

SiC Substrate

- Mechanical and laser cutting
- Advanced physical and chemical polishing
- 8-inch wafers start in 2024

SiC Epitaxy

- Large-scale MOCVD reactors
- Self-developed low defect growth technology

Vertically Integrated Mega Fab

- Phase I Completed, ramping to 200k wfr/yr(150mm)
- Phase II takes up 6,670,000 m² (1,650 Acres) in total
- Total investment: 2.3 billion USD (16 billion CNY)

SiC Crystal Growth

- In-house SiC powder composition
- Self-develop PVT

SiC Device Fab

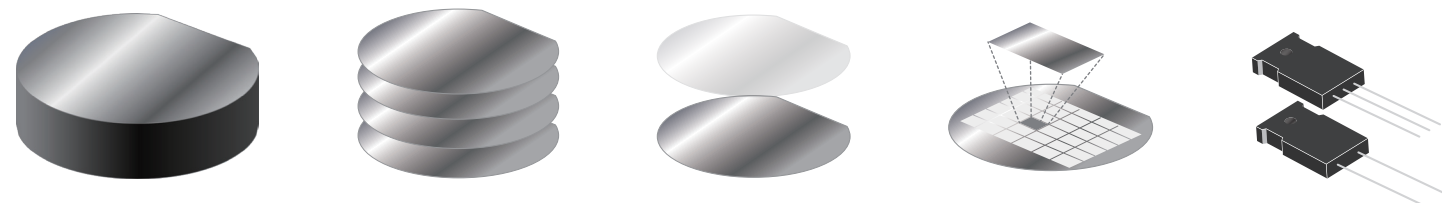
- State-of-the-art tools and metrology
- CMOS FAB with all SiC process

SiC Package Assembly & Test

- Leading packaging technology
- Automotive qualification

About Sanan Semiconductor

Sanan Semiconductor was founded in July 2020 and is located in Changsha High-tech Development Zone, creating a vertically integrated industrial chain of silicon carbide for mass production, covering silicon carbide crystal growth, substrate, epitaxy, chip, packaging and testing services. The company has passed ISO9001, IATF16949, QC080000, ISO14001, ISO45001, ISO27001, ISO22301, ANSI/ESD S 20.20, SA8000 certification, and introduced VDA6.3 process audit. In addition, silicon carbide diode products have obtained AEC-Q101 qualified.



Why Sanan Semiconductor

More Focused

Focus on R&D and mass manufacturing of SiC and GaN power semiconductor products.

Vertical Integration

Complete vertical integration of the whole industry chain from material to packaging, and all-around control over production capacity, cost and quality verification.

Large-scale

The planned production capacity ranks first in the world. Through large-scale manufacturing, the cost of components is reduced, and the industrialization of SiC and GaN power semiconductors is accelerated.

Flexible Solutions

Having catered to over 800 clients globally, the dispatch of silicon carbide chips/devices has surpassed 200 million units. Our business collaboration approach is versatile and varied, contributing to the success of our customers in effectively overseeing their supply chains.

Scan to know more



Website



LinkedIn

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Sanan Semiconductor Silicon Carbide Power Products

SiC Vertical Integration

Fostering the Advancement of the New Energy Sector for a Low-Carbon, Sustainable Future

Sanan Semiconductor is dedicated to expediting the adoption of silicon carbide applications and advocating for a low-carbon lifestyle. Functioning as a vertically integrated silicon carbide manufacturing platform, we offer comprehensive industry chain services, spanning crystal growth, substrate preparation, epitaxial growth, chip processing, and packaging testing. This enables us to exercise complete control over product iteration, quality, and timely delivery. Our portfolio encompasses silicon carbide MOSFETs, diodes, substrate epitaxial materials, module foundry services, and gallium nitride wafer foundry. We extend support to high-reliability applications like new energy vehicles, charging stations, photovoltaic energy storage, communication base stations, data centers, uninterrupted power supplies, industrial automation, household appliances, and consumer electronics.

SiC MOSFET

- Easy to drive
- Low reverse recovery time
- Low $R_{ds(on)}$
- AEC-Q101 qualified
- High reverse blocking capabilities

SiC Materials

- SiC Substrate
- SiC Epitaxy

SiC SBD

- High reliability MPS structure
- Thinner wafer platform
- Zero reverse recovery
- AEC-Q101 qualified
- Low forward V_f

SiC Power Module

The latest SiC technology and miniaturized packaging technology improve the performance of the module for high efficiency and high power density applications.

SiC SBD

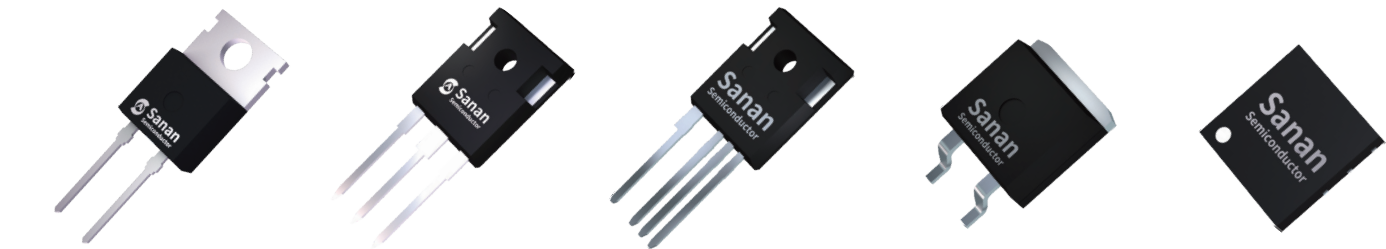
Sanan Semiconductor has a complete series of silicon carbide diode products, including 650V/1A-50A, 1200V/1A-60A and 1700V and other different voltage and current platforms, with a cumulative shipment of 200 million units. Now iterated to the fifth generation, it offers lower forward voltage drop and better heat dissipation, providing customers with higher power density and longer term reliability in their system designs.

- Features
- Applications
- High reliability MPS structure
 - Zero reverse recovery
 - Low forward Vf
 - Thinner wafer platform
 - AEC-Q101 qualified
 - PV inverter
 - Energy storage
 - Server power supply
 - Base station power supply
 - OBC
 - Charging piles
 - DC/DC
 - Home appliance

Product PN	Blocking Voltage	Current Rating	Package
SDS065J002D3	650V	2A	TO252-2L
SDS065J004C3	650V	4A	TO220-2L
SDS065J004C4*	650V	4A	TO220-2L
SDS065J004D3	650V	4A	TO252-2L
SDS065J004D4*	650V	4A	TO252-2L
SDS065J006C3	650V	6A	TO220-2L
SDS065J006D3	650V	6A	TO252-2L
SDS065J006E3	650V	6A	TO263-2L
SDS065J006S3	650V	6A	DFN8*8-4L
SDS065J006C4*	650V	6A	TO220-2L
SDS065J006D4*	650V	6A	TO252-2L
SDS065J006N4*	650V	6A	TO220N-2L
SDS065J008C3	650V	8A	TO220-2L
SDS065J008D3	650V	8A	TO252-2L
SDS065J008D4*	650V	8A	TO252-2L
SDS065J008N3	650V	8A	TO220N-2L
SDS065J008S3	650V	8A	DFN8*8-4L
SDS065J010C3	650V	10A	TO220-2L
SDS065J010C4*	650V	10A	TO220-2L
SDS065J010D3	650V	10A	TO252-2L
SDS065J010E3	650V	10A	TO263-2L
SDS065J010N3	650V	10A	TO220N-2L

Product PN	Blocking Voltage	Current Rating	Package
SDS065J012C3	650V	12A	TO220-2L
SDS065J012S3	650V	12A	DFN8*8-4L
SDS065J016C3	650V	16A	TO220-2L
SDS065J016G3	650V	16A	TO247-3L
SDS065J016H3	650V	16A	TO247-2L
SDS065J020C3	650V	20A	TO220-2L
SDS065J020D3	650V	20A	TO252-2L
SDS065J020G3	650V	20A	TO247-3L
SDS065J020H3	650V	20A	TO247-2L
SDS065J020W3	650V	20A	TO3PF
SDS065J030G3	650V	30A	TO247-3L
SDS065J040G3	650V	40A	TO247-3L
SDS065J040H3*	650V	40A	TO247-2L
SDS065J050H3	650V	50A	TO247-2L
SDS120J002C3	1200V	2A	TO220-2L
SDS120J002D3	1200V	2A	TO252-2L
SDS120J003D3*	1200V	3A	TO252-2L
SDS120J005C3	1200V	5A	TO220-2L
SDS120J005D3	1200V	5A	TO252-2L
SDS120J010C3	1200V	10A	TO220-2L
SDS120J010D3	1200V	10A	TO252-2L
SDS120J010E3	1200V	10A	TO263-2L
SDS120J010G3	1200V	10A	TO247-3L
SDS120J010H3	1200V	10A	TO247-2L
SDS120J010H5*	1200V	10A	TO247-2L
SDS120J015C3	1200V	15A	TO220-2L
SDS120J015H3	1200V	15A	TO247-2L
SDS120J020G3	1200V	20A	TO247-3L
SDS120J020H3	1200V	20A	TO247-2L
SDS120J020H5*	1200V	20A	TO247-2L
SDS120J027H3	1200V	27A	TO247-2L
SDS120J030G3	1200V	30A	TO247-3L
SDS120J030H3	1200V	30A	TO247-2L
SDS120J030H5*	1200V	30A	TO247-2L
SDS120J040G3	1200V	40A	TO247-3L
SDS120J040H3	1200V	40A	TO247-2L
SDS120J040H5*	1200V	40A	TO247-2L
SDS120J050H3	1200V	50A	TO247-2L
SDS120J050H5*	1200V	50A	TO247-2L
SDS120J060G3	1200V	60A	TO247-3L
SDS120J060H3*	1200V	60A	TO247-2L
SDS170J025H5	1700V	25A	TO247-2L

* to be released



SiC Materials

- SiC Substrate
- SiC Epitaxy

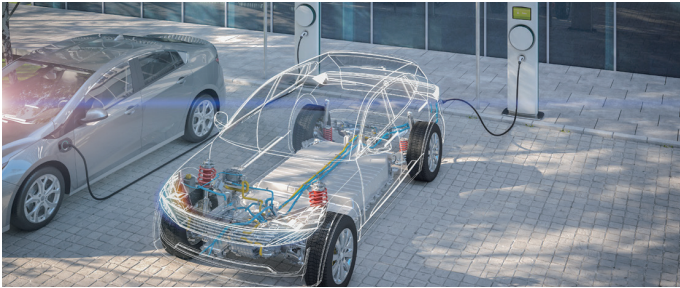
SiC MOSFET

Based on a vertically integrated SiC manufacturing platform, Sanan Semiconductor launched its SiC MOSFET technology for renewable energy systems. This industry leading technology helps customers achieve higher power density, a more compact module design, and an overall lighter weight of the system hardware.

- Features
- Applications
- Easy to drive
 - Low $R_{ds(on)}$
 - High reverse blocking capabilities
 - Low reverse recovery time
 - AEC-Q101 qualified
 - Automotive Drive
 - OBC
 - Charging piles
 - PV inverter
 - Energy storage

SiC Power Module

The latest SiC technology and miniaturized packaging technology improve the performance of the module for high efficiency and high power density applications.



Product PN	Blocking Voltage	Current Rating	Package
ADS16B3*	650V	1A	SMBF
ADS065J016G3	650V	16A	TO247-3L
ADS065J020C3	650V	20A	TO220-2L
ADS065J020E3	650V	20A	TO263-2L
ADS065J020G3	650V	20A	TO247-2L
ADS065J020H3	650V	20A	TO247-3L
ADS065J040G3	650V	40A	TO247-3L
ADS12B3*	1200V	1A	SMBF
ADS120J005D3*	1200V	5A	TO252-2L
ADS120J020C3	1200V	20A	TO220-2L
ADS120J020H3	1200V	20A	TO247-2L

Product PN	Blocking Voltage	$R_{ds(on)}$	Package
SMS0650040M*	650V	40mΩ	TO247-4L
AMS0650060M*	650V	60mΩ	TO247-4L
AMS1200013B*	1200V	13mΩ	baredie
AMS1200016B*	1200V	16mΩ	baredie
SMS1200020M2*	1200V	20mΩ	TO247-4L
SMS1200032M2*	1200V	32mΩ	TO247-4L
AMS1200075K2*	1200V	75mΩ	TO247-3L
AMS1200075M2*	1200V	75mΩ	TO247-4L
SMS1200075M2*	1200V	75mΩ	TO247-4L
SMS1200075P*	1200V	75mΩ	TO263-7L
SMS1200080K	1200V	80mΩ	TO247-3L
SMS1200080M*	1200V	80mΩ	TO247-4L
SMS1701000K	1700V	1000mΩ	TO247-3L

Product PN	Blocking Voltage	Current Rating	Package
SLS065J100A	650V	100A	SOT227
SLS120J060A	1200V	60A	SOT227
SLS120J080A	1200V	80A	SOT227
SLS120J100A	1200V	100A	SOT227

* to be released



* Image source: unsplash.com