

# IDM

## 主要观点:



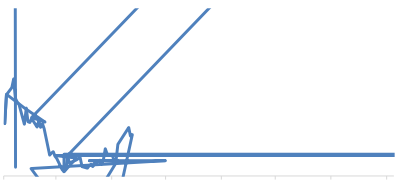
12 /  
%

1  
2  
3



)

300



1

+

IDM  
MOSFET IGBT SBD  
3 6 2 8  
8 12

IC

MEMS/

8

IGBT SiC

2

MOSFET  
200

8.7%

MOSFET

+

PC  
MOSFET

+

8

PMIC

+

3

SiC

SiC

650V/1200V SiC

6

2021

SiC MOS

10



IDM

67.4 /76.3 /85.9  
680 69X/62X/52X

2020/2021/2022

9.8 /10.9 /12.9



:

	2019	2020E	2021E	2022E
	5743	6743	7631	8595
(%)	-8.4%	17.4%	13.2%	12.6%
	401	985	1094	1292
(%)	-7%	146%	11%	18%
(%)	22.8%	29.1%	27.7%	28.7%
ROE(%)	8.0%	15.7%	14.9%	15.1%
( )	0.33	0.81		

1

IDM

H

- 1
- 2
- 3
- 4

1

IDM

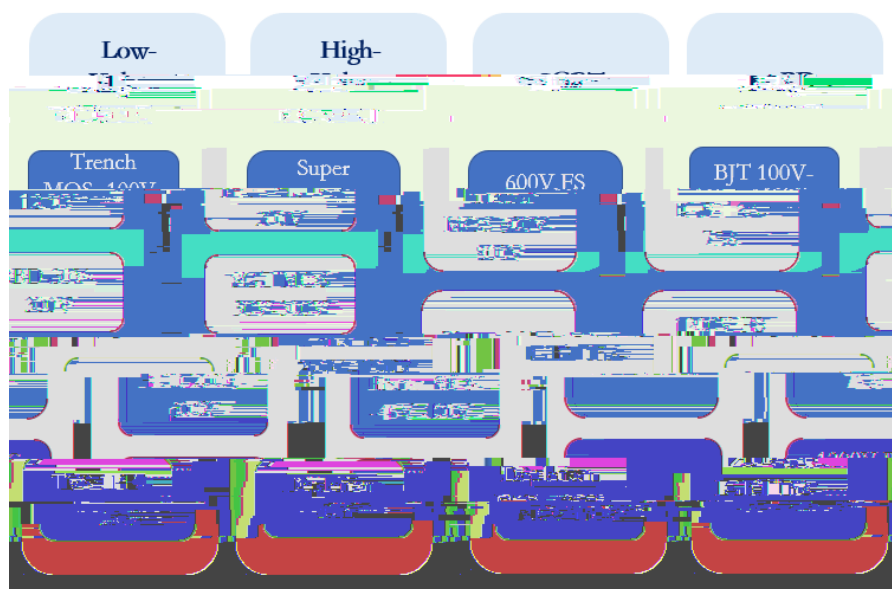


4

	2019 1-6		2018		2017		2016	
	102,793.73	90.16%	241,885.78	90.14%	206,857.89	88.44%	108,118.07	81.19%
	6,193.05	5.43%	13,764.40	5.13%	9,694.05	4.14%	8,535.64	6.41%
	4,190.38	3.68%	9,937.33	3.70%	12,750.40	5.45%	11,638.61	8.74%
IC	829.34	0.73%	2,761.23	1.03%	4,603.45	1.97%	4,880.93	3.67%
	114,006.51	100.00%	268,348.74	100.00%	233,905.79	100.00%	133,173.25	100.00%

MOSFET IGBT SBD FRD IC IC

5



IC 2018 MOSFET 16 2018 21.7 2018 MOSFET

6

	2018
1	21.7
2	18.5
3	17.1
4	8.1
5	7.7
6	7.2
7	6.9
8	6
9	5.4
10	4.9

2 MOSFET MOSFET  
 MOSFET MOSFET  
 100V 1500V MOSFET  
 MOS VDMOS MOS  
 IHS Markit MOSFET  
 2018 MOSFET MOSFET

7 MOSFET

	2018	MOSFET
1	52	28.40%
2	31	16.90%
3	16	8.70%
4	12	6.60%
5	12	6.60%
6	9	4.90%
7	51	27.90%
	183	100%

IHS

3

2

1

3 6

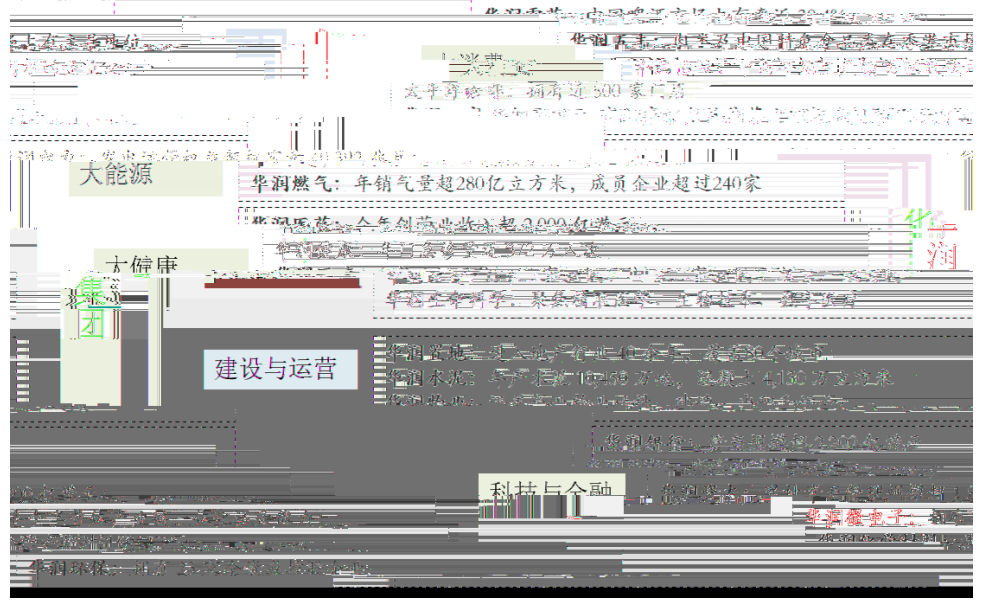
2 8





2019 " 500 " 80 14,000

11



---

12

---

---

13

---

---

Diodes Incorporated





2

2.1

IDM

2017



20 MOSFET

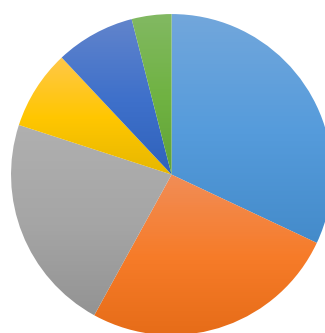
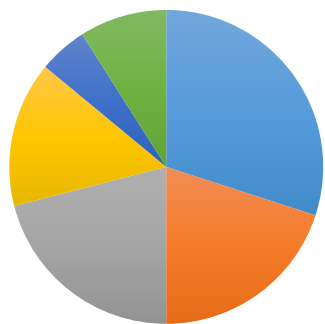


20%	MOSFET	15%	5%	30%
8%	21%	26%	22%	MOSFET
	32%			8%

21

MOSFET

%



	MOSFET	183		2018
16	MOSFET	8.7%		MOSFET
28.4%	31	16.9%		52
	MOSFET			

---

22	MOSFET	8.7%
----	--------	------

---

2.3

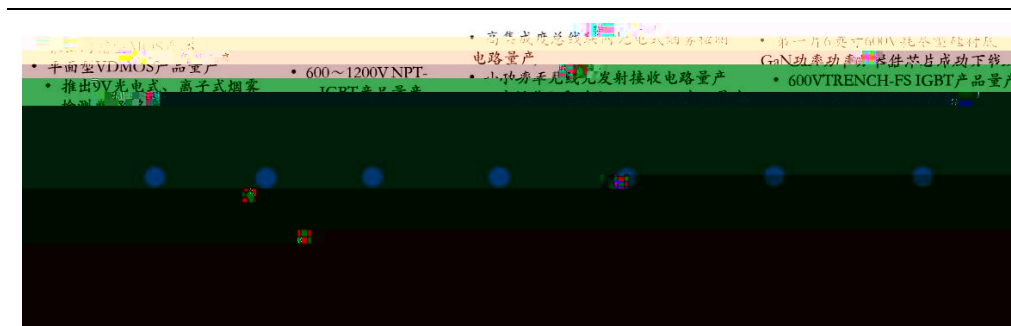
MOSFET

MEMS MCU

23

RMB	2018	2020
MOSFET	16	220
IGBT	6000	160
IC	2.59	580
	4.81	300

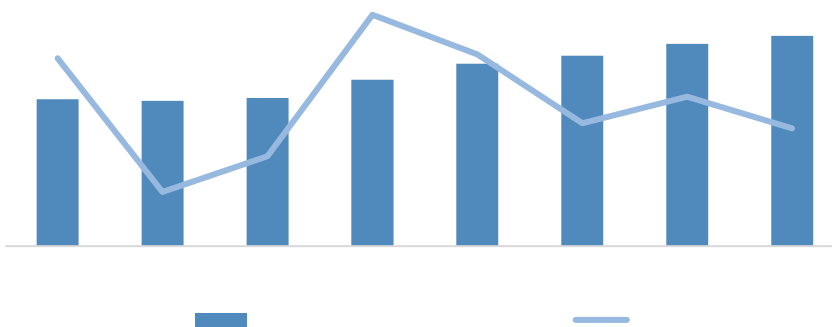
24



2.3.1

MOSFET IGBT IC

25





) MOSFET( ) - IGBT  
MOSFET  
BJT

· CPU\*

27 IGBT

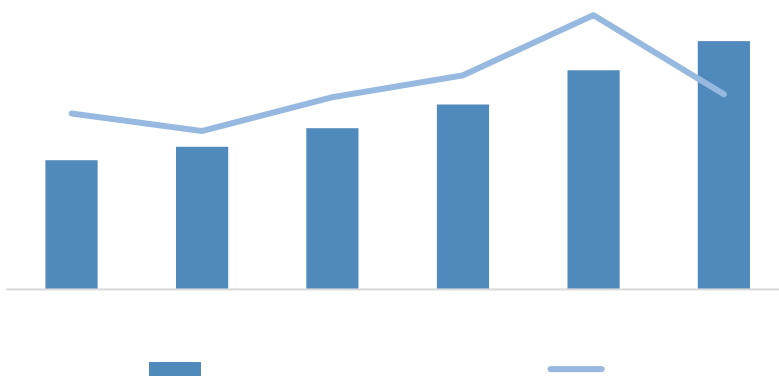
2019 6000 IGBT IPM  
IGBT  
UPS  
IGBT 49.90%

IGBT 2020 4 22

2019 11

IGBT

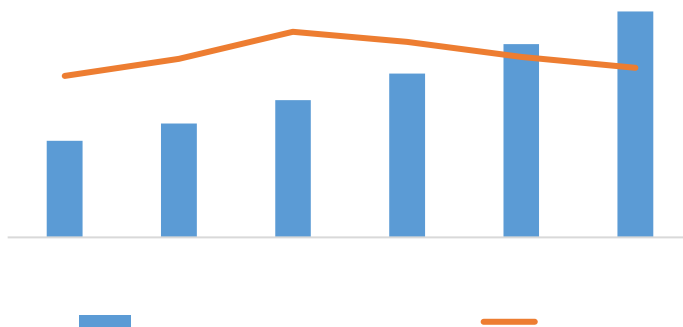
28 2017-2022 MEMS



Yole

MEMS 2018 MEMS 60% 523  
 19.5% 2018-2020 MEMS 17.41%

29 2015-2020 MEMS



MEMS

ESD

MEMS

UL

30

en-US

32 2013-2017 MCU

IHS

MCU

MCU

MCU

33

	MCU	PC	MCU	MCU
	MCU		MCU	MCU
	MCU	16	32	CPU

2018 9900 MCU 3.7%

OTP MTP Flash CMOS

4

8 16 32 CPU

IC MOSFET IGBT  
FRD

MCU



2.4

2018

27%

2.4.2

12

2018  
90nm

12

12

IPO

8

8

MEMS

8

23

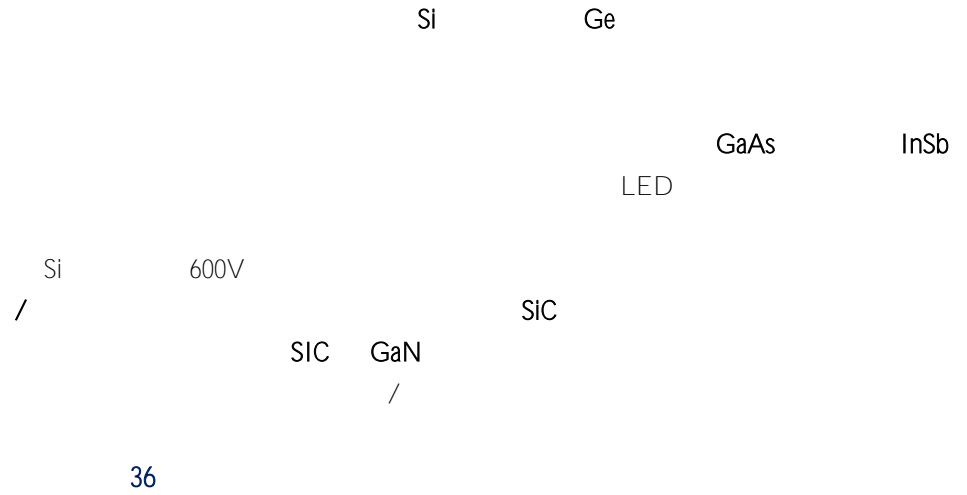
8

35



3

3.1



SiC/GaN

SiC      GaN

5G

IHS

5-10

SiC

40%

IHSMarkit

2018

3.9

2027

37 SIC

IHS

GaN	2017-2023	22%	Yole
2017	4	2023	13
22%			80%
	2018-2025	8%	GaN

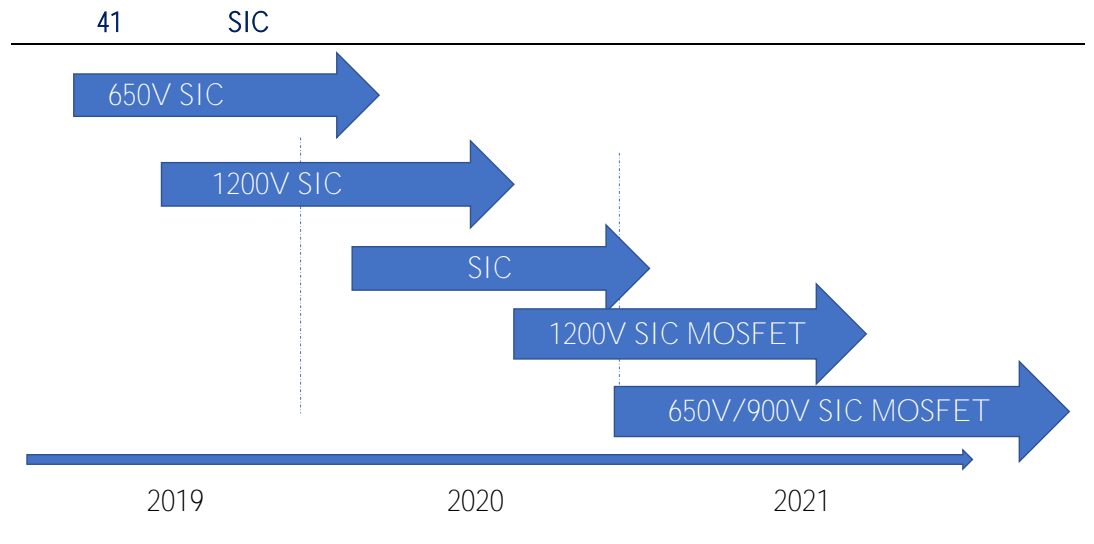
SIC/GaN

3.2 IDM

IDM

BCD MEMS





## 4

### 4.1

1					
2					
8			26%/21%/24%		
3					
35%-40%					
		2020/2021/2022		67.4 /76.3 /85.9	
	9.8 /10.9 /12.9		680	69X/62X/52X	" "

42

	2016	2017	2018	2019	2020E	2021E	2022E
1	3032	3520	3572	3184	3485	3634	3600
1-1	2188	2563	2674	2320	2552	2654	2601
1-2	729	820	786	755	815	856	873
1-3	114	136	112	109	118	124	126
2	<b>1332</b>	<b>2339</b>	<b>2683</b>	<b>2516</b>	<b>3208</b>	<b>3941</b>	<b>4931</b>
	1081	2069	2419	2245			

44 PB



Wind

			PB	PE	IDM		
		PB	6-8		PE	PE	60-
80	PE	PB			PE		
				PB			
							CIS
PMIC	MOSFET						
							+



