POWER PRODUCTS

Transforming Power with
INDUSTRY-LEADING SILICON CARBIDE
EXPERTISE & CAPACITY
WELCOME TO WOLFSPEED

Wolfspeed is the foremost manufacturer of Silicon Carbide Bare Die Schottky Diodes and MOSFETs, Discrete Schottky Diodes and MOSFETs, and Power Modules that put increased efficiency, higher switching frequency and reduced system size and costs in the hands of designers everywhere.

AND WE DIDN’T BECOME THE LEADER IN WIDE BANDGAP SEMICONDUCTORS OVERNIGHT.

Wolfspeed spent more than 35 years establishing a global brand known for innovation, financial strength and reliable materials sourcing, staffed by the most forward-looking thinkers and doers in any scientific enterprise.

Wolfspeed was born ready, and we’re outpacing the competition in every meaningful performance and cost-benefit parameter to provide RF and Power devices to any industry that needs the fastest, smallest, lightest and most efficient semiconductor products available. Which is all of them.

7,000,000,000,000+ HOURS IN THE FIELD. AND COUNTING.

Silicon Carbide has powered Wolfspeed’s Bare Die Schottky Diodes and MOSFETs, Discrete Schottky Diodes and MOSFETs, and Power Modules for more than seven trillion hours of end-customer usage worldwide.

THE WORLD LEADER IN SILICON CARBIDE.
WOLFSPEED IS YOUR TRUSTED VERTICALLY-INTEGRATED SILICON CARBIDE MANUFACTURER

As a vertically integrated company, Wolfspeed owns all steps in the Silicon Carbide production process, allowing us to push the technology forward quickly. Our founders pioneered Silicon Carbide and GaN solutions for both High Power and RF applications, and Wolfspeed remains the sole vertically integrated manufacturer for both industry sectors.

Wolfspeed was the first to commercialize the Silicon Carbide MOSFET and has the world’s largest install base of Silicon Carbide devices. With a best-in-class failure-in-time (FIT) rate, Wolfspeed is consistently in the single digits at 5-per-billion device hours, illustrating the industry-leading reliability and performance of the company’s Silicon Carbide devices.
BECAUSE WE INNOVATE AT EVERY STAGE, WE’RE ABLE TO DO THINGS OTHER COMPANIES CAN’T

POWER BARE DIE PRODUCTS
MOSFET and Schottky diode devices in die form for customers with internal semiconductor packaging capability

POWER MODULES
Power modules for high power applications in automotive, industrial, and energy

DISCRETE POWER DEVICES
Discrete devices for broad applications across automotive, industrial and energy

OUR STRENGTHS

WORKING CLOSELY WITH CUSTOMERS
TO ENABLE NEW PRODUCTS WITH INCREASING ADOPTION OF SILICON CARBIDE

UTILIZE RAPID LEARNING CYCLES
TO CREATE DEVICES AND DRIVE SIGNIFICANT IMPROVEMENTS IN QUALITY AND MANUFACTURING

QUALITY
END-TO-END MANUFACTURING
ABOUT BARE DIE

Wolfspeed has the broadest portfolio of Silicon Carbide (SiC) Bare Die MOSFETs and Schottky diodes on the market.

Wolfspeed® power bare die technology enables a broad array of technology and system solutions for the market. Wolfspeed power die team is engaged with the best module vendors, tier one suppliers, and OEM providers across the globe. This close interaction allows for the best outcome in innovation, technology and systems. Customers gain supply chain flexibility and insurance of supply that enable them to develop their systems with multiple solutions across multiple applications.

Unleashing the Power of Possibilities™

Wolfspeed has the broadest portfolio of Silicon Carbide (SiC) Bare Die MOSFETs and Schottky diodes, with more than seven trillion field hours, lowest FIT rate, and 35+ years of experience in Silicon Carbide. Wolfspeed provides advanced design, extensive qualification, screening and parametric characterization resulting in the most reliable and robust devices on the market.

Learn more at wolfspeed.com
Wolfspeed continues to lead in Silicon Carbide with our first Automotive 1200 V E-Series™ line of Bare Die Silicon Carbide (SiC) MOSFETs. The portfolio is fully automotive qualified, with high blocking voltage with the industry-leading low RDS(ON) over temperature stability, enabling low conduction losses and highest figures of merit in the most demanding applications. These devices are optimized for use in high power applications such as automotive drive trains, motor drives, solid state circuit breakers, resonant topologies, and more.

Based on the latest 3rd generation technology, Wolfspeed’s 1200 V Bare Die SiC MOSFETs include a range of on-resistance and package options that enable designers to select the right part for their application.

The 1200 V MOSFETs are designed for low RDS(ON), are easy to parallel and compatible with standard gate drive design. The efficiency gained by moving from a silicon-based solution to Silicon Carbide can help reduce system size, weight, and cooling requirements.

A range of top side and back side metallization options and die layouts provide flexibility to module designers in choice of assembly process and module layout.

### FEATURES
- High Blocking Voltage with Industry Leading Low RDS(on) Over Temperature Stability
- Fast Intrinsic Diode with Low Reverse Recovery Charge ($Q_{rr}$)
- High-Speed Switching with Low Output Capacitance
- Low Conduction Losses Over Temperature
- Avalanche Ruggedness

### BENEFITS
- Supply Chain Flexibility
- Improves System Efficiency with Lower Conduction Losses
- Enables High Switching Frequency Operation
- Improves System Level Power Density
- Reduces System Size, Weight, and Cooling Requirements

### APPLICATIONS
- Drivetrain
- Fast Charging
- Energy Storage
- Solar
- Motor Drive
- UPS
- Aerospace

### Power Die Industrial Products

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<th>Part Number</th>
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*Coming Soon
Wolfspeed has the broadest portfolio of Silicon Carbide Schottky diodes, with more than seven trillion field hours, lowest FIT rate, and 35 years of experience in Silicon Carbide offering customers proven reliability. Wolfspeed provides advanced design, extensive qualification, screening and parametric characterization resulting in the most reliable and robust devices on the market.

Our diodes feature the MPS (Merged PiN Schottky) design which is more robust and reliable than standard Schottky barrier diodes. Pairing Wolfspeed Silicon Carbide diodes with Silicon Carbide MOSFETs creates a powerful combination of higher efficiency and reduced component pricing when purchased together.

### FEATURES
- Zero Reverse Recovery
- Zero Forward Recovery
- High-Frequency Operation
- Fast Switching
- Schottky Rectifier

### BENEFITS
- Higher Efficiency
- Low Switching Loss
- High Thermal Conductivity

### APPLICATIONS
- EV Chargers
- Industrial Power Supplies
- Motor & Traction Drives
- Solar & Energy Storage Systems
- UPS
- DC-DC Converters

### Power Diode Industrial Products

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### Power Diode Automotive Products

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ABOUT DISCRETES
Wolfspeed has the broadest portfolio of Silicon Carbide (SiC) MOSFETs and Schottky diodes

Wolfspeed has the broadest portfolio of Silicon Carbide (SiC) MOSFETs and Schottky diodes enabling power applications across automotive, renewable energy, power supply, and industrial.

Wolfspeed’s Silicon Carbide MOSFETs enable higher switching frequencies, lower conduction losses, higher blocking voltages and avalanche capability, and reduce the size of components like inductors, capacitors, filters and transformers. We established a new benchmark for energy-efficient power switches when we commercialized the industry’s first fully-qualified Silicon Carbide MOSFET in 2011, and we have been perfecting the technology ever since.

Wolfspeed has more than seven trillion field hours, lowest FIT rate, and 30+ years of experience in Silicon Carbide. Designing with both Wolfspeed Silicon Carbide diodes and MOSFETs creates a powerful, cost-effective approach to reaching higher efficiency performance.

WOLFSPEED® DISCRETE POWER | PACKAGE GUIDE

WOLFSPEED® DISCRETE POWER | DEVICE NOMENCLATURE GUIDE

Example: C3M0060065D

Example: E4D20120D

Schottky Diodes

Example: C = industrial
E = Automotive

Example: A = TO-220-2
D = TO-247-3
K = TO-247-4
L = TOLL
P = TO-247-4 PLUS

Example: E = Automotive

Example: A = TO-220-2
D = TO-247-3
K = TO-247-4
L = TOLL
P = TO-247-4 PLUS

Example: Q = QFN 8x8

Example: F = TO-220-2-F2
G = TO-263-2
H = TO-247-2
I = TO-220-2-ISO
Q = QFN 8x8

Example: C = industrial
E = Automotive
Wolfspeed is proud to offer our 3rd-Generation 650 V MOSFETs, enabling smaller, lighter, and highly efficient power conversion in an even wider range of power systems.

The 650 V MOSFET product family is ideal for applications including high performance industrial power supplies, server/telecom power, electric vehicle charging systems, energy storage systems, uninterruptible power supplies, and battery management systems.

### BROADEST PORTFOLIO OF 650 V SILICON CARBIDE MOSFETS FOR EFFICIENCY

**FEATURED DESIGN TOOLS**

- **3.6 kW Bridgeless Totem-Pole PFC**
  - CRD-03600AD065E-L
- **6.6kW High Frequency DC-DC Converter**
  - CRD-06600DD065N
- **6.6kW High Power Density Bi-Directional EV On-Board Charger**
  - CRD-06600FF065N
- **SpeedVal Kit™ Modular Evaluation Platform**
  - SpeedVal Kit

### FEATURES

- Low $R_{DS(ON)}$ over Temperature
- Low Device Capacitances
- Kelvin Source Pin
- High Temperature Operation ($T_J = 175^\circ C$)
- Fast Diode with Ultra Low Reverse Recovery

### BENEFITS

- Improves System Efficiency with Lower Conduction Losses
- Enables High Switching Frequency Operation
- Improves System Level Power Density
- Reduces System Size, Weight, and Cooling Requirements
- Enables New Hard Switching Topologies (Totem-Pole PFC)

### APPLICATIONS

- Industrial Power Supplies
- Server/Telecom
- EV Fast Charging
- Energy Storage Systems (ESS)
- Uninterruptible Power Supplies (UPS)
- Battery Management Systems (BMS)

### PART NUMBER SPECIFICATIONS

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<th>Part Number</th>
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Wolfspeed’s 900 V Silicon Carbide MOSFETs offer low inductance in low inductance discrete packages with wide creepage and clearance distance between drain and source (~8mm). These MOSFETs take advantage of the high-frequency capability of the latest technology chips while providing extra electrical isolation suitable for high pollution environments. The separate Kelvin source pin reduces inductance, which reduces switching losses by as much as 30%. Designers can reduce component-count by moving from silicon-based, three-level topologies to simpler two-level topologies made possible by the improved switching performance.

**FEATURES**
- Low $R_{DS(ON)}$ Over Temperature
- Low-impedance package
- Fast Intrinsic Diode with Low Reverse Recovery ($Q_{rr}$)
- Kelvin Source Pin

**BENEFITS**
- Improves System Efficiency with Lower Conduction Losses
- Enables High Switching Frequency Operation
- Reduces System Size, Weight, and Cooling Requirements
- Enables New Hard Switching Topologies (Totem-Pole PFC)

**APPLICATIONS**
- Motor Drive
- EV Charging Systems
- Uninterruptible Power Supply (UPS)
- Battery Management Systems
- EV Fast Charging
- Welding

**FEATURED DESIGN TOOLS**
- SpeedVal Kit™ Modular Evaluation Platform
- SpeedVal Kit

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The 1000 V Silicon Carbide MOSFETs address many power design challenges by providing a unique device with low on-resistance, very low output capacitance, and low source inductance for a perfect blend of low switching losses and low conduction losses.

Wolfspeed's 1000 V Silicon Carbide MOSFETs are optimized for fast switching devices such as electric-vehicle charging systems, industrial power supplies, and renewable energy systems.

**FEATURES**
- Low $R_{DS(ON)}$ Over Temperature
- High-Speed Switching with Low Output Capacitance
- Fast Intrinsic Diode with Low Reverse Recovery ($Q_{rr}$)
- Kelvin Source Pin

**BENEFITS**
- Enables a Reduction in Overall System Cost
- Improves System Efficiency While Decreasing System-Size
- Enables Hard Switching Topologies
- Enables High Switching Frequency Operation

**APPLICATIONS**
- Industrial Power Supplies
- Renewable Energy Systems
- EV Fast Charging
- On-Board Electric Vehicle Charging

**FEATURED DESIGN TOOLS**
- 20kW FULL BRIDGE LLC RESONANT CONVERTER CRD-20DD09P-2
- SpeedVal Kit™ Modular Evaluation Platform SpeedVal Kit

**PART NUMBERS AND SPECIFICATIONS**

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1200 V SILICON CARBIDE MOSFETs

Wolfspeed’s latest generation of Silicon Carbide MOSFETs set the standard for performance, ruggedness and ease of design-in. Extremely fast switching, ultra-low switching losses, stable conduction losses over temperature assure significant improvement of system efficiency, power density and overall BOM cost versus silicon MOSFET and IGBT incumbants.

FEATURED DESIGN TOOLS

- 22kW High Efficient Bi-Directional AFE
  CRD-22AD12N
- 22kW Bi-directional High Efficiency DC/DC Converter
  CRD-22DD12N
- 30 kW Discrete Interleaved LLC DC-DC Converter
  CRD30DD12N-K
- SpeedVal Kit™ Modular Evaluation Platform
  SpeedVal

FEATURES

- Low $R_{DS(ON)}$ Over Temperature
- Fast, rugged intrinsic Silicon Carbide body diode
- High Temperature Operation ($T_J=175°C$)

BENEFITS

- Lowest Possible Switching and Conduction Losses
- Minimizes System Heat-Sink Requirement
- Enables High Power Density Designs

APPLICATIONS

- Energy Storage
- Solar Inverters
- Battery Charging
- UPS
- Motor Drive

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Blocking Voltage (V)</th>
<th>$R_{DS(ON)}$ at 25°C</th>
<th>Current Rating at 25°C (A)</th>
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*Coming Soon
**1700 V SILICON CARBIDE MOSFETs**

Wolfspeed’s 1700 V Silicon Carbide MOSFETs enable smaller and more efficient power conversion systems. Compared to silicon-based solutions, Wolfspeed Silicon Carbide technology enables increased system power density, higher switching frequencies, smaller designs, cooler components, reduced size of components like inductors, capacitors, filters & transformers, and overall cost benefits.

**FEATURES**
- High Blocking Voltage with Low $R_{DS(ON)}$
- High Speed Switching with Low Capacitances
- Fast Intrinsic Diode with Low Reverse Recovery ($Q_r$)
- Low Parasitic Inductance
- ~8mm Creepage and Clearance Distance

**BENEFITS**
- Higher System Efficiency
- Increased System Switching Frequency
- Enables Hard-Switching Topologies
- Separate Kelvin Source Pin lowers Source Inductance and Provides Up To 30% Lower Switching Losses
- Robust Isolation With Wide Creepage and Clearance Distance Between Drain and Source

**APPLICATIONS**
- Auxiliary Power Supplies
- Switch Mode Power Supplies
- Power Inverters
- 1500 V Solar Inverters
- High Voltage DC-DC Converters
- Motor Drives
- Pulsed Power Applications

**FEATURED DESIGN TOOLS**
- WIDE INPUT VOLTAGE RANGE (300 VDC – 1200 VDC) 15W FLYBACK AUXILIARY POWER SUPPLY BOARD CRD-15DD17P

**Table**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Blocking Voltage (V)</th>
<th>$R_{DS(ON)}$ at 25°C</th>
<th>Current Rating at 25°C (A)</th>
<th>Package</th>
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<td>1000 mΩ</td>
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**FEATURED DESIGN TOOLS**
- System Specs
SILICON CARBIDE SCHOTTKY DIODES
Wolfspeed’s Latest Generation (C6D) Schottky Diodes

Wolfspeed’s Silicon Carbide diode portfolio offers multiple generations to meet diverse application requirements. Wolfspeed’s continually expanding 6th generation Silicon Carbide Schottky diode family offers best-in-class forward voltage drop ($V_f$) at $25 \, ^\circ\text{C}$ = $1.27 \, \text{V} & V_f (175 \, ^\circ\text{C}) = 1.5 \, \text{V}$). This improvement further reduces conduction losses and boosts overall system efficiency – even in the most demanding power conversion applications.

---

**FEATURES**
- Low $V_f$ ($25 \, ^\circ\text{C}$) = 1.27 V & (175 °C) = 1.5 V
- Positive Temperature Co-efficient
- Zero Reverse Recovery
- Robust MPS Technology
- Low Figure of Merit ($Q_F \times V_F$)
- Wide Range of $T_J$ (-55 °C to 175 °C)

**APPLICATIONS**
- Enterprise Power, Server, & Telecom
- Uninterruptible Power Supplies (UPS)
- Consumer Electronics
- Industrial Power Supplies
- Solar Energy Systems
- Medical Power Supplies

**BENEFITS**
- Improved System Level Efficiency
- High Surge Current Capability
- High Frequency Operation
- Cost Effective High Power Density
- Easy Parallel Operation
- Reduced Heat Sink Requirements

**DIODES**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

**SILICON CARBIDE SCHOTTKY DIODES**

**Wolfspeed’s Latest Generation (C6D) Schottky Diodes***

**APPLICATIONS**

**FEATURES**

**BENEFITS**

---

**System Spec**

---

**Part Number** | **Blocking Voltage (V)** | **Current Rating at 25°C (A)** | **Package**
--- | --- | --- | ---
C6D04065A | 650 | 4 | TO-220-2
C6D04065E | 650 | 4 | TO-252-2
C6D06065A | 650 | 6 | TO-220-2
C6D06065E | 650 | 6 | TO-252-2
C6D06065G | 650 | 6 | TO-263-2
C6D06065Q | 650 | 6 | QFN 8x8
C6D08065A | 650 | 8 | TO-220-2
C6D08065E | 650 | 8 | TO-252-2
C6D08065G | 650 | 8 | TO-263-2
C6D08065Q | 650 | 8 | QFN 8x8
C6D10065A | 650 | 10 | TO-220-2
C6D10065E | 650 | 10 | TO-252-2
C6D10065G | 650 | 10 | TO-263-2
C6D10065Q | 650 | 10 | QFN 8x8
C6D16065A | 650 | 16 | TO-247-3
C6D20065A | 650 | 20 | TO-220-2
C6D20065D | 650 | 20 | TO-247-3
C6D20065G | 650 | 20 | TO-263-2
C6D20065H | 650 | 20 | TO-247-2
C6D20065D1* | 650 | 20 | TO-247-3
C6D05170H | 1700 | 5 | TO-247-2
C6D10170H | 1700 | 10 | TO-247-2
C6D25170H | 1700 | 25 | TO-247-2

*Coming Soon
### 600V DISCRETE

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### 650V DISCRETE

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### 1700V DISCRETE

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*Coming Soon*
E-SERIES™ AUTOMOTIVE SILICON CARBIDE PRODUCTS

AUTOMOTIVE-QUALIFIED SILICON CARBIDE PRODUCTS

Wolfspeed continues to lead the end of the ICE vehicle age with our diverse E-Series portfolio of Silicon Carbide MOSFETs and Schottky Diodes. E-Series products are automotive qualified and PPAP capable, specifically designed to be robust and reliable in the harshest environments. These devices are optimized for use in multiple on-board automotive applications across battery electric, plug-in electric, and fuel cell vehicles.

FEATURED DESIGN TOOLS

**60kW INTERLEAVED BOOST CONVERTER**
CRD-60DD12N

**6.6kW HIGH POWER DENSITY BI-DIRECTIONAL EV ON-BOARD CHARGER**
CRD-06600FF065N

FEATURES

Automotive Qualified (AEC-Q101) and PPAP Capable

Low MOSFET \( R_{DS(on)} \) and Schottky Diode \( V_f \), Over Temperature

Fast Intrinsic Diode with Low Reverse Recovery \( Q_{rr} \) MOSFETs

Low Forward Voltage \( (V_f) \) Diodes

BENEFITS

High-Voltage, High-Temperature, and High-Humidity Resistance

Higher Power Density Enabling Smaller System Form Factor

Improves System Efficiency with Lower Switching & Conduction Losses

Enables High-Reliability Operation

APPLICATIONS

Battery Electric Vehicle Charging

High Voltage DC-DC Converters

Auxiliary Power Supplies

Fuel Cell Vehicle Converters

Traction Inverters

**FEATURED DESIGN TOOLS**

**60kW INTERLEAVED BOOST CONVERTER**
CRD-60DD12N

**6.6kW HIGH POWER DENSITY BI-DIRECTIONAL EV ON-BOARD CHARGER**
CRD-06600FF065N

**PARTS LIST**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Blocking Voltage (V)</th>
<th>( R_{DS(on)} ) at 25°C (mΩ)</th>
<th>Current Rating at 25°C (A)</th>
<th>Package</th>
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*Coming Soon
Wolfspeed’s vertical integration (from Silicon Carbide material to packaging) enables us to provide leading Silicon Carbide technology throughout the supply chain. Our power modules are designed to meet each customer’s system design requirements with a package that offers best-in-class Silicon Carbide performance. We offer two distinct product categories to serve different customer value propositions: Industry-Standard Footprints and Optimized Footprints.

**INDUSTRY-STANDARD FOOTPRINTS**
Well-established footprints/packages that have been internally optimized for Silicon Carbide and provide a straightforward drop-in replacement at the package level for customers using these platforms with either Si or Silicon Carbide devices.

**OPTIMIZED FOOTPRINTS**
Uniquely developed by Wolfspeed to offer new capability designed specifically for Silicon Carbide.

### MODULE GATE DRIVER BOARDS

<table>
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<tr>
<th>SKU</th>
<th>Package</th>
<th>Designed By</th>
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## WOLFSPEED® MODULES

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*Coming Soon
Wolfspeed WolfPACK™ Silicon Carbide Power Modules enable multiple configurations across power levels in multiple applications. The new GM3 Aluminum Nitride Substrate dramatically reduces thermal resistance, lowers junction temperature for given loss, enhances power cycling lifetime for given losses, and enables higher utilization of Silicon Carbide performance.

**Module Size:**
- F platform: 62.8 mm x 33.8 mm
- G platform: 62.8 mm x 56.7 mm

**Topology:**
- F platform: six-pack / half-bridge / full-bridge
- G platform: half-bridge

**FEATURES**
- Leading Silicon Carbide MOSFET Technology in an Industry Standard Form Factor
- Highest Current Rated Topologies Commercially Available In Class
- Built in NTC
- Press Fit Connections
- High performance Aluminum Nitride (AlN) Substrate Available

**BENEFITS**
- Maximum Power Density In Class
- Ease Of Layout and Assembly
- System Scalability and Reliability
- End To End Support - Simulation Through Reference Hardware
- Simpler Cooling Systems and Smaller Systems

**APPLICATIONS**
- EV Fast Charging
- UPS
- Induction Heating and Welding
- Industrial Motor Drives
- Industrial Power Supply
- Renewable Energy Storage

<table>
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<tr>
<th>Part Number</th>
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Wolfspeed’s 62mm power module platform provides the system benefits of Silicon Carbide while maintaining the robust, industry-standard 62 mm module package. The internal design of Wolfspeed’s 62mm BM package enables high speed Silicon Carbide switching benefits, due to the low-inductance layout. Choose from silicon nitride ceramic for sustained maximum junction temperature operation, or aluminum nitride ceramic for reduced thermal resistance with robust CTE matching. Wolfspeed power modules are backed by industry leading Silicon Carbide technology and a broad portfolio of current and voltage ratings available to fit diverse industrial application requirements.

**Benefits**
- Improved Thermal Conductivity
- Faster Time to Market
- Reduced Cooling & System Costs
- Low Power Losses & Maximum Voltage Utilization

**Features**
- Copper Baseplate, Silicon Nitride and Aluminum Nitride Ceramics
- Low Inductance Design (10 – 11nH)

**Applications**
- Railway Technology
- EV Fast Charging
- On-Board Charging
- Industrial Automation & Testing
- Renewable Energy

**Module Size:**
106 x 62 x 30 (mm)

**Topology:**
Half-Bridge

**Supporting Gate Driver:**
- CGD1200HB2P-BM3 for 1200 V BM3 modules
- CGD1700HB2P-BM3 for 1700 V BM3 modules

**Supporting Evaluation Kit:**
- KIT-CRD-CIL12N-BM
- KIT-CRD-CIL17N-BM

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</tr>
<tr>
<td>WASS310M17BM3</td>
<td>1700</td>
<td>310</td>
<td>5</td>
<td>Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes</td>
</tr>
</tbody>
</table>

*Coming Soon
Wolfspeed has developed the XM3 power module platform to maximize the benefits of Silicon Carbide while keeping the module and system design robust, simple, and cost effective. With half the weight and volume of a standard 62 mm module, the XM3 power module maximizes power density while minimizing loop inductance and enabling simple power bussing. The XM3’s Silicon Carbide optimized packaging enables 175°C continuous junction operation with a high reliability silicon nitride (Si$_3$N$_4$) power substrate to ensure mechanical robustness under extreme conditions.

**FEATURES**
- 50% Smaller/Lighter than Standard 62mm Footprint
- Conduction Loss / Switching Loss Optimized Versions
- Allow For Simple and Low-Inductance Busbar Interconnection
- High Reliability Power Substrate to Address Demanding Markets

**BENEFITS**
- Lightweight, Compact Form Factor with 62mm Compatible Baseplate Enables System Retrofit
- Increased System Efficiency, Due to Low Switching & Conduction Losses of Silicon Carbide
- High Reliability, Robust Material Selection

**APPLICATIONS**
- Traction Inverter / Motor Drive
- Power Supplies / UPS
- Test and Production Equipment
- Aerospace / eVTOL
- EV Fast Charging
- Medical

**MODULE SIZE:**
80 x 53 x 19 (mm)

**TOPOLOGY:**
Half-Bridge

**SUPPORTING GATE DRIVER:**
- CGD12HBXMP
- FRDMGD3160XM3EVM
- CGD1700HB2P-XM3

**SUPPORTING EVALUATION KIT:**
- KIT-CRD-CIL12N-XM3
- KIT-CRD-CIL17N-XM3

**SUPPORTING REFERENCE DESIGNS:**
- CRD***DA12E-XM3
- ***=200, 250, 300, 600

### X PLATFORM
<table>
<thead>
<tr>
<th>Part Number</th>
<th>Blocking Voltage (V)</th>
<th>Nominal Current (A)</th>
<th>$R_{\text{DS(on)}}$ (mΩ) at 25°C</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAB400M12XM3</td>
<td>1200</td>
<td>400</td>
<td>4</td>
<td>Half-Bridge, C3M™ Switching-Optimized MOSFETs</td>
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<tr>
<td>CAB425M12XM3</td>
<td>1200</td>
<td>425</td>
<td>3.2</td>
<td>Half-Bridge, C3M Switching-Optimized MOSFETs</td>
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<tr>
<td>CAB450M12XM3</td>
<td>1200</td>
<td>450</td>
<td>2.6</td>
<td>Half-Bridge, C3M Conduction-Optimized MOSFETs</td>
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<tr>
<td>EAB450M12XM3</td>
<td>1200</td>
<td>450</td>
<td>2.6</td>
<td>Automotive grade, Half-Bridge, C3M Conduction-Optimized MOSFETs</td>
</tr>
<tr>
<td>CAB320M17XM3</td>
<td>1700</td>
<td>320</td>
<td>4</td>
<td>Half-Bridge, C3M MOSFETs</td>
</tr>
</tbody>
</table>
Wolfspeed has developed the HM power module platform to provide the benefits of Silicon Carbide in power density sensitive applications while maintaining the baseplate compatibility of a 62mm module. The HM platform’s Silicon Carbide optimized packaging enables 175°C continuous junction operation with a high-reliability Silicon Nitride (Si₃N₄) power substrate to ensure mechanical robustness under extreme conditions and a lightweight AlSiC baseplate.

**Supporting Gate Driver:**
CGD1700HB3P-HM3

**Supporting Evaluation Kit:**
KIT-CRD-CIL12N-HM3
KIT-CRD-CIL17N-HM3

**Module Size:**
110 mm x 65 mm x 12.2 mm

**Topology:**
Half-Bridge

---

### Features
- Low Inductance, Low Profile 62mm Footprint
- High Junction Temperature (175 °C) Operation
- Light Weight AlSiC Baseplate
- High Reliability Silicon Nitride Insulator

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### Benefits
- Lightweight, Compact Form Factor with 62mm Compatible Baseplate Enables System Retrofit
- Increased System Efficiency, Due to Low Switching & Conduction Losses of Silicon Carbide
- High Reliability Material Selection

---

### Applications
- Railway Technology
- Solar
- EV Fast Charging
- On-Board Charging
- Industrial Automation & Testing
- Medical power

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### Table: H Module Platform

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Blocking Voltage (V)</th>
<th>Nominal Current (A)</th>
<th>R_{DS(ON)} (mΩ) at 25°C</th>
<th>Description</th>
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<tbody>
<tr>
<td>CAS480M12HM3</td>
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<td>480</td>
<td>2.29</td>
<td>Half-Bridge, C3M™ MOSFETs + Schottky Diodes</td>
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<tr>
<td>CAR600M12HN6</td>
<td>1200</td>
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<td>Half-Bridge Rectifier, Gen 6 Schottky Diodes</td>
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<td>CAB760M12HM3</td>
<td>1200</td>
<td>760</td>
<td>1.33</td>
<td>Half-Bridge, C3M MOSFETs</td>
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<td>CAB760M12HM3R</td>
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<td>760</td>
<td>1.33</td>
<td>Half-Bridge Right Signal Pins for Paralleling, C3M MOSFETs</td>
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<td>CAS380M17HM3</td>
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<td>380</td>
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<td>Half-Bridge, C3M MOSFETs + Schottky Diodes</td>
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<td>CAB650M17HM3</td>
<td>1700</td>
<td>650</td>
<td>1.67</td>
<td>Half-Bridge, C3M MOSFETs</td>
</tr>
</tbody>
</table>
Welcome to SpeedFit Design Simulator, the industry’s most comprehensive system-level circuit simulator for Silicon Carbide power applications.

Accelerate the design process with simulation results you can trust. SpeedFit Design Simulator quickly calculates losses and estimates junction temperature for power devices based on lab data for common topologies ranging from simple buck and boost converters to a fully bi-directional totem pole PFC with resonant DC/DC converter.

Using SpeedFit Design Simulator, you can quickly determine:
- The right product for an application
- Comparative performance for different devices
- How the performance with varies $R_g$
- How many devices need to be paralleled

**Kickstart Your Design**

Choose your Application → Input Design Specifications → Input Design Specifications → Input Thermal Management Specs → Simulate

**Converter Type** (AC-DC, DC-DC, DC-AC)

**No. of AC phases** (1, 3)

Input voltage
Output voltage
Rated output power $S_o$
AC frequency $F_{ac}$
Switching frequency $F_{sw}$
Deadtime

Select Circuit Type
- Buck-boost converter
- LLC resonant converter
- Phase shift full bridge converter etc.

Select the device from recommended products list
Number of devices to be paralleled

Cooling System
- Thermal interface resistance $R_{th,ch}$
- Heatsink temperature $T_h$
- Thermal resistance $R_{th,ha}$
- Heatsink time constant $\tau_h$
- Additional heat source on heatsink $P_{add}$
- Ambient temperature $T_{amb}$

Comparative performance for different devices
Choose the right product for your application

Explore SpeedFit™ Design Simulator at WOLFSPEED.COM/SPEEDFIT
EVALUATION KITS

Wolfspeed understands that system designers want to perform characterization in their own labs when working with a new product. To help reduce design resource investment and enable fast characterization of our products, Wolfspeed offers a wide array of Evaluation Kits to help you better understand the capability of our Silicon Carbide discrete and module packages.

Wolfspeed partners with component manufacturers to provide our customers with access to the widest selection of and the latest system components. Our Partner Evaluation Kits are developed and supported by our partners in collaboration with Wolfspeed.

<table>
<thead>
<tr>
<th>Name*</th>
<th>Topology</th>
<th>Package</th>
<th>SKU</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpeedVal Kit™ Modular Evaluation Platform</td>
<td>Dynamic Characterization</td>
<td>TO-247-4, TO-263-7, TOLL</td>
<td>SpeedVal Kit</td>
</tr>
<tr>
<td>Evaluation Board For Paralleling 1200 V C3M™ Silicon Carbide MOSFETs in a 7-pin, (TO-263 Package)</td>
<td>DC to DC, Dynamic Characterization</td>
<td>TO-263-7</td>
<td>KIT-CRD-HB12N-J1</td>
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<td>Dynamic Performance Evaluation Board for the Wolfspeed WolfPACK Full-Bridge Module Platform</td>
<td>Dynamic Characterization</td>
<td>F platform</td>
<td>KIT-CRD-CIL12N-FMB</td>
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<tr>
<td>Dynamic Performance Evaluation Board for the Wolfspeed WolfPACK Full-Bridge Module Platform</td>
<td>Dynamic Characterization</td>
<td>F platform</td>
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<tr>
<td>Evaluation Tool for the XM3 Module Platform</td>
<td>AC to DC, Dynamic Characterization</td>
<td>X platform</td>
<td>KIT-CRD-CIL12N-XM3</td>
</tr>
</tbody>
</table>

*All of these Evaluation kits are designed by Wolfspeed

TO LEARN MORE, VISIT US AT WOLFSPEED.COM/POWER
STARTING POINT FOR ALL SILICON CARBIDE DESIGNS

The industry's most versatile modular Silicon Carbide evaluation platform provides customers with a flexible set of building blocks for in-circuit evaluation of Silicon Carbide system performance. Evaluate and optimize the high-speed dynamic switching performance of Wolfspeed Silicon Carbide MOSFETs paired with your choice of compatible gate drivers, optional control cards and accessories from other industry-leading partners.

Accelerating the transition to a final design with confidence, this evaluation platform supports a range of voltages, package types and power topologies for almost any power application. The base motherboard can be configured with a range of gate driver cards, control cards and accessories to support the entire design. Each functional block is proven and tested for customers to use as an effective starting point for their Silicon Carbide designs.

FEATURES

Multiple Configurations
- Quickly Swap Devices for Testing
- Verified Compatible Components
- Can Run The Half-Bridge Board in Buck or Boost Mode Up to 15 kW

BENEFITS

Comprehensive Design Kit
- Functional Blocks as Design Starting Points
- Flexible Platform for Quick Evaluation of Multiple Device Choices

USES

Switching Loss Measurement
- Gate Driver Evaluation
- Thermal Testing
- Buck/Boost Operation

Explore the Options

The platform consists of a motherboard, power daughter cards, partner gate driver cards and optional control cards, and accessories.

Components may be purchased separately or use the SpeedVal Kit Configurator to build your complete evaluation system.

TO LEARN MORE, VISIT US AT WOLFSPEED.COM/SPEEDVALKIT
GATE DRIVER BOARDS

Wolfspeed provides companion gate driver evaluation tools for its Silicon Carbide products to help you get up and running quickly. These evaluation tools help you learn best practices and give you a starting point for working with Wolfspeed’s Silicon Carbide. All design files available are complimentary, so that you can quickly understand and implement our designs into your end-system and modify as-needed to fit your specific design requirements.

<table>
<thead>
<tr>
<th>SKU</th>
<th>Package</th>
<th>Designed By</th>
<th>Gate Driver</th>
<th>Output Channels</th>
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<tbody>
<tr>
<td>CGD1200H2P-BM2</td>
<td>B Platform</td>
<td>Wolfspeed</td>
<td>Analog Devices® ADuM4135</td>
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<td>CGD1700H2P-XM3</td>
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<tr>
<td>UCC21750QDWEVM-054</td>
<td>SpeedVal Kit</td>
<td>Texas Instruments</td>
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<td>CGD1700HB2M-UNA /</td>
<td>SpeedVal Kit, F Platform,</td>
<td>Texas Instruments</td>
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<td>UCC21710QDWEVM-054</td>
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<td>Si823H-ACWA-KIT</td>
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<td>Analog Devices ADuM4135</td>
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<td>CGD1700HB2P-XM3</td>
<td>X Platform</td>
<td>Wolfspeed</td>
<td>ADuM4136</td>
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<tr>
<td>FRDMGD3160XM3EVM</td>
<td>X Platform</td>
<td>NXP</td>
<td>NXP® GD3160</td>
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</tbody>
</table>
SYSTEM SOLUTIONS

Reference Designs

Wolfspeed offers time-saving Reference Designs for some of the most in-demand Silicon Carbide devices in power systems – Inverters, power converters, chargers and many more. These Reference Designs come complete with application notes, user guides and design files to allow designers to create rugged and reliable systems with best-in-class power density, performance and efficiency.

Wolfspeed partners with experts in system integration to offer a wider selection of applications and power topologies built with the latest components. Our Partner Reference Designs are developed and supported by our partners in collaboration with Wolfspeed. Hardware Design Files, System and Mechanical Design Files, and Firmware are available with these reference designs.

Wide Input Voltage Range (300 VDC – 1200 VDC) 15 W Flyback Auxiliary Power Supply Board

**Topology:**
AC to DC, DC to DC

**Package:**
TO-263-7

**Specifications:**
- Demonstration of the efficient operation of Wolfspeed’s 1700 V, 1Ω Silicon Carbide MOSFET with an availability of high blocking voltage and high creepage distance (~7 mm)
- Wolfspeed’s 15 W flyback auxiliary power supply board can accept a wide range of AC or DC input voltage (480 VAC – 530 VAC) or (300 VDC—1200 VDC) and provide 12 VDC at the output with an exceptional efficiency of 85%
- Simple control approach has been utilized to reduce the overall complexity and cost of the system
- High-frequency operation of Wolfspeed’s 1700 V, 1Ω Silicon Carbide MOSFET helps in reducing form factor of the board significantly

2.2 kW High Efficiency (80 Plus® Titanium) Bridgeless Totem-Pole PFC with Silicon Carbide MOSFET

**Specifications:**
- Input voltage range: 47 - 63 Hz 180 - 264 V (rms)
- Output voltage 385 V nominal +/- 5%
- Output power: 2.2 kW at 230 V AC, 1.5 kW (limited by thermal) at 180 V AC
- Input power factor > 0.98 and input THD <5% (of fundamental) at full load
- Switching frequency: 64 kHz
- Efficiency at 50% load > 98.5%
- Max ambient operating temperature 50 °C
- Cooling: Forced air, 15 x 40 mm fan
- Topology: Totem-Pole PFC with diodes for low-frequency leg
- Power devices package: TO-247-3, TO-247-4, and TO-263-7

Highly efficient and low cost solution of 2.2 kW bridgeless totem-pole PFC topology based on Wolfspeed’s latest (C3M™) 650 V 60 mΩ Silicon Carbide MOSFETs. Comfortably achieve Titanium standard by having > 98.5% efficiency while THD < 4% under all load conditions.
**6.6 kW Bi-Directional EV On-Board Charger**

**Topology:**
AC to DC, DC to AC

**Package:**
TO-247-4

**Specifications:**
- Demonstration of 1000 V, 65 mΩ C3M™ Silicon Carbide MOSFET in a 6.6 kW Bi-Directional EV On-Board Charger

- 6.6 kW Bi-Directional EV On-Board Charger demo board consist of a Bi-Directional Totem-Pole PFC (AC/DC) stage and an Isolated Bi-Directional DC/DC stage based on CLLC topology with a variable DC Link Voltage
- Wolfspeed’s 6.6 kW Bi-Directional EV On-Board Charger demo board can accept 90 VAC-265 VAC as an input and provide 250 VDC-450 VDC at the output with > 96% of efficiency in both charging and inversion modes

**3.6 kW Bridgeless Totem-Pole PFC**

**Topology:**
AC to DC

**Package:**
TOLL, TO-247-3

CRD-03600AD065E-L

This reference design demonstrates the application of Wolfspeed’s C3M™ 650 V Silicon Carbide MOSFET Technology in TOLL (TO – Leadless) Package to create a 3.6 kW bridgeless totem-pole PFC for server power supply, data center power supply, mining power supply, and telecom systems.

**6.6 kW High Power Density Bi-Directional EV On-Board Charger**

**Topology:**
AC to DC, DC to AC

**Package:**
TO-247-4

CRD-06600FF065N-K

This reference design is offered as a comprehensive design package which can be used as a starting point for new Silicon Carbide designs.

The design accomplishes a peak efficiency of 96.5% and a power density of 53 W/in³ or 3 kW/L.

**Specifications:**
- Universal single phase input voltage: 90 V - 265 V AC
- Output voltage: 250 V - 450 V DC
- Output current in charging mode: 18 A
- AC/DC topology: CCM Totem-Pole PFC operating at 67 kHz
- DC/DC topology: Bi-directional CLLC resonant converter operating at 148 - 300 kHz
- Control modes: A combination of constant current, constant voltage and constant power mode
- Unique integrated heatsink design removes heat from MOSFETs, transformer and inductors
- CAN interface
**6.6 kW High Frequency DC-DC Converter**

**Topology:**
DC to DC

**Package:**
TO-247-3

CRD-06600DD065N

**Specifications:**
- Input voltage: 380 - 420 VDC
- Output voltage: 400 VDC
- Max current: 16.5 A
- Output power: 6.6 kW
- Switching frequency: 500 kHz - 1 MHz
- Closed loop control for regulated output
- Optional external PWM inputs for open loop testing

**20 kW Full Bridge LLC Resonant Converter Using 1 kV Silicon Carbide MOSFET**

**Topology:**
DC to DC

**Package:**
TO-247-4

CRD-20DD09P-2

**Specifications:**
- Input voltage: 650 - 750 VDC
- Output voltage: 300 - 550 VDC
- Switching frequency: 150 - 400 kHz
- Continuous output power: 20 kW
- Peak efficiency: > 98.4%
- Power density: 60 W/in$^3$

**22 kW Bi-directional High Efficiency Active Front End (AFE) Converter**

This reference design demonstrates the application of Wolfspeed’s 1200 V C3M™ Silicon Carbide MOSFETs to create a 22kW three phase bidirectional active front end (AFE) converter for electric vehicle (EV) on-board charger (OBC), off-board fast charging, and other industrial applications such as energy storage systems and three phase PFC power supplies.

**Topology:**
AC to DC

**Package:**
TO-247-4

CRD-22AD12N

**Specifications:**
- Switching frequency: 45 kHz
- Toolled heatsink to simulate cooling plate
- CAN interface

**PFC Mode**
- Maximum input current: 32 A

**Three Phase Input**
- Input voltage: 305 Vrms - 450 Vrms line-line, 50/60 Hz
- Output DC voltage: 650 V - 900 V
- Maximum power: 22 kW

**Single phase input**
- Input voltage: 180 Vrms - 264 Vrms, 50/60 Hz
- Output DC voltage: 380 V - 900 V
- Maximum power: 6.6 kW

**Inverter Mode**
- DC input voltage: 350 V - 760 V DC
- Maximum current: 20 A
- AC output voltage: 230 Vrms, 50 Hz single phase
- Maximum power: 6.6 kW
### 25 kW Silicon Carbide Active Front End (AFE)

**Topology:**
AC to DC

**Package:**
F Platform

**Specifications:**
- Three Phase input voltage between 400 and 480 VAC
- Output Voltage of 800 V DC/ 900 V Max
- Output Power: 25 kW with 480 VAC input and 20 kW with 400 VAC input
- Switching frequency of 100 Khz
- Controller board design and firmware example
- Auxiliary Circuitry Included for Safe Operation: Pre Charge Soft Start, Contactors, Fuses and EMI/EMC Filter
- Complete Stack up Including: Modules, Heatsink, Magnetics, Power PCBs, Gate Drivers, Voltage / Current Sensors, and Controller

The design demonstrates the application of Wolfspeed WolfPACK™ power modules to create a bidirectional high power density Active Front End (AFE) that can be applied to electric vehicle (EV) fast charging, industrial motor drives, power supplies and renewable energy applications.

### 22 kW Bi-directional High Efficiency DC/DC Converter

**Topology:**
DC to DC

**Package:**
TO-247-4

**Specifications:**
- Full bridge CLLC resonant converter operating at 135-250 kHz
- Tooled heatsink to simulate cooling plate
- CAN interface

**Charging Mode**
- Input voltage: 380 V - 900 V DC
- Output voltage: 480 V - 800 V DC Nominal
- System capable of 200 V - 800 V DC
- At Vin = 650 V - 900 V DC, output power: 22 kW, output current: 36 A
- At Vin = 380 V - 900 V DC, output power: 6.6 kW, output current: 26.4 A

**Discharging Mode**
- Input voltage: 300 V - 800 V DC
- Output voltage: 360 V - 750 V DC Nominal
- Output power: 6.6 kW
- Output current: 19 A

The design accomplishes a peak efficiency of 98.5% in both charging and discharging mode and a power density of 8 kW/L. This reference design is offered as a comprehensive design package which can be used as a starting point for new Silicon Carbide designs.

### 30 kW Discrete Interleaved LLC DC-DC Converter

**Topology:**
DC to DC

**Package:**
TO-247-4, TO-220-2, TO 247-3

**Specifications:**
- Output Voltage  200 V – 1000 V
- Power Density of 6.5 kW/L
- Peak Efficiencies over 98.3%
- Adaptive Control 130 kHz – 250 kHz Switching Frequency
- Series Output Configuration
  - Input Voltage: 650 V - 850 V DC
  - Output Voltage: 500 V - 1000 V DC, 50 A max, 30 kW max
- Parallel Output Configuration
  - Input Voltage: 650 V - 850 V DC
  - Output Voltage: 200 V - 250 V DC, 66 A max
  - 250 V - 500 V DC, 100 A max, 30 kW max

This reference design targets high-power-density, high-efficiency fast charger applications and features Wolfspeed’s discrete 1200 V C3M Silicon Carbide MOSFETs and 650 V C6D Silicon Carbide Schottky Diodes. A 3-phase interleaved LLC topology is implemented to provide low input current ripple and high efficiency for EV high power fast charger.
**60 kW Interleaved Boost Converter**

**Topology:**
DC to DC

**Package:**
TO-247-4
CRD-60DD12N

**Specifications:**
- Demonstration of new 1200 V, 75 mΩ C3M Silicon Carbide MOSFET and its parallel operation in a 60 kW Interleaved Boost Converter

**300 kW, 250 kW & 200 kW Three-Phase Inverter**

**Topology:**
AC to DC, DC to AC

**Package:**
X Platform
CRD200DA12E-XM3
CRD250DA12E-XM3
CRD300DA12E-XM3

**Specifications:**
- 800 VDC bus nominal (900 V max)
- 360/300/240 A_{rms} output
- 80 kHz maximum switching frequency
- 300 µF DC link capacitance
- Liquid cooled cold plate
- CAN Interface

**600 kW High Performance Dual Three-Phase Inverter**

**Topology:**
AC to DC, DC to AC

**Package:**
X Platform
CRD600DA12E-XM3

**Specifications:**
- DC Bus voltage: 800 V nominal, 900 V maximum
- Switching frequency: 80 kHz maximum
- DC Link capacitance: 600 µF
- Double-sided liquid cold plate
- CAN interface
- Single Bridge Operation: 360 A_{rms} output current
- Parallel Bridge Operation: -720 A_{rms} output current

Optimized for Wolfspeed’s all Silicon Carbide, Low Inductance, Conduction Optimized XM3 Power Module. Complete Stackup, including: Modules, Cooling, Bussing, Gate Drivers, Voltage / Current Sensors, and Controller.

- 60 kW Interleaved Boost Converter demo board is based on four 15 kW Interleaved Boost Stages and each stage is using Wolfspeed’s C3M™ CGD15SG00D2 isolated Gate Driver Board
- Wolfspeed’s 60 kW Interleaved Boost Converter demo board can accept 470 VDC - 800 VDC as an input and provide 850 VDC at the output with a peak efficiency of 99.5% and a power density of 127W/in³
NOBODY KNOWS SILICON CARBIDE POWER DEVICES LIKE WOLFSPEED.
WE’RE GLAD TO SHARE WHAT WE KNOW, AND WE LOVE TALKING ABOUT THIS STUFF.
VISIT WOLFSPEED.COM TO CONNECT WITH THE SILICON CARBIDE EXPERTS.