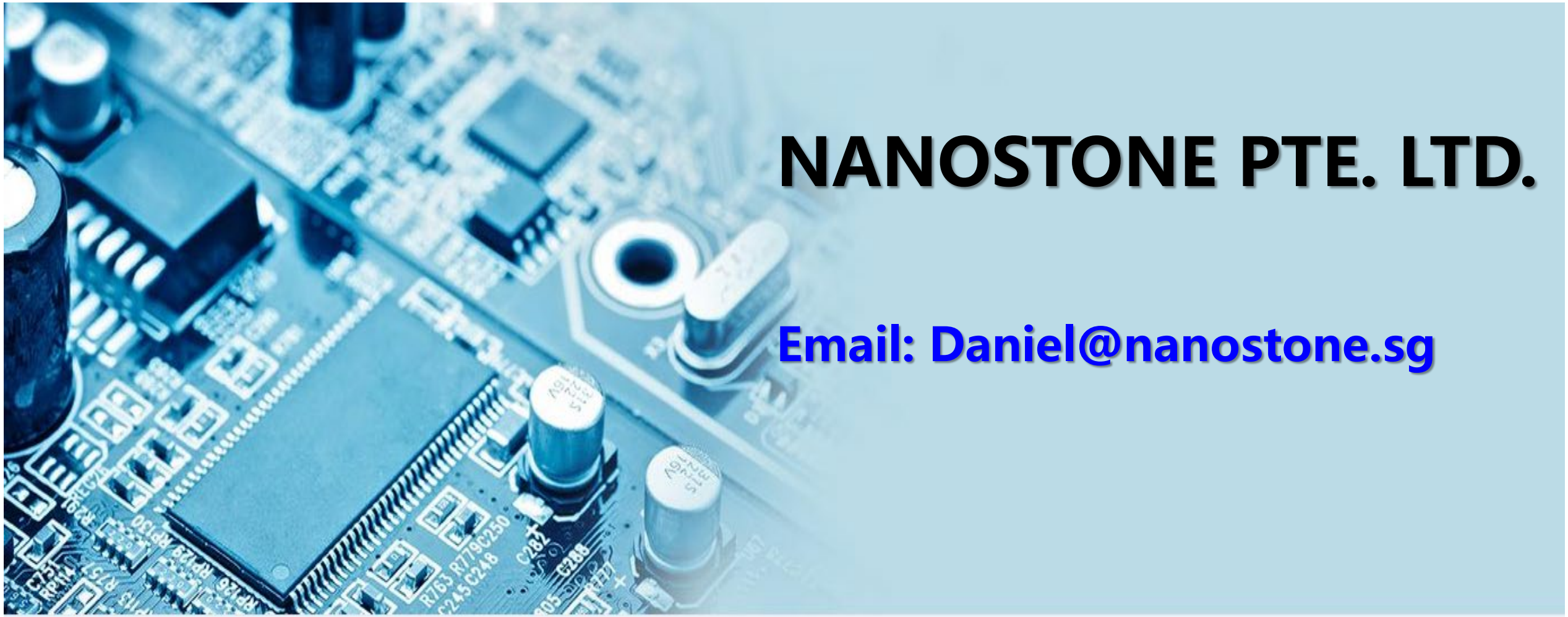


NANOSTONE PTE. LTD.

Email: Daniel@nanostone.sg

Focusing on power semiconductor import substitution

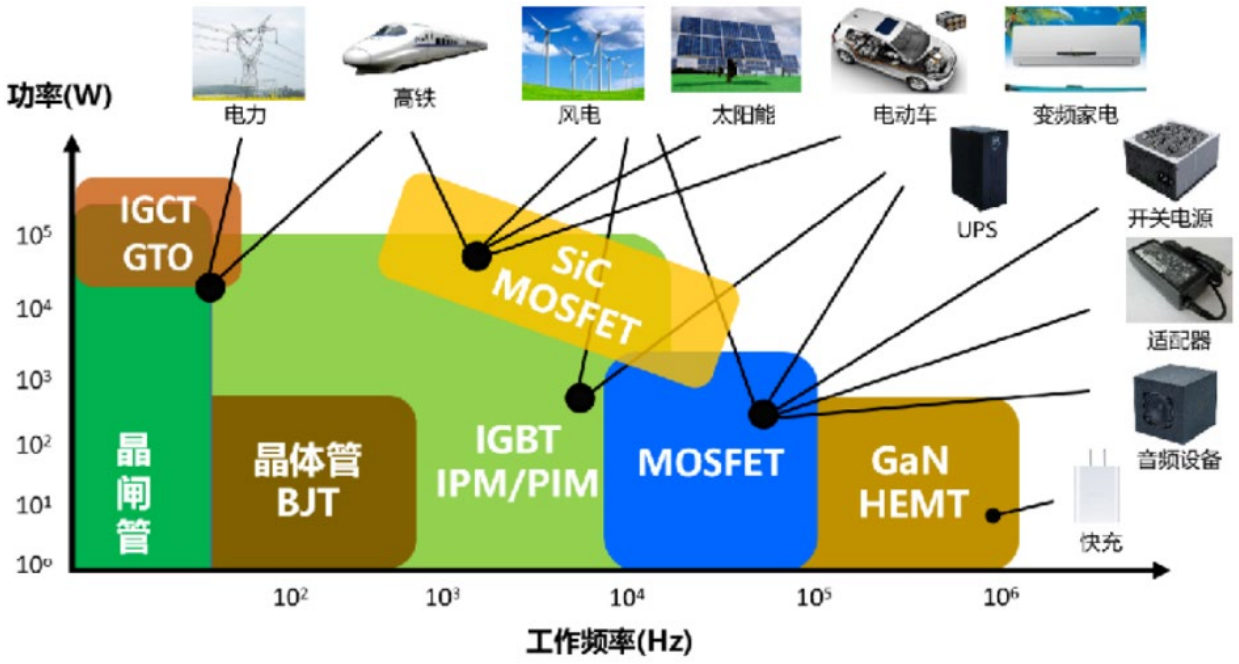
Technical Quality Service

Company Overview

We are a high-tech enterprise specializing in the research and development, design, and sales of power semiconductor devices, focusing on the import substitution of power semiconductor devices. The company currently has over 30 intellectual property rights, including inventions, utility models, integrated circuit layout designs, trademarks, etc., and passed ISO quality system certification in November 2021. The company's over 500 product models are widely used in industries, new energy, home appliances, and other fields, receiving unanimous praise from customers.

The core members of the company are all from leading semiconductor companies in the industry, with senior industry background and experience in product research and development, market application, supply chain and quality management. Many products developed by core team members have been widely adopted by several international major clients.

Headquarters: High tech Zone, Hefei City, Anhui Province
R&D Center: Shanghai Zhangjiang High tech
Business Division: Shenzhen Office (Xili University City)
Global sales office: Singapore



The main characteristics and application scenarios of power semiconductors

Company History

Our Vision: Create excellent power semiconductor products and services!

2017 — Shanghai R&D was established

- Established in October 2017 at Zhangjiang High Tech
- Starting to gradually launch a series of medium and low voltage, medium and small power, and high reliability MOSFET

2020 — We were established

- Established in June 2020 in Hefei High tech Zone
- Continuously launching a series of SGT products
- The product has been applied in bulk by several major customers

2022 — Starting transformation and upgrading

- Seize the opportunity of loose upstream production capacity
- Research and development of high-power SGT, SJ, SiC
- Plan the direction of vehicle grade products

2023 — R&D and market acceleration

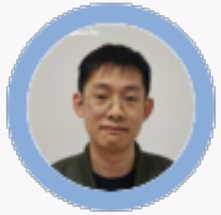
- Accelerated research and development of power products in the company
- Vehicle grade SGT and SiC products invested in research and development
- Received angel round financing in November 2023

Core Team Members

Gao Panpan/kevin

Founder/Executive Director/General Manager

- 2002/09-2009/04 Hefei University of Technology
  Bachelor's and Master's degrees
- 2009/05-2014/07 Previously worked at JCET, CSMC, and Well Semiconductor
  Mainly engaged in research and development work related to chip technology and design
  Participated in and responsible for multiple important domestic and international client projects
- 2014/08-2017/09 Shanghai Greenpower Electronic CO.,LTD: Co founder, Executive Director, General Manager
- 2017/10 to present Founder and responsible for Siliup Semiconductor
- Proficient in power semiconductor device design, process, market, and application
- Having rich industry experience and network resources



Qin yuan

Co founder/Deputy General Manager of Research and Development

- 2007/09-2014/05 University of Shanghai for Science and Technology
  Bachelor's and Master's degrees
- 2014-2016 Previously worked at SMIC Shanghai, engaged in chip technology research and development
- 2017-2020 Previously worked at Shanghai Huahong Semiconductor, engaged in chip technology research and development
- 2021/03 Joined as a partner at Siliup Semiconductor Company responsible for device research and development related work

Technical Advisor

- East China Normal University Bachelor's degree in Microelectronics
- Shanghai Jiao Tong University Master's degree in Microelectronics
- More than 10 years of research and development experience in leading domestic wafer foundries
- Proficient in power semiconductor devices and process technolog
- Plan to join the company after the completion of the Pre-A round of financing and plan to serve as the Deputy General Manager of Process Research and Development

Major Team Members

Hu yonghua

Doctoral degree, strategic advisor

- 1991/09-2001/07 Hefei University of Technology Bachelor's, Master's, and Doctoral degrees
- 2002/04-20012/06 Previously worked at Hefei University of Technology, STMicroelectronics, Britesemi, etc
- 2012/07 to present Founder and responsible for ChipMotion Microelectronics
- Domestic leading experience in the analog-to-digital hybrid integrated circuit industry
- Multiple provincial-level scientific and technological achievements and major patent implementers

Zhang zaijing

Business Director

- 2012-2016 Hefei University of Technology Bachelor degree
- 2016-2018 EAST Hardware development
- 2018-2019 Shenzhen Sekorm Advanced Technologies Chip agent distribution
- 2019-2022 DWIN Chip agent distribution
- 2022-2023 Yuzhong Electronics Partners, agents, and distributors
- 2023/12 Joined Siliup as the Business Director responsible for business operations in the South China region

Wang yulin

Market Application Supervisor

- 2015/09-2022/06 Anhui Polytechnic University Bachelor degree
- 2018/07-2021/06 Tongfu Microelectronics Engaged in chip testing and application work
- 2021/07 Joined Siliup as a product engineer, market application engineer/supervisor, responsible for market application work and assisting in business promotion in the East China region

Wang chunyun

Operation supervisor

- 2014/09-2018/05 Wanjiang College of Anhui Normal University Bachelor degree
- 2018/07-2019/05 Essence Securities
- 2019/05-2020/08 Anhui Meidu Lighting
- 2020/09 Joined Siliup as Operations Specialist and Operations Supervisor, responsible for the company's supply chain management work

Liu bo

Solution and Application Technology Consultant

- 2002/09-2010/04 Hefei University of Technology Bachelor's and Master's degrees
- 2008/09-2009/12 Shanghai OTEC Hardware engineer and head of hardware department
- 2012/10 to present MICSVIEW Hardware Manager and Director
- Domestic leading high-end power supply technology and industry experience

Chang nanying

Sealing and testing R&D supervisor

- 2012/09-2016/06 Anhui Science And Technology University Bachelor degree
- 2016-2018 DARWIN Engineer
- 2018-2020 Tongfu Microelectronics Engineer
- 2020-2023 Hefei Simai Engineer
- 2023/10 Joined Siliup and was responsible for packaging, testing, and research and development work

Chen zhipeng

Device R&D Engineer

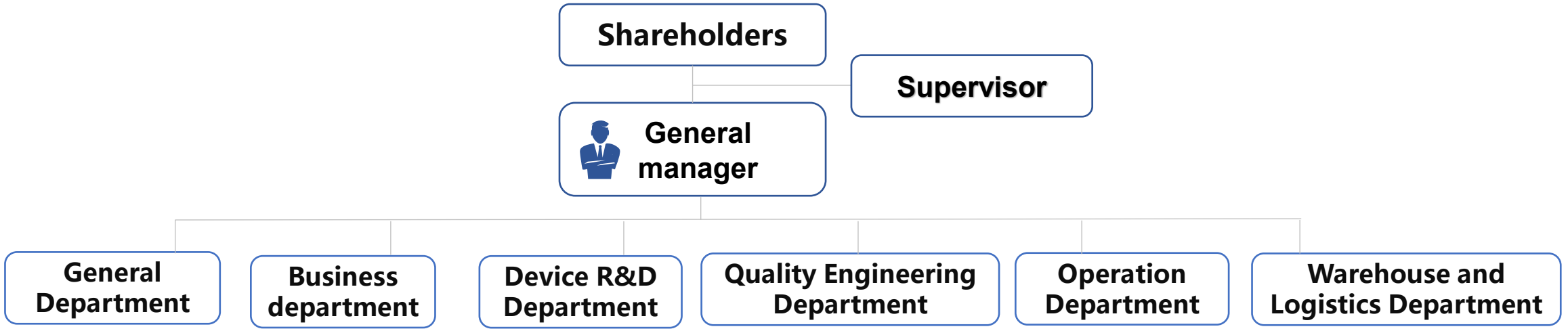
- 2015/09-2022/06 Anhui Polytechnic University Bachelor's and Master's degrees
- 2022/06-2023/10 MCC Engaged in chip technology research and development work
- 2023/10 Joined Siliup and responsible for the research and development of power devices

Yu zhaoming

Comprehensive department supervisor

- 2017/09-2021/07 College of Information Engineering,Fuyang Normal University Bachelor degree
- 2021/05-2023/05 Anhui Wanyou Automobile
- 2023/6 Joined Siliup and served as a financial administrative specialist and head of the comprehensive department, responsible for the company's finance, personnel, and administrative work

Organization Structure



60 people

Total number of team members

60 %

The proportion of technical personnel

10 year+

Industry experience of core members

Market Positioning

Consumer electronics and home appliances

Electronic cigarettes

Sound

Household appliances

New Energy Resources

Household energy storage

Industrial and commercial energy storage

electric bicycle

Electric tricycles and logistics vehicles

A0/A00 low-speed vehicle

Industrial applications

Industrial heat dissipation

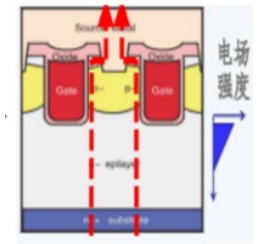
Electric tools

UPS, module power supply

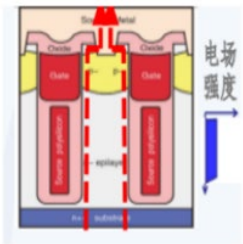
Battery formation and capacity division

Automotive electronics, charging stations

Products & Technology Roadmap



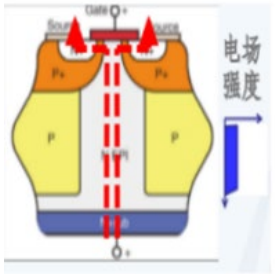
沟槽型（Trench） MOSFET
12-250V；低压（高频）



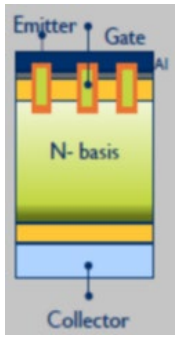
屏蔽栅(SGT) MOSFET
30-300V；中低压（高频）

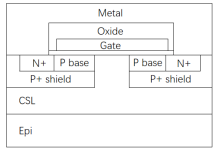
- Trench MOSFET devices are the main focus
- SGT, SJ, and IGBT have technical reserves
- Consumer electronics and industrial application markets

2018 - 2022

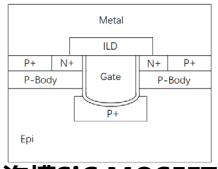


超级结 MOSFET
500-900V；高压（高频）





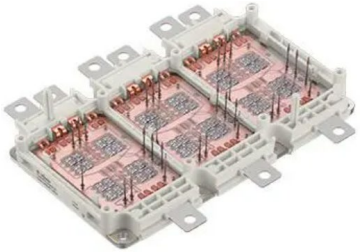
平面SiC MOSFET

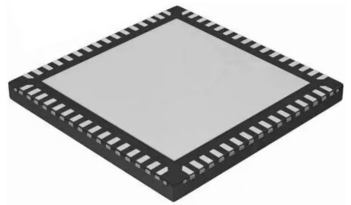


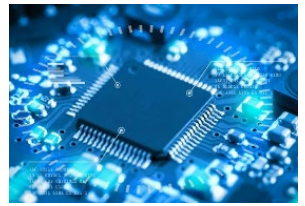
沟槽SiC MOSFET

- SGT, SJ, IGBT/SiC single tube and module
- The product fully meets industrial and automotive grade standards
- Some products can meet military and aerospace level standards

2023 – 2025





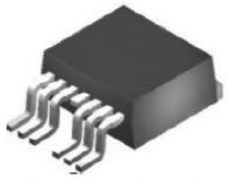


- IGBT, SiC ultra high power modules
- MOSFET power module, module power supply
- Vehicle grade analog IC and mixed digital analog integrated circuit
- Vehicle grade, military grade/aerospace grade standards

2026 – Prospect

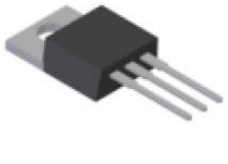
Packages


TOLL


TO-263-7L

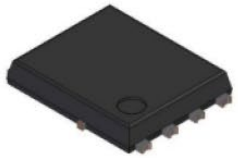

TO-263-3L

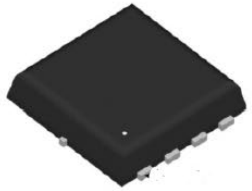

TO-247

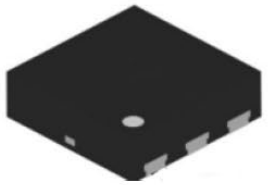

TO-220


TO-220F


TO-252


PDFN5x6


PDFN3x3


DFN2×2

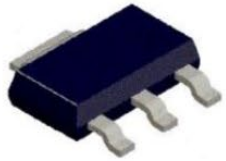

SOP-8L


TSSOP-8L


SOT-23-6L


SOT-23-3L


SOT-23


SOT-223


SOT-89-3L


SOT-323


SOT-523


SOT-723


SOT-363


SOT-563


DFN1212-3L


DFN1006-3L

Technology Advantage

Our SGT technology is at the leading level in China, and SJ and SiC technologies are gradually being released

30V SGT, PDFN3X3 Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands A	Competitor models 1	6.7	12	80.4
Competitive brands B	Competitor models 2	6.3	13.1	82.53
Siliup	Model 1	6	7.1	42.6

40V SGT, PDFN5X6 Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands C	Competitor models 3	0.85	137	116.45
Competitive brands D	Competitor models 4	0.75	89	66.75
Siliup	Model 2	0.75	98	73.5

85V SGT, TO-263 Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands C	Competitor models 5	2.2	142	312.4
Competitive brands E	Competitor models 6	1.8	217	390.6
Siliup	Model 3	1.9	143	271.7

100V SGT, TOLL Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands D	Competitor models 7	2.2	160.5	353.1
Competitive brands E	Competitor models 8	2	169	338
Siliup	Model 4	2	158	316

200V SGT, TO-247 Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands F	Competitor models 9	8.7	56	487.2
Competitive brands G	Competitor models 10	9.6	65	624
Siliup	Model 5	9	48	432

250V SGT, TO-247 Package				
Competitors and models/comparison dimensions		Typical values of conducting resistance Rdson(mΩ)	Typical value of gate charge Qg(nC)	FOM typical value Rdson*Qg(mΩ*nC)
Brand	Model			
Competitive brands C	Competitor models 11	16	76.7	1227.2
Competitive brands G	Competitor models 12	14.5	180	2610
Siliup	Model 6	18	70	1260

Important Products

● SGT MOSFET

Product	Process	Voltage Unit: V	Id Unit: A	Vgs(th) Unit: V	Ron Typ. Vgs=10V Unit: mR	Ron Typ. Vgs=4.5V Unit: mR	Package	Status
SP30N01BGNK	SGT	30	120	1.5	1.2	1.6	PDFN5X6	MP
SP40N01AGNP	SGT	40	200	1.6	0.75	1.2	PDFN5X6-8L(Clip)	MP
SP40N01AGTO	SGT	40	350	1.8	0.65	1	TOLL	MP
SP40N01GTO/GHTO	SGT	40	230	1.8/3	1	1.6	TOLL	MP
SP010N02AGHTO	SGT	100	340	2.6	1.3		TOLL	MP
SP010N02GHTD	SGT	100	270	2.7	1.9		TO-263	MP
SP010N03AGH	SGT	100	180	3	2.8		TO-263、TO-220	MP
SP012N03BGH	SGT	120	140	3.1	3.2		TOLL、TO-263	MP
SP015N03BGH	SGT	150	260	3	3		TOLL、TO-247	MP
SP020N09GH	SGT	200	90	3	9		TO-263、TO-247	MP
SP025N18GH	SGT	250	60	3.5	18		TO-220、TO-247	MP

Important Products

● SJ MOS

Type	Product	Process	FRD	Voltage Unit: V	Id Unit: A	Vgs(th) Unit: V	Ron Typ. Vgs=10V Unit: mR	Package	Status
SJ MOS	SP11M65TG	Multi-Epi	N	650	11	3	340	TO-220F	PVT
SJ MOS	SP20MF65TF	Multi-Epi	Y	650	20	4	150	TO-247-3L	PVT
SJ MOS	SP47MF65TF	Multi-Epi	Y	650	47	4	65	TO-247-3L	PVT
SJ MOS	SP47M65TF	Multi-Epi	N	650	47	3	65	TO-247-3L	PVT
SJ MOS	SP77MF65TF	Multi-Epi	Y	650	77	4	35	TO-247-3L	PVT
SJ MOS	SP4H70TF	Deep-Trench	N	700	4	3.5	720	TO-247-3L	24’ Q2
SJ MOS	SP11M80TF	Multi-Epi	N	800	11	3	480	TO-247-3L	24’ Q2
SJ MOS	SP15M80TF	Multi-Epi	N	800	15	3	340	TO-247-3L	24’ Q2

Important Products

● SiC MOS

Product	VDS(V)	ID (A) Tc=100℃	Vth (V)	V_{GSMAX} (V)	V_{GSop}(V)	Rdson_Typ (mR) TC=25℃	Package	Status
SP90N120C	1200	90	2.4	-10/+22	-5/+18	15	TO-247-3L/4L	Industrial Grade 24’ Q1
SP55N120C	1200	55	2.5	-10/+22	-5/+18	32	TO-247-3L/4L	Industrial Grade 24’ Q2
SP50N120C	1200	50	2.5	-8/+22	-4/+18	35	TO-247-3L/4L	Industrial Grade MP
SP25N120C	1200	25	2.7	-8/+22	-4/+18	60	TO-247-3L	Industrial Grade MP
SP20N120C	1200	20	2.7	-10/+22	-5/+18	80	TO-247-3L/4L	Industrial Grade 24’ Q2
SP10N120C	1200	10	2.7	-10/+22	-5/+18	150	TO-247-3L	Industrial Grade 24’ Q2
SP100N75C	750	100	2.6	-10/+22	-5/+18	12	TO-247-4L	DVT
SP40N75C	750	40	2.6	-10/+22	-5/+18	45	TO-247-4L	DVT

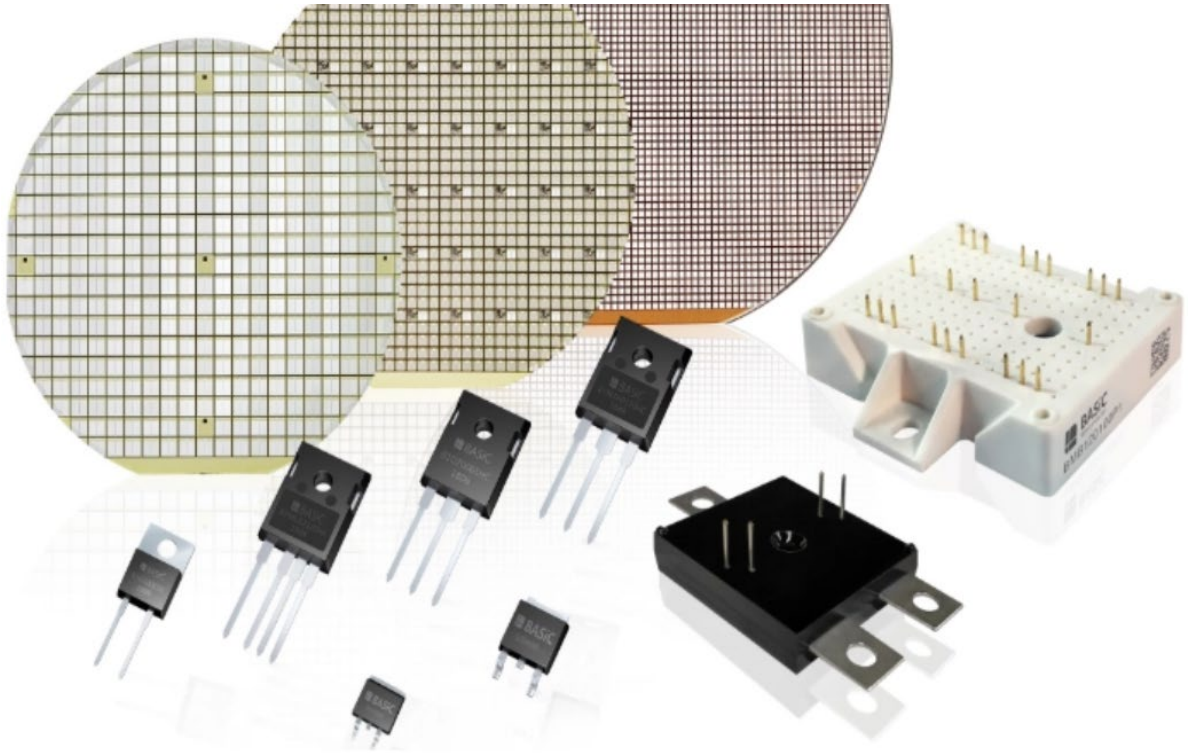
Important Products

● SiC SBD

Product	VDS(V)	IF Tc=160℃	VF (V)	Package	Status
SP40D120C	1200	40	1.45	TO-247-2L	Industrial Grade 24’ Q2
SP30D120C	1200	30	1.4	TO-247-2L/3L	Industrial Grade 24’ Q3
SP20D120C	1200	20	1.45	TO-247-2L	Industrial Grade MP
SP15D120C	1200	15	1.45	TO-247-2L、TO-220	Industrial Grade MP
SP10D120C	1200	10	1.4	TO-247-2L/3L、TO-220、TO-263	Industrial Grade 24’ Q3
SP8D120C	1200	8	1.4	TO-247-2L、TO-220、TO-263、TO-252	Industrial Grade 24’ Q3
SP5D120C	1200	5	1.4	TO-247-2L、TO-220、TO-263、TO-252	Industrial Grade 24’ Q3

Supply Chain Partners

Leading technology and first-class quality are important guarantees for domestic substitution!



Nexchip

JCET

YASC
DRIVE FOR EXCELLENCE

HGrace 華虹宏力

Main Terminal Customers

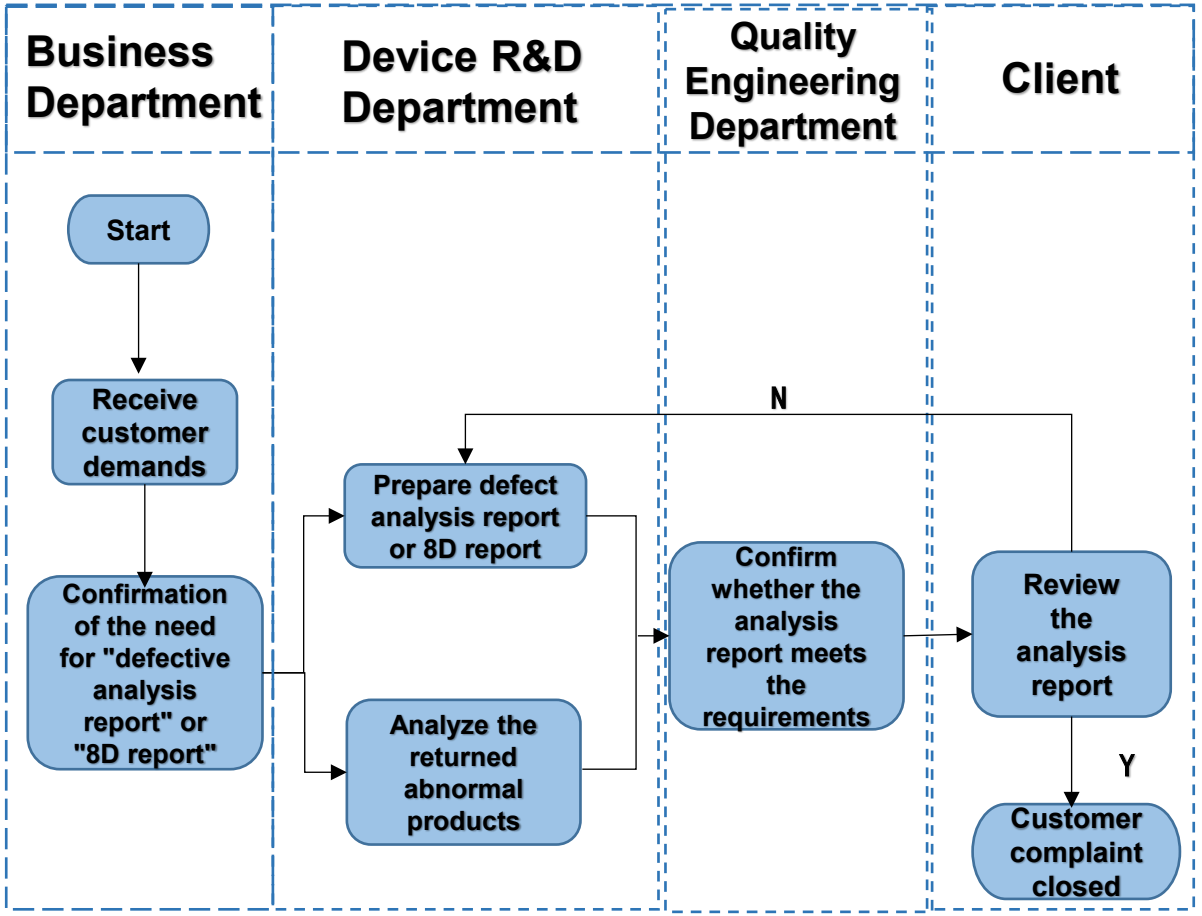
	Consumer electronics and home appliances	Industrial applications	New Energy Resources	Automotive Electronics
Successfully imported	harman/kardon by HARMAN, OKIN REFINED, Firstunion, TIANAN	Hymson, 华夏恒泰 HUA XIA HENG TAI, SNOWFAN	BoltPower 电将军, 欧乐亚, DEK 迪比科, 索德诺	harman/kardon by HARMAN, 佑驾创新
Promoting	RELX, 瑞德智能 REAL-DESIGN INTELLIGENCE, SMOORE 思摩尔, Shark	AVC, ZOONO 智佳能, 精·捷·能, XL, HYNN 恒翼能 HYNN TECHNOLOGY	国创新能, INONE, UDAN 优旦, JDI 行一技术, Enerlution, 维德电源 WEIDE POWER	CSG, 银轮股份 YINLUN CO.,LTD, 金彭, CHANGHUI 昌辉股份
Target customers	Midea 美的, Haier, CVTE 视源股份, GREE	Nidec 尼得科 日本电产株式会社, CHR 杭可科技, 泰坦新动力 Titans New Power, DELTA 台达, RePower 瑞能, MEGMEET, NEWARE	阳光电源 SUNGROW, 国轩高科 GOTION HIGH-TECH, 锦浪科技 GINLONG, hoymiles, Deye 德业, LIGOO 力高技术	BYD, CHERY, CATL 宁德时代

Quality Control

Domestic customers can respond within three hours and arrive at the site within twelve hours!

Siliup Semiconductor

product design	Follow DFEMA guidelines
Process development	Follow PFEMA guidelines
Wafer Packaging test	• Select high-quality raw materials • Strictly follow the process control measures
Warehousing logistics	• Adopt domestic leading logistics suppliers • Perfect IQC and OQC inspection standards • Regular and irregular inventory counting and spot check mechanism
Customer Delivery	The business personnel closely track the client

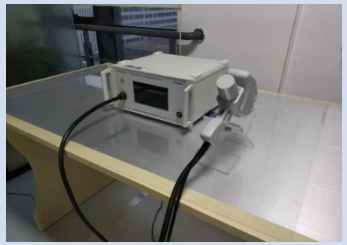


Strive to improve the quality control mode with full coverage

Our customer complaint handling process

Test And Analysis

The third-party testing agency we cooperate with

Test items	purpose	Equipment drawing	Analysis items	purpose	Equipment drawing
Integrated circuit test system	Product related DC parameter test		X-ray detection (X-ray)	Non destructive inspection, which can detect welding defects and packaging related defects	
Electrostatic generator	Product ESD test		Ultrasonic scanning (SAT)	Non destructive inspection, which can detect various defects (cracks, delaminations, cavities, etc.)	
High temperature test chamber	Used for high temperature reliability test (HTSL+HTRB+HTGB)		Chemical capping (Decap)	Destructive inspection, corrosion of the shell and exposure of the internal chip, visual inspection or subsequent analysis	

Our seal testing suppliers and third-party testing institutions have professional equipment and teams, which can provide more and better testing and analysis services!