.3.

CRH (Micro)	100%
CRH	75%
	2.92%

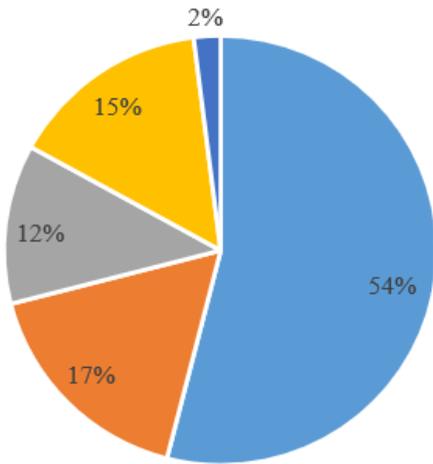
IPO

IC

10



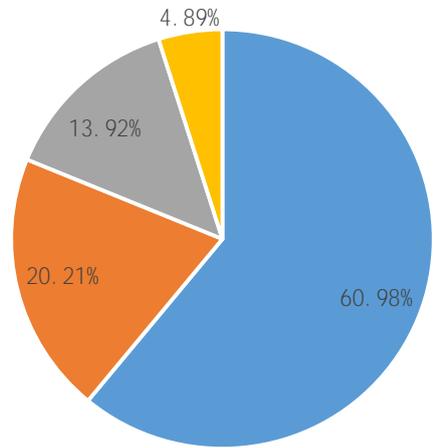
11 IC MOSFET IGBT 2017



■ 功率IC ■ IGBT ■ MOSFET ■ 功率二极管 ■ 其他

QY Research

12 IC MOSFET IGBT 2018



■ IC ■ MOSFET ■ IGBT ■ 功率二极管

IHS

2019

5G

459

463

431

Omdia 2020

6.6%

Omdia 2020

2020

6.9%

2021

		2021	160		
				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

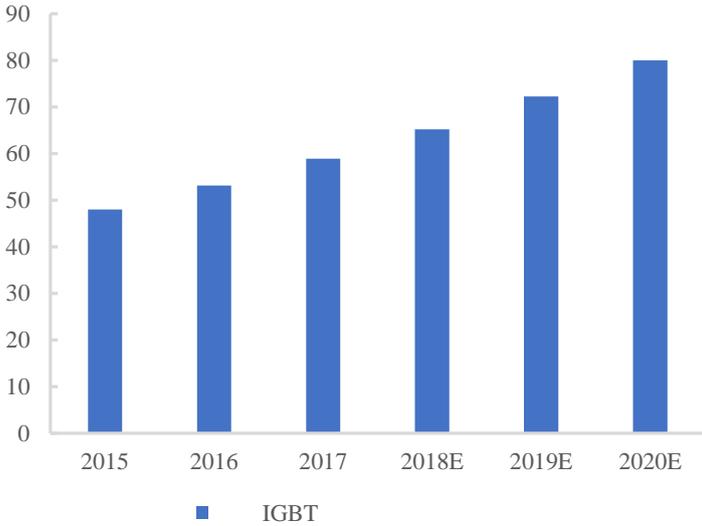
IC

IGBT

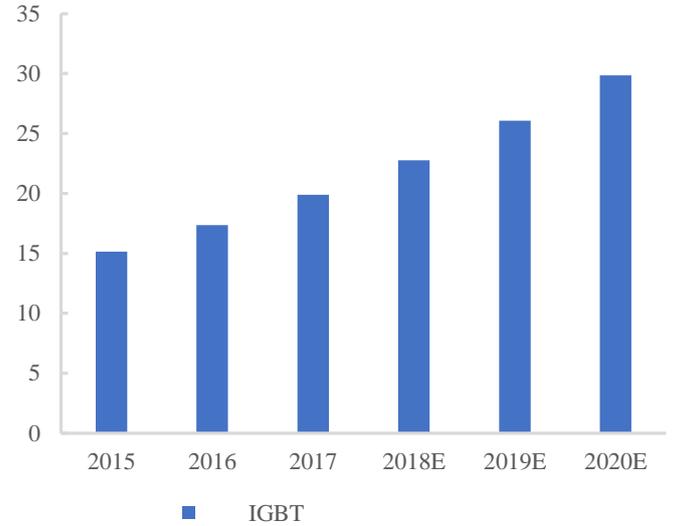
IGBT

IGBT 2015 48
IGBT 2020 30
CAGR 10%
IGBT 2015 15
CAGR 15%

15 IGBT 2020 80



16 IGBT



IHS 2017 10
60

19

9

5.3

IHS

2.1.2.

MOSFET

MOSFET

IC

IGBT

(

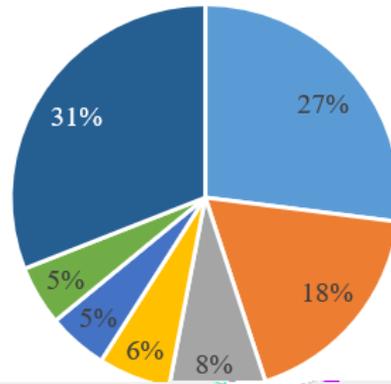
	MOSFET	20-40V N/P-Ch Trench MOSFET
		60-200V Trench MOSFET
		400-700V Planar MOSFET

VDMOS MOS
IHS Markit

MOSFET

MOSFET

18 2019 MOSFET



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

Omdia 2019

MOS
2019

MOS

MOS 1.7 5A-43A MOS MOS MOS

30V
MOS

MOS

2019 MOSFET
4 /

IC

IC
IC

LED IC
BCD

IC

IC

SOC IC

IC
100

IC

2-7 IC 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

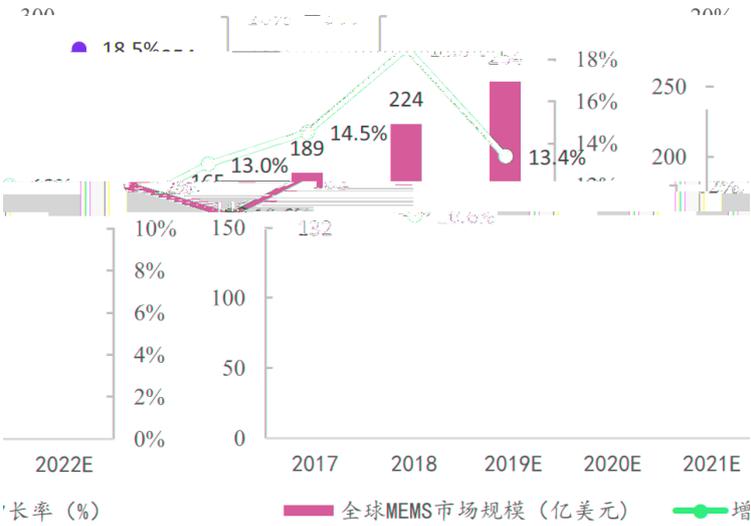
2.2.

MEMS MEMS

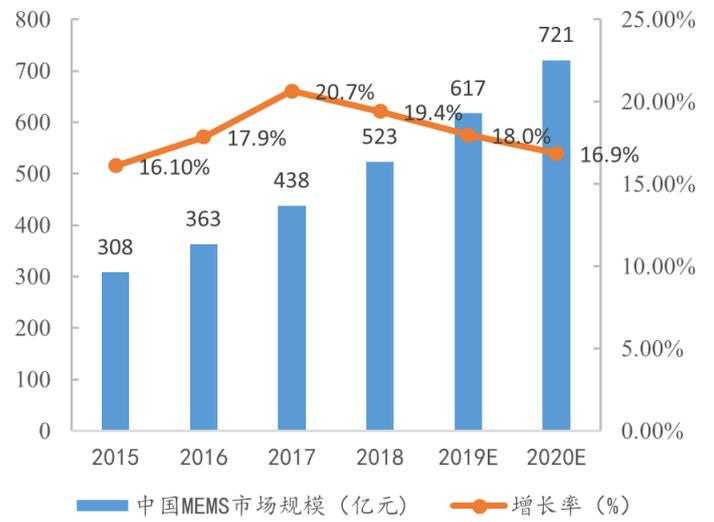
MEMS 2018 MEMS
146 10.8%
MEMS
Yole Development 2018-2022 MEMS
14.85% MEMS
60%

2018 MEMS 523
 19.5% 2018-2020 17.41%

19 MEMS



20 MEMS



Yole

IDM
 MEMS
 MEMS
 IDM Yole Development 2017
 IDM
 MEMS
 MEMS
 IC

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

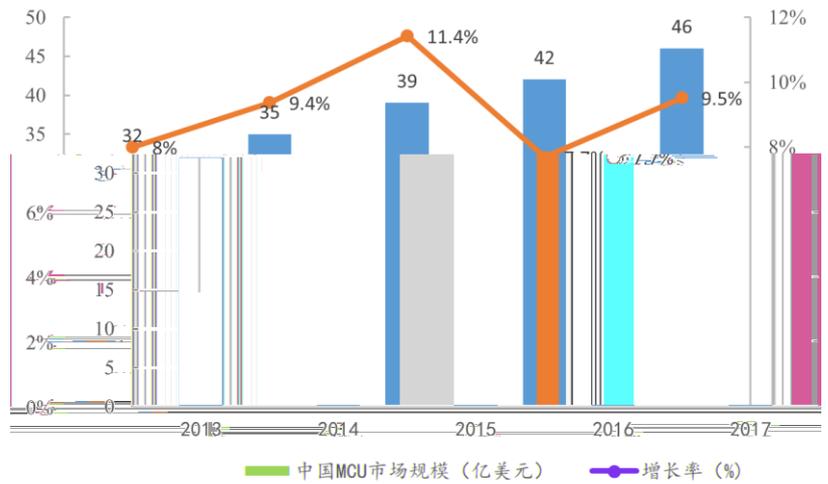
60%-70%

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	CPU 8 16 32	

3.

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

			BCD	
	MEMS		IPM	
6		247	/	8

CMOS Bipolar BiCMOS
BCD MEMS
1 8 60
1 8 3 6 8
73 6 247
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	2017	83.11%
99.01%		8	52.41%
2016	-2018	6	
		6	
		6	
2016	-2018	2019	

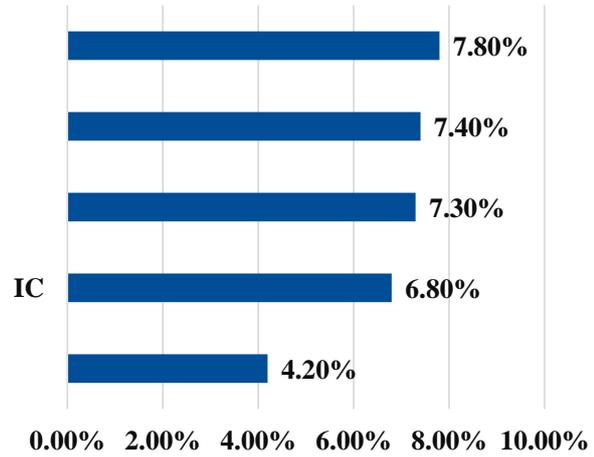
IC MEMS

0.35-90nm

0.35um-90nm

IC

23



IC Insights

MPS Diodes IC

IC

BCD Bipolar-CMOS-DMOS

Bipolar

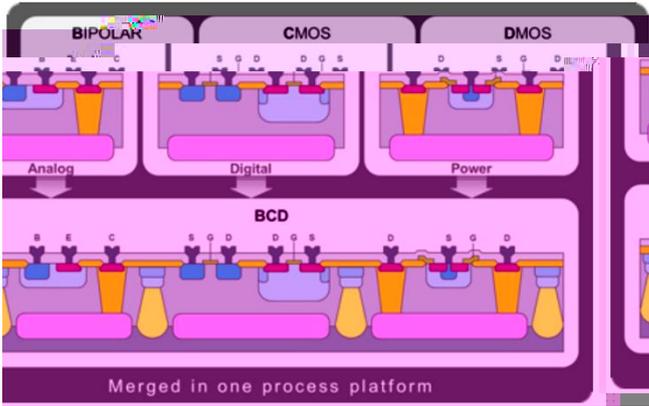
CMOS

DMOS

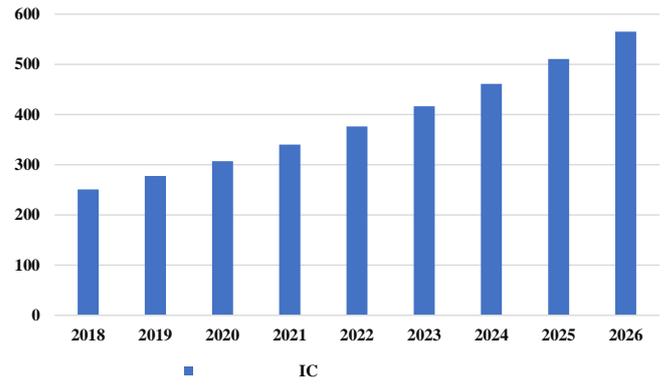
Transparency Market Research
IC

		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

BCD MEMS

16,000 2019 8 MEMS 3

6 8

MEMS

BCD

BCD 0.11um BCD 0.11um

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

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			