



# Company Presentation

[www.bruckewell-semi.com](http://www.bruckewell-semi.com) **2022**

## ADDRESS

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## PHONE

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# Company Description

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Discrete Wafer Design

Own-Brand Device

Exceptional Value

Bruckewell technology Co LTD is a discrete semiconductor design company that have the able to offer KGD wafer-level products to provide silicon and wide bandgap (WBG) power semiconductor devices

We pride ourselves in our expertise in all areas of power semiconductor technology and business operations, our technical team that from Vishay & Infineon contributes over 25 years expertise in power semiconductor.

# LOGO Significance



Bruckewell comes from the German "Brücke" , meaning "bridge" and English "well"

To become synonymous with technical innovation and timely marketing partner

The green leaf symbol reflects taking an active part in health & safety and protecting the environment as our responsibility

# Company History

## 公司沿革

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### Creation of the company

Bruckewell technology corp. registered in Delaware, USA.

Began its business on semiconductor material electronic components in San Jose, California.

*Bruckewell最初註冊登記在美國德拉瓦州, 從材料及元件銷售  
開始進入市場*

2008

### Start Wafer Development Headquarter in Taiwan

Semiconductor division founded in Taiwan for discrete semiconductor wafer design and branded products.

Bruckewell Technology Corp., Ltd. registered in Taiwan  
在台灣登記為雋伶科技以開始銷售自有品牌及設計晶圓

2009

**First Schottky Diode Wafer came by 10A, 100V**

# Company History

## 公司沿革

**Offering the AEC-Q101 (車用認證) Grade wafer**

*Follow the AEC –Q101 standard to design and control the product, customer approved for MOSFET/Diode Products.*

*首批車用認證二極管及場效電晶體產品通過客戶承認,*

**2012**

**Strategy Partner with  
Taiwan GTM**

*合併勤益電子事業部*

*建立可靠度實驗室及封裝技術支持*

**2019**

**Bruckewell has been separated from Elan Group**

**2021**

**Focus on the SiC series products**

*Prater with Foxcoon, Vishay*

*從義隆電子集團獨立出來專注在第三代分離式半導體碳化矽產品開發*

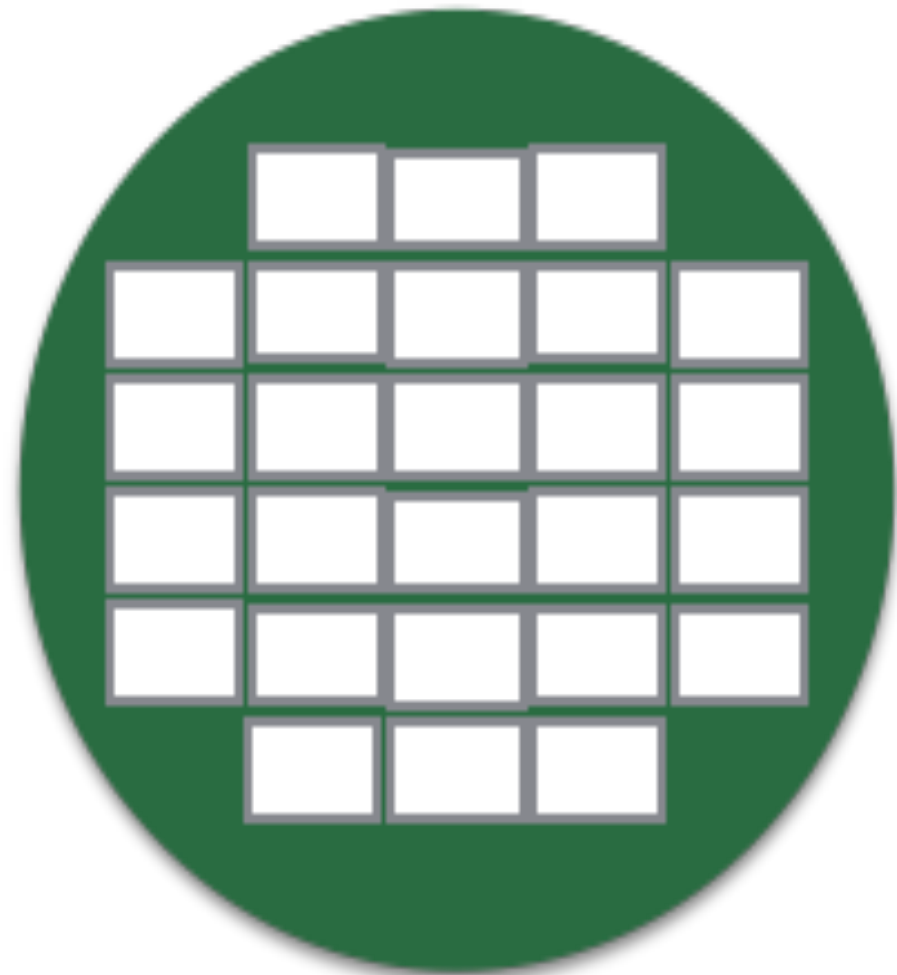
*與鴻海, 威世通用簽訂戰略夥伴*

# Products/Service



# Our Products

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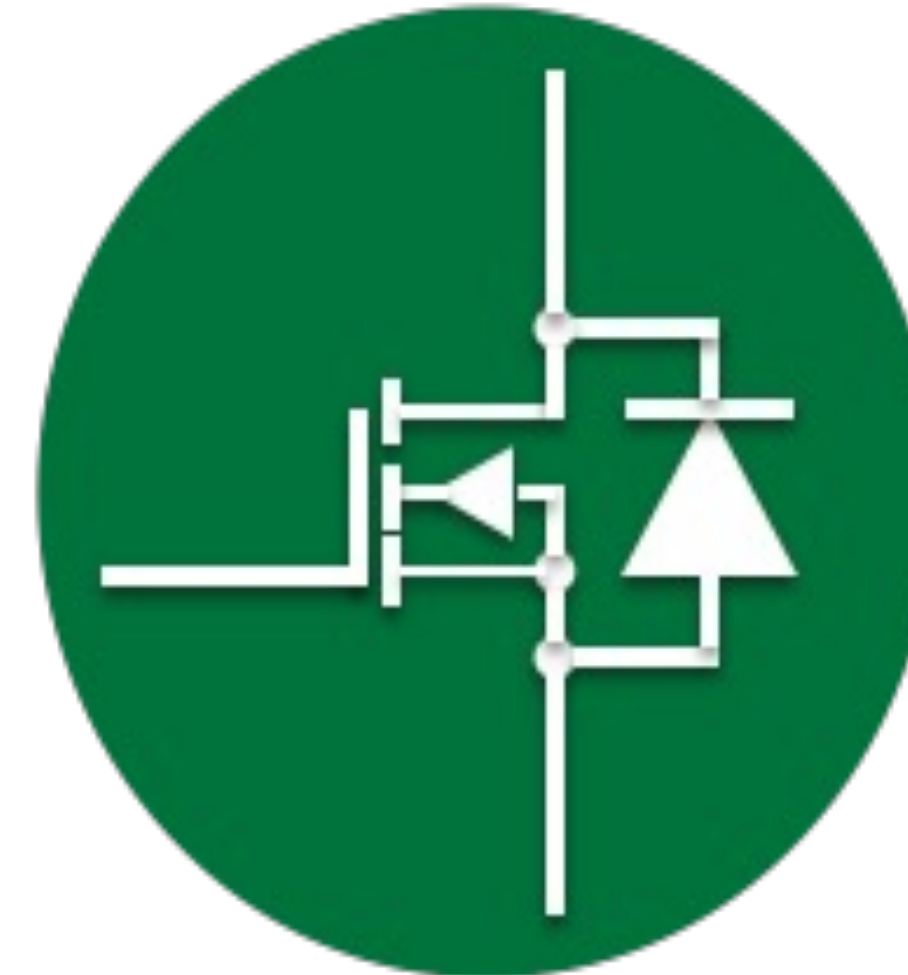
Bare Wafer

Diode  
MOSFET  
TVS/Zener  
IGBT



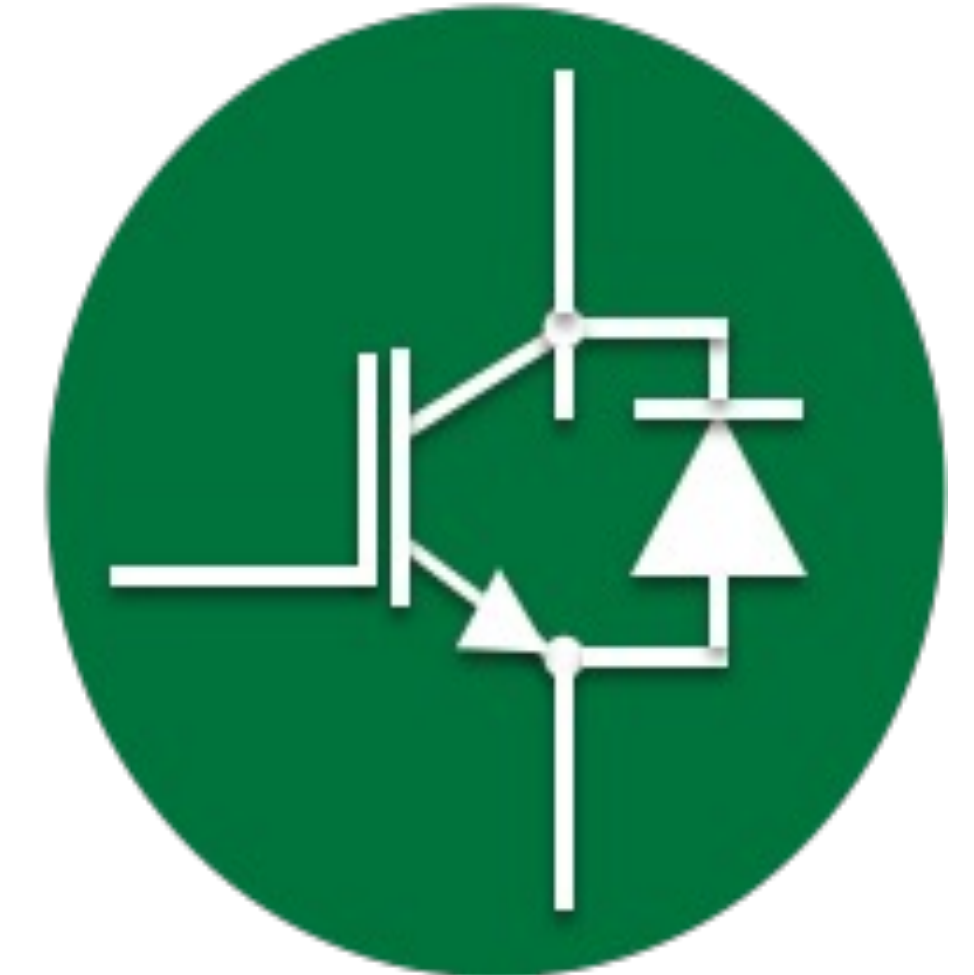
Diode

Standard/ Fast/ Schottky  
TVS/ Zener/ ESD Protector  
SiC Schottky Diode



MOSFET

20-900V N/P MOSFET  
SiC MOSFET  
GaN HEMT



IGBT

650V-1350V  
Field Stop Series

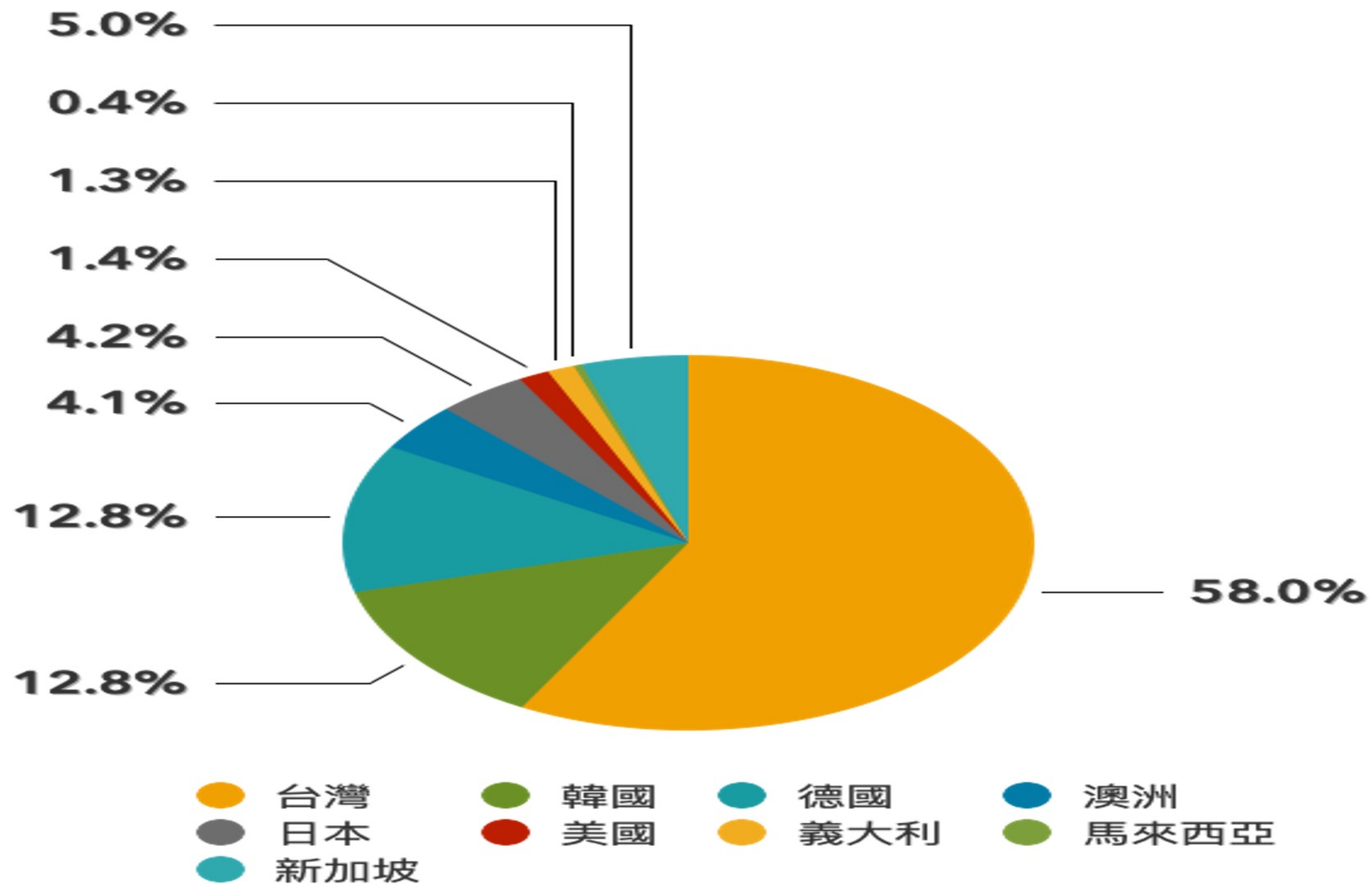


# Regional Distributors Presence

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# Marketing by Countries-2021



# Quality/ Environmental Policy

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Our goal is to exceed the quality expectations of our customers.

It is achieved through innovation, technical excellence and continuous improvement

我們的目標是超越客戶的質量要求。通過創新，技術精益求精，持續改進

Bruckewell commit to work with our customers to offer products that address the environmental concerns of our industry.

RoHS/WEEE/ REACH Compliance

Bruckewell offers lead-free products as defined in the European Union's RoHS Directive 2011/65/EU and are compatible with the current RoHS requirements for all six banned substances.

Bruckewell Devices offers products that support the EU decree 1907/2006.

Independent Analysis –

Bruckewell provides independent laboratory SGS reports



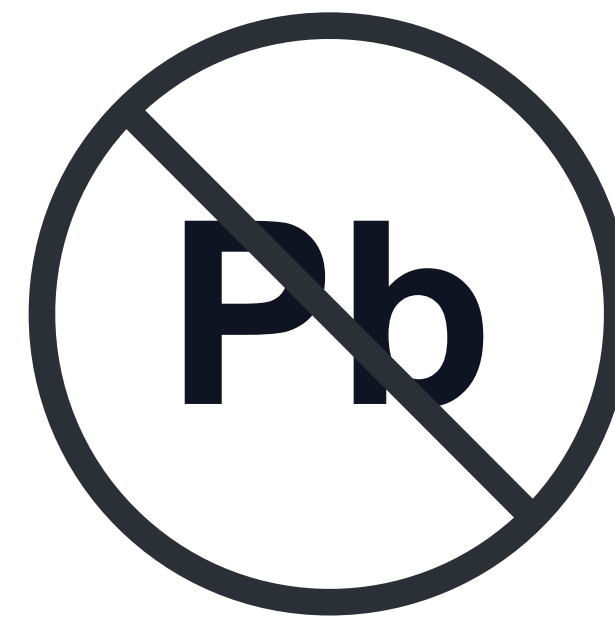


RoHS Compliant



Halogen Free

AEC-Q101 Qualified  
Available

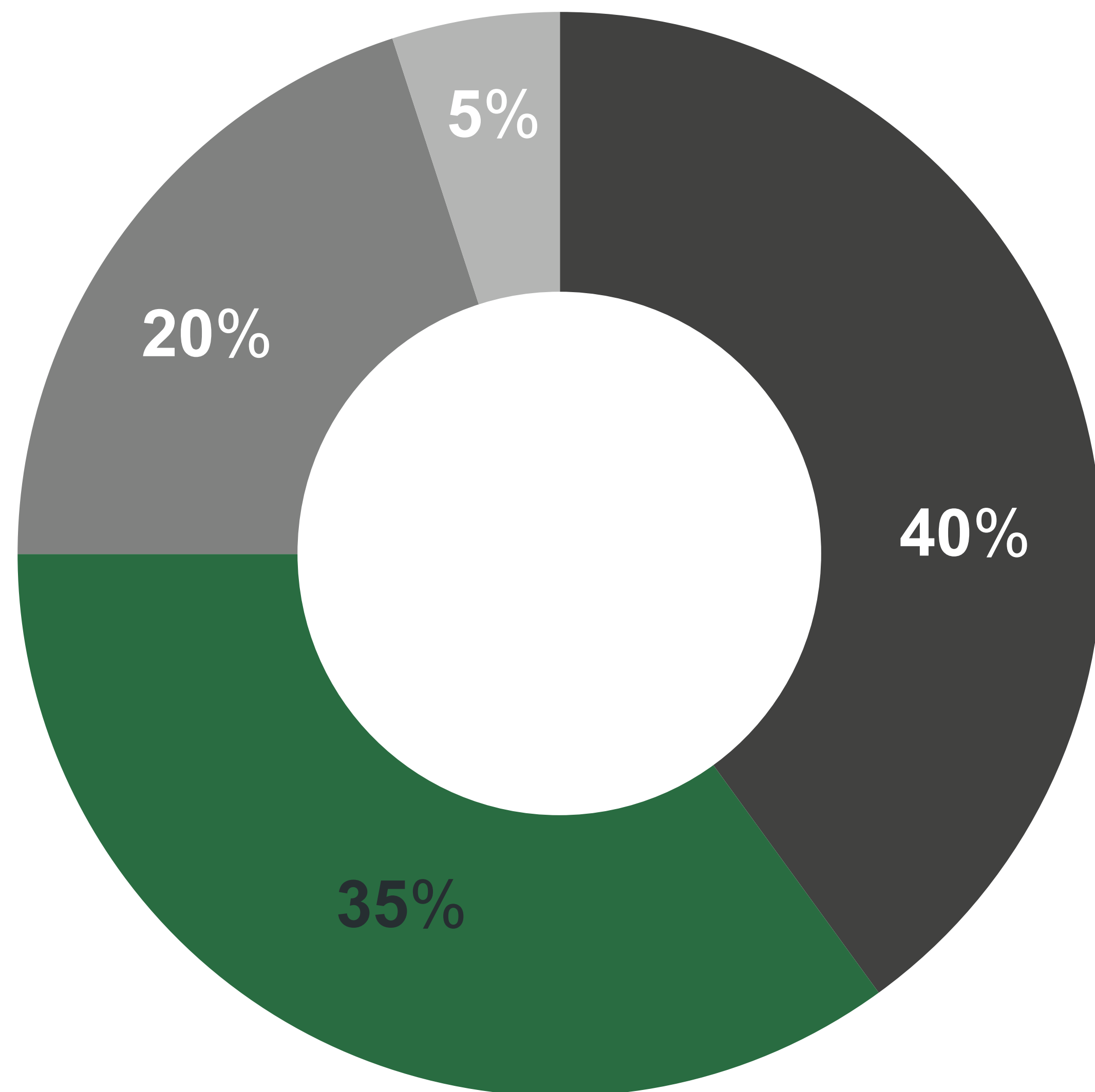


MATERIAL DATA  
SYSTEM

IMDS for Automotive

- ❑ Silicon Carbide Surfaces Area and Optimization Improvement
- ❑ Silicon Silicide Area and Optimization
- ❑ Silicon Power Mosfet Low Voltage Structure, WAVYFET
- ❑ Lateral Passivated Schottky structure
- ❑ Silicon Silicide Area and Optimization—USA
- ❑ PBR Diode\_Wave Diode Structure—TAIWAN, USA
- ❑ SG MOSFET Process Method—TAIWAN, USA

2021



Ultra Low RDS(on) Shield Gate MOSFET  
Technology Platform development bring the  
100V products to service EV application.  
6<sup>th</sup> Field Stop IGBT products Ready  
650V, 1200V SiC JBS Diode Ready

**1** Diodes

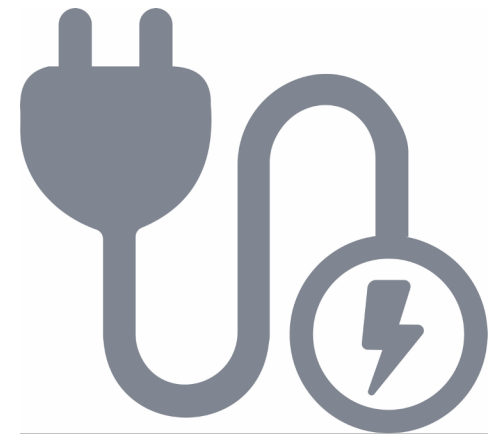
**2** Bare Die/ ODM

**3** MOSFETs

**4** SiC Diode  
GaN-FET  
IGBT

# Sales and Marketing

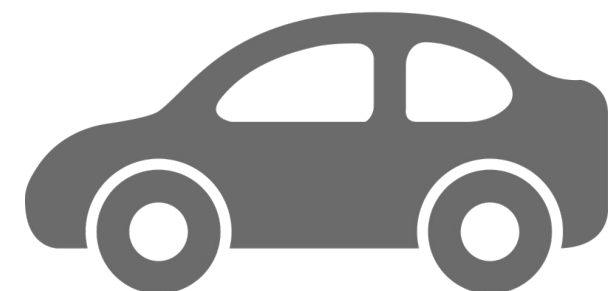
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## Electronics

40%

AC-DC/ DC-DC power supply  
Battery power supply  
Switched-mode power supply  
Home appliance/ multimedia  
LED Lighting



## Automotive

20%

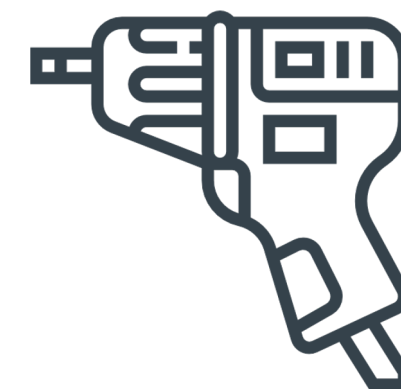
Automotive/ E-Bike  
Car Audio  
Car Headlight



## Communication

25%

PLC, Power Line  
Communication  
ProE, Power over Ethernet  
IP Cam, Internet protocol  
Cameras  
Telecommunication  
Cell Phone

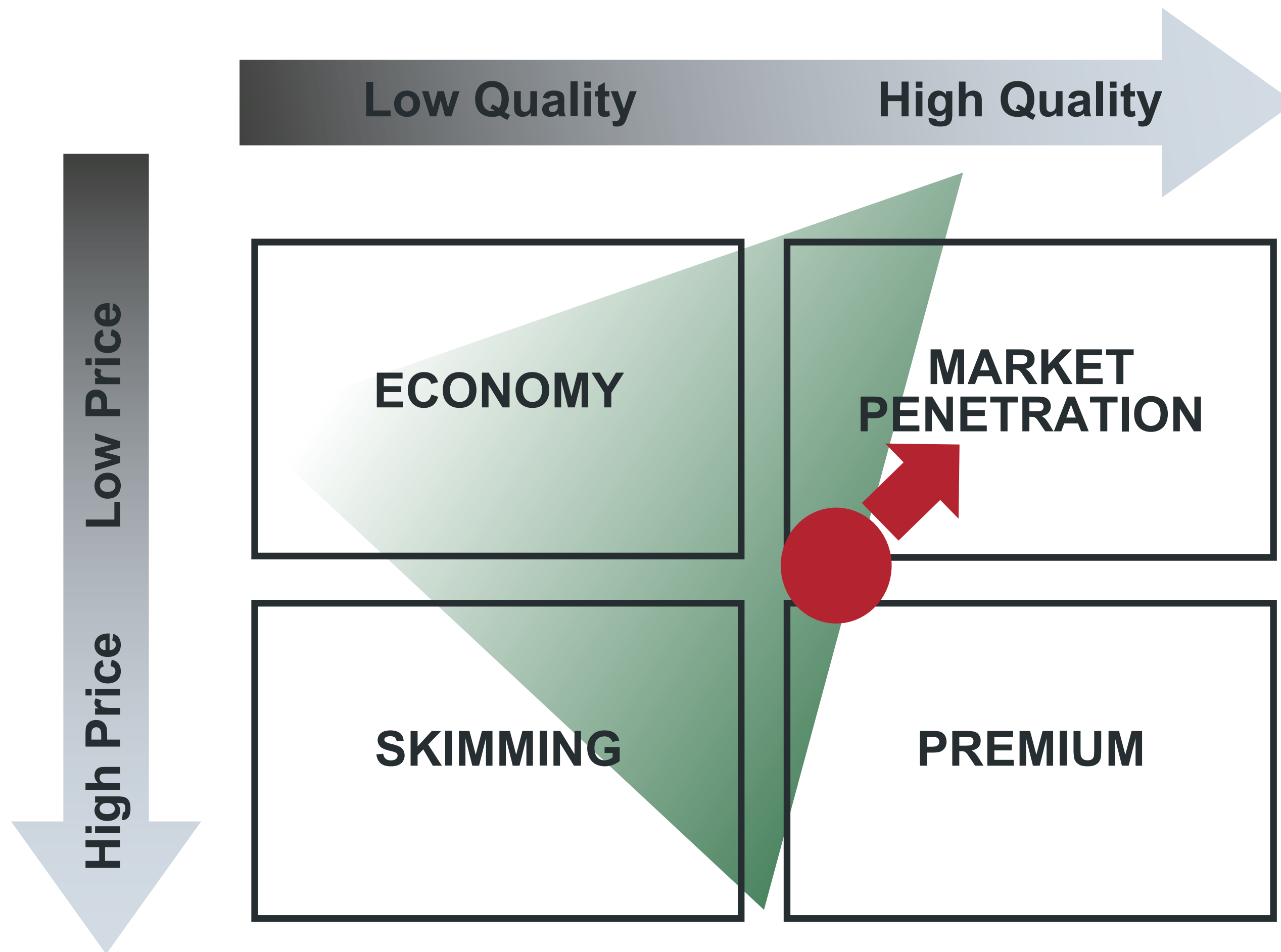


## Industrial

15%

Power Tool  
Industrial server  
Robot  
Solar Application





## Quality Is Everything

In the power semiconductor field, the quality is more important than the technology, innovation and price.

Through our strong supply chain, we reach the cost down and execute cost down by technology enhancing, as chip shrinkage, higher power density.

We don't sacrifice the material, quality to reach the low pricing marketing.

# New Product Roadmap

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2021

2022

2023

2024

## Diode/ Rectifier

STD/ FRED  
SiC SBD  
4A-20A,  
650V/ 1200V

Ultra Low VF SiC SBD  
20A-50A, 650V/ 1200V  
Automotive PBR\_Wave Schottky

Ultra Low VF SiC SBD  
1700V Series

## MOSFET

Low/ Mid Trench MOS  
GaN Cascode HEMT, 650V

Shield Gate MOSFET  
30V, 80V, 100V  
SiC MOSFET 1200V Series

WavyFET, 40V  
Ultra Low RDS(on)

## IGBT

10A-50V, 650V FS-IGBT  
150A, 1200V FS-IGBT

10V-100V IGBT  
By 8" Wafer Process  
400V light IGBT

## Power Module

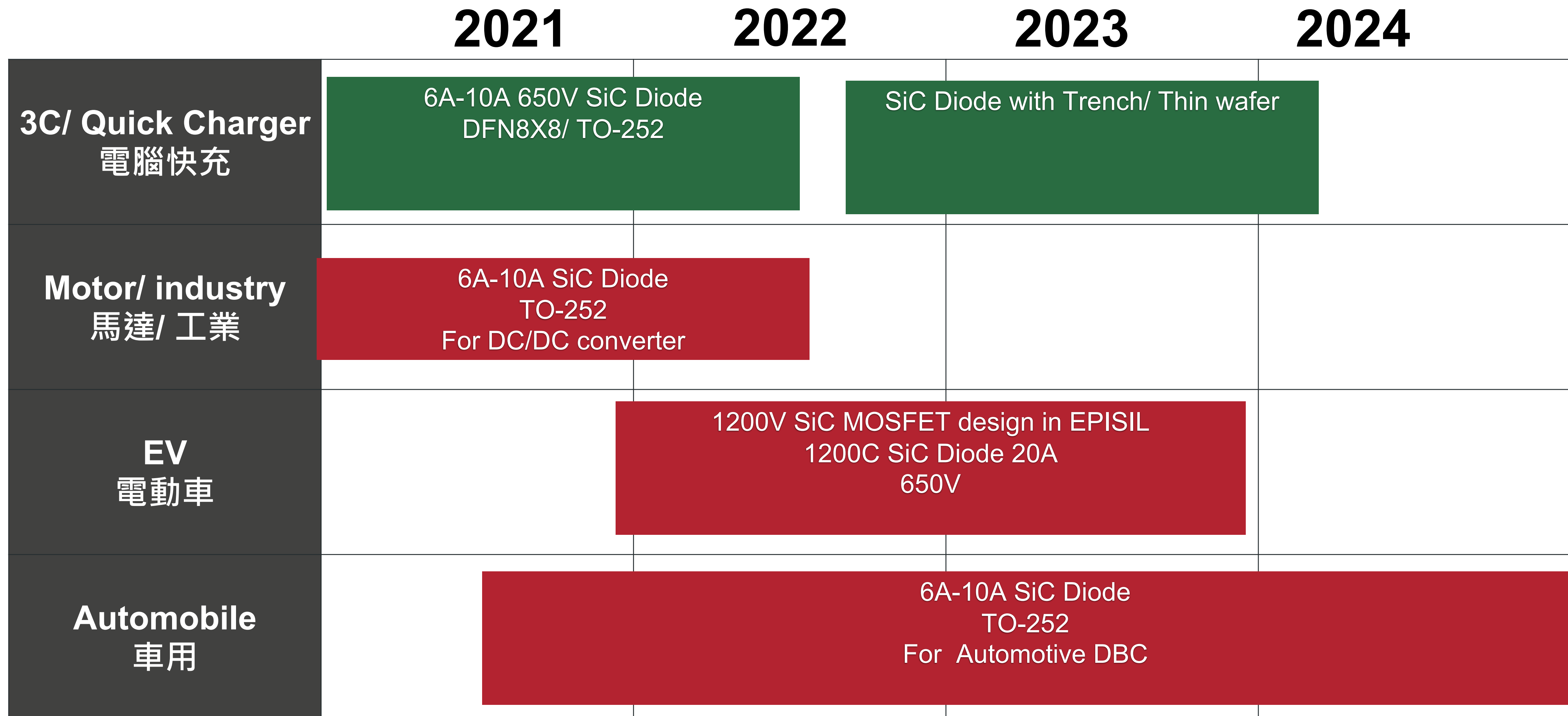
IGBT Module  
IGBT+ SiC SBD Module  
IPM Package

Production

Develop

Plan

# SiC Market Approaching Time Frame



Production

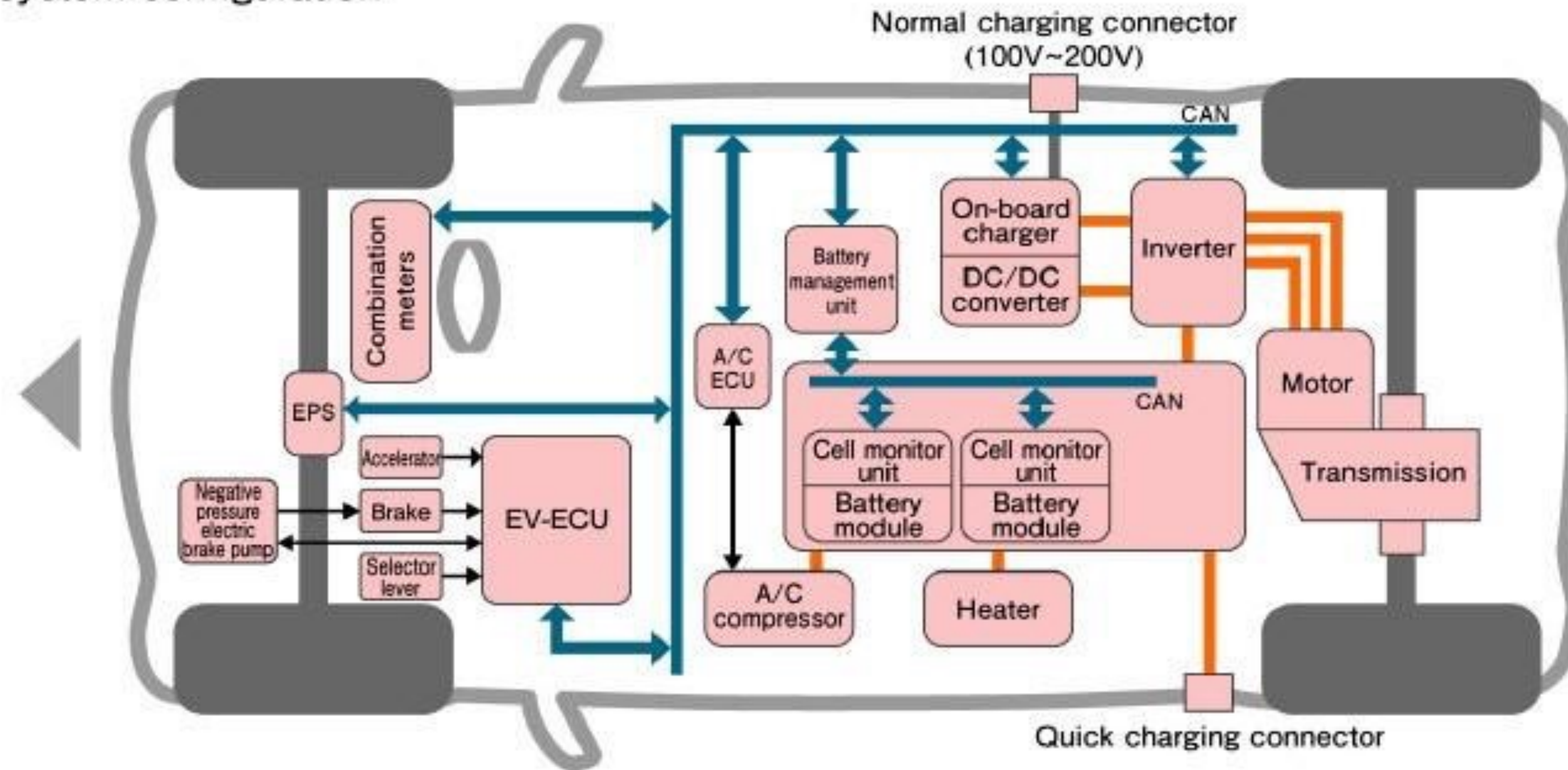
Develop

Plan

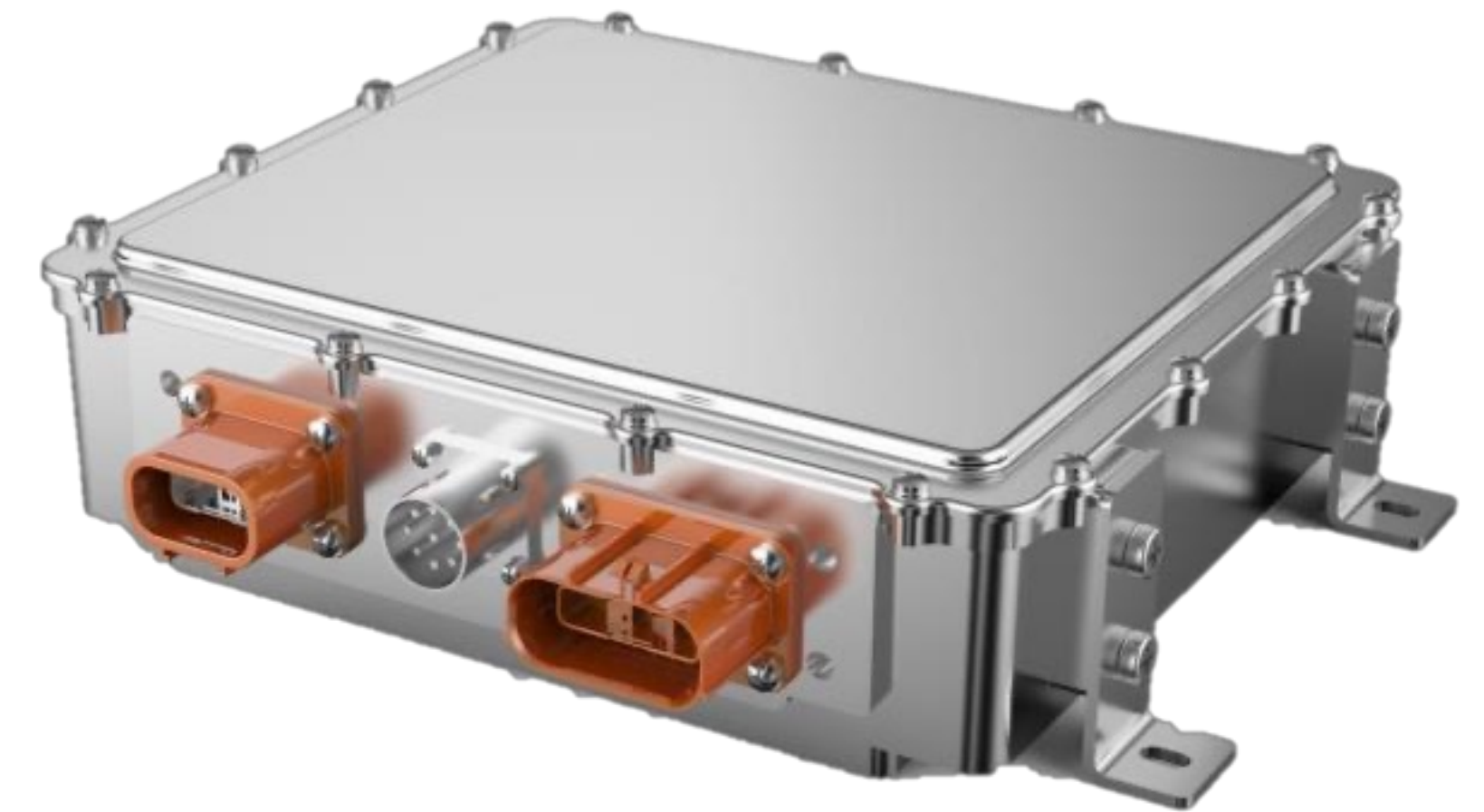


# Automotive: SiC Device Application for OBC

■ EV system configuration

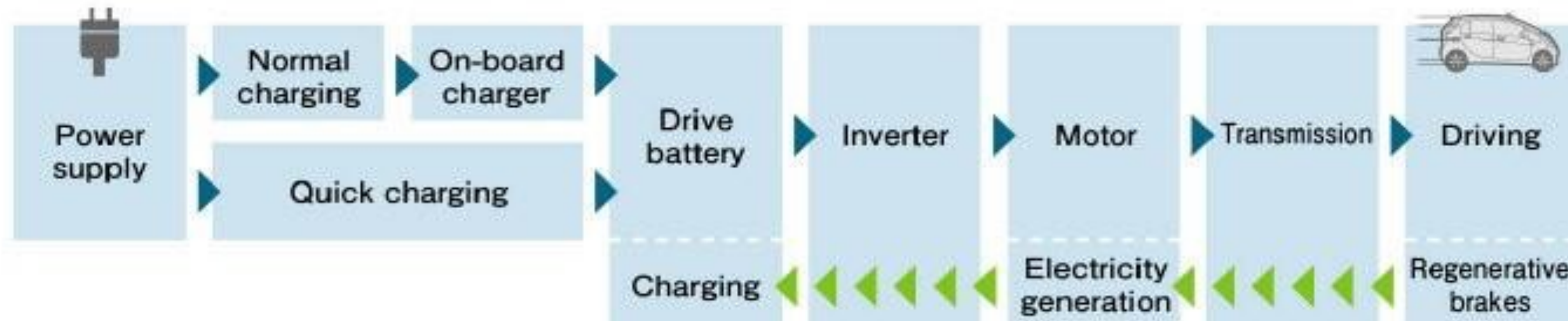


## OBC (On-Board Charger)



Work with Volvo for OBC  
10A, 650V with TO-252

Charging-to-driving process



## Request SiC Device Spec:

- SiC MOSFET:  
1200 V, 80 m-ohm, 30 A
- SiC Schottky Diode  
8A, 10A, 30A, 650V  
 $V_F < 1.7V$ ,  $I_R < 40\mu A$



# Industry: GaN FET + SiC Technology for 300Watt Series



Electrical	
Topology	LLC
Dielectric Withstand	4000VAC Primary - Secondary
Touch Current	< 100μA
EMC Standards	EN55032 / EN55011
	EN61000-3-2,3
	EN55024 / EN61000-4-2,3,4,5,6,8,11
MTBF	300,000 Calculated Hours at 25°C , by Telcordia SR-332



Current Si Solution:

- Input frequency: **47-63 Hz**
- Low Profile
- With PFC Circuit
- Efficiency: >88%

**Proposal to Customer:**

**Frequency: 250kHz**

**Using GaN MEMT for LLC**

**SiC Diode For PFC Circuit**

**Efficiency up to 95%**

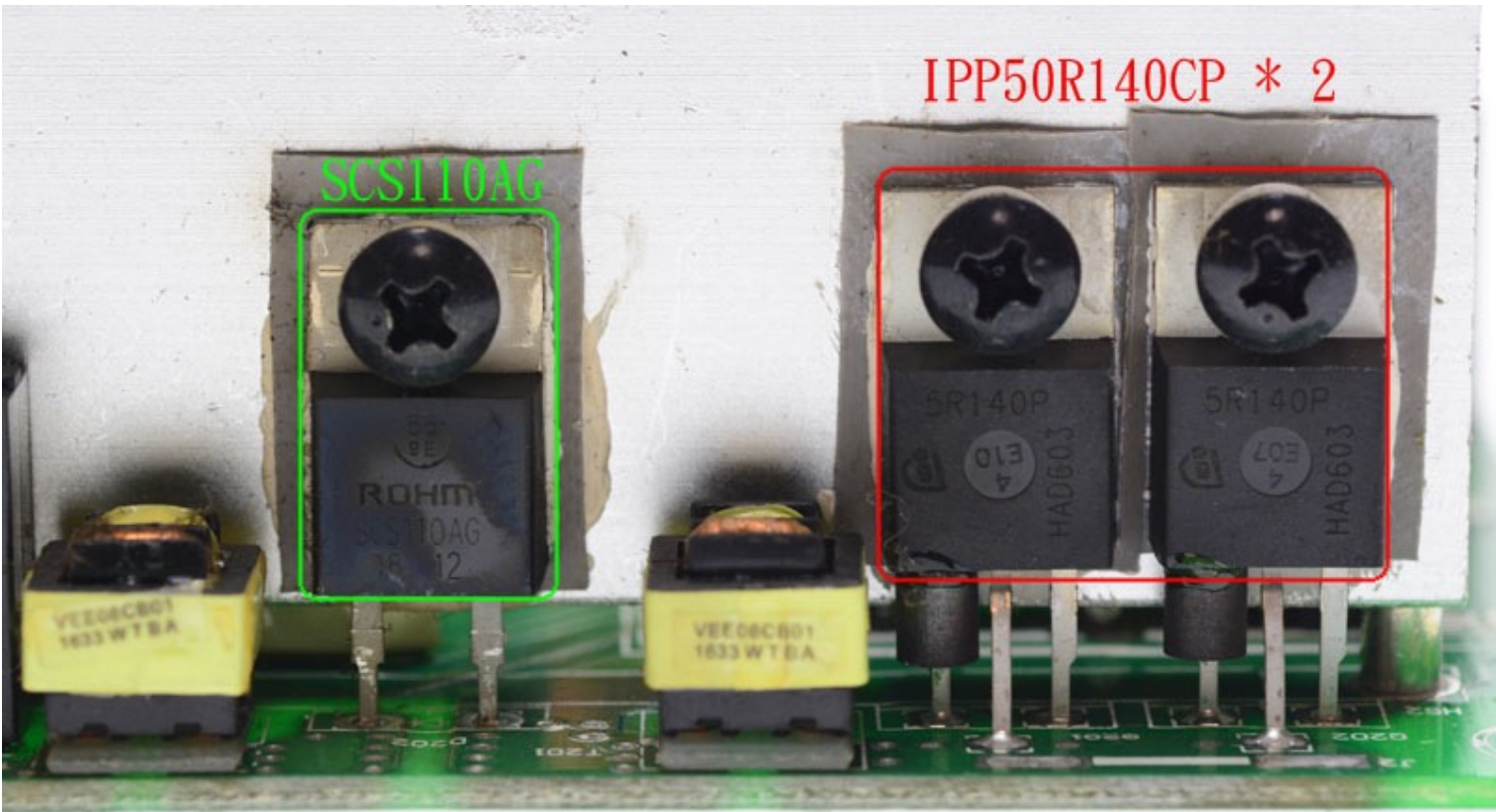


# PC Power: SiC on 電源供應器應用

Action: PFC功率因子採用SiC Diode, 驗證波形, 效率  
Schedule: W1-Nov, Submit report and re-visit customer

80Plus 測試種類 輸出負載	115V				230V			
	10%	20%	50%	100%	10%	20%	50%	100%
80Plus	無	80%	80%	80%	無	無	無	無
80Plus 銅牌	無	82%	85%	82%	無	81%	85%	81%
80Plus 銀牌	無	85%	88%	85%	無	85%	89%	85%
80Plus 金牌	無	87%	90%	87%	無	88%	92%	88%
80Plus 白金	無	90%	92%	89%	無	90%	94%	91%
80Plus 鈦金	90%	92%	94%	90%	90%	94%	96%	91%

2004 80Plus,  
2006 能源之星列入  
2016 鈦金上路,  
目前通過僅27款



## SEASONIC PRIME ULTRA TITANIUM

固定在散熱片上的APFC功率元件，右側紅框處為兩顆Power MOSFET，  
中央綠框處為  
SiC Schottky Barrier Diode (10A, 600V, TO-220AC)





# New Customers Application-2022



**SHARP** HT-SB115  
Bluetooth SOUND BAR



多功能变频器  
Use SiC Devices



1000W 储能充电板  
SiC MOSFET/ Diode



# GlobalSiC Device Supply Chain Map, we are in that

Substrate

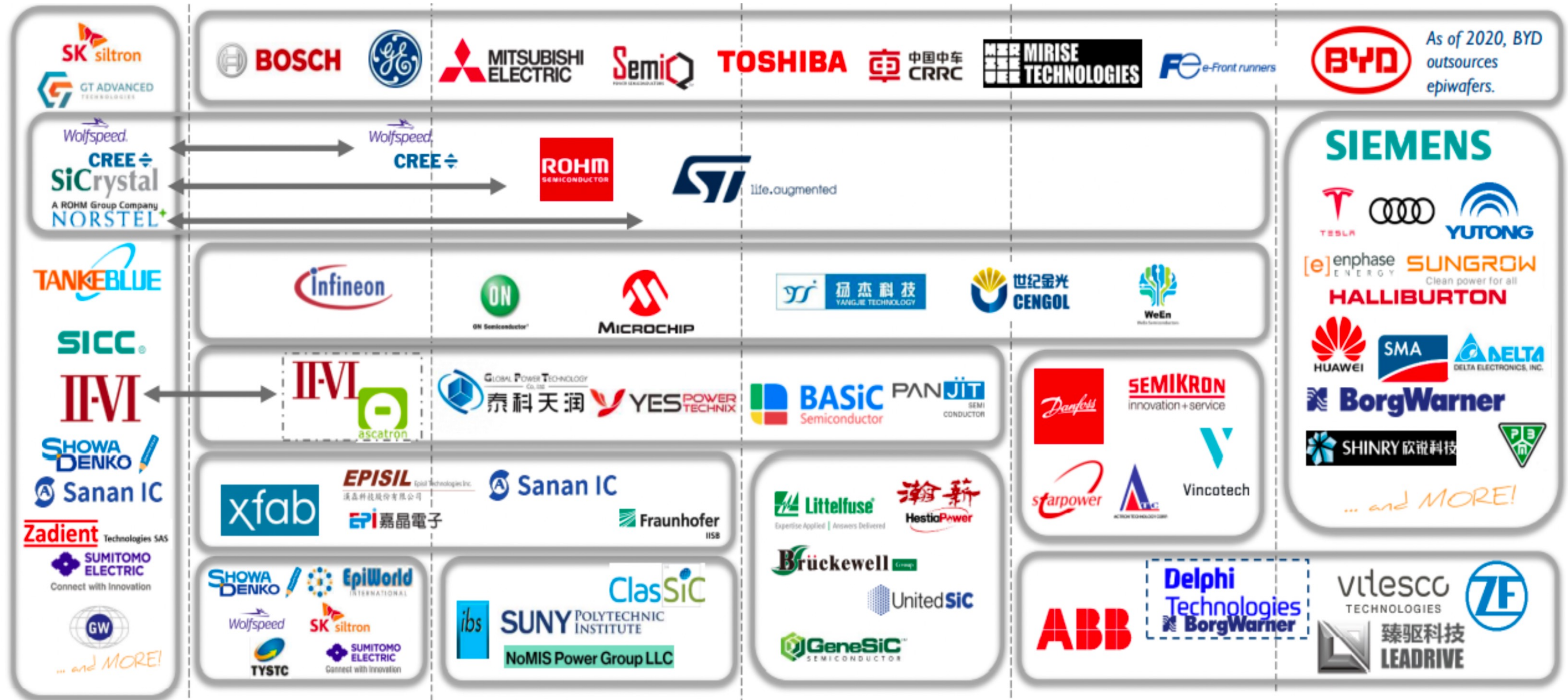
Epitaxy

Wafer Fab

Design

Module

System





# Client Board

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**BLAUPUNKT**

**AOBA** CLOVER GROUP  
AOBA Electronic Co., (M) Sdn. Bhd.

**PHILIPS**

**LED AMERICAN BRIGHT**

**iCATCH**

**rolling technologies**  
we make dreams reality

**NEW ENERGY**



**HANS LEDLITE**  
Solid State Lighting Towards Greener Earth

**HYUNDAI**

**CINCON**

**Lextar**

**NOKIA**

**NSM**

**NationGate**

**PHIHONG**

**NEW KINPO VALUE**  
ODM & EMS Partner

**Cal-Comp**  
Electronics & Communications

**FLEXTRONICS**

**Prosperous**  
Lighting



**SEMTRONICS**  
MICRO SYSTEMS PVT LTD



**MOTOROLA SOLUTIONS**

**nuvoTon**

**IC Lando**  
株式会社 アイ・シー・ランド

**DARFON**

**KUMHO ELECTRIC**

**HOTAYI**

**EPE**

電威光電有限公司

**RFT**

**SS LIGHT**  
(주)에스에스라이트

**BYD**

**DELTA Elettronica**



**BOSCH**  
Invented for life

**PREMIUM SOUND SOLUTIONS**

**SHARP**





# Next-Generation Power Semiconductors Global key Supplier

[www.bruckewell-semi.com](http://www.bruckewell-semi.com)

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