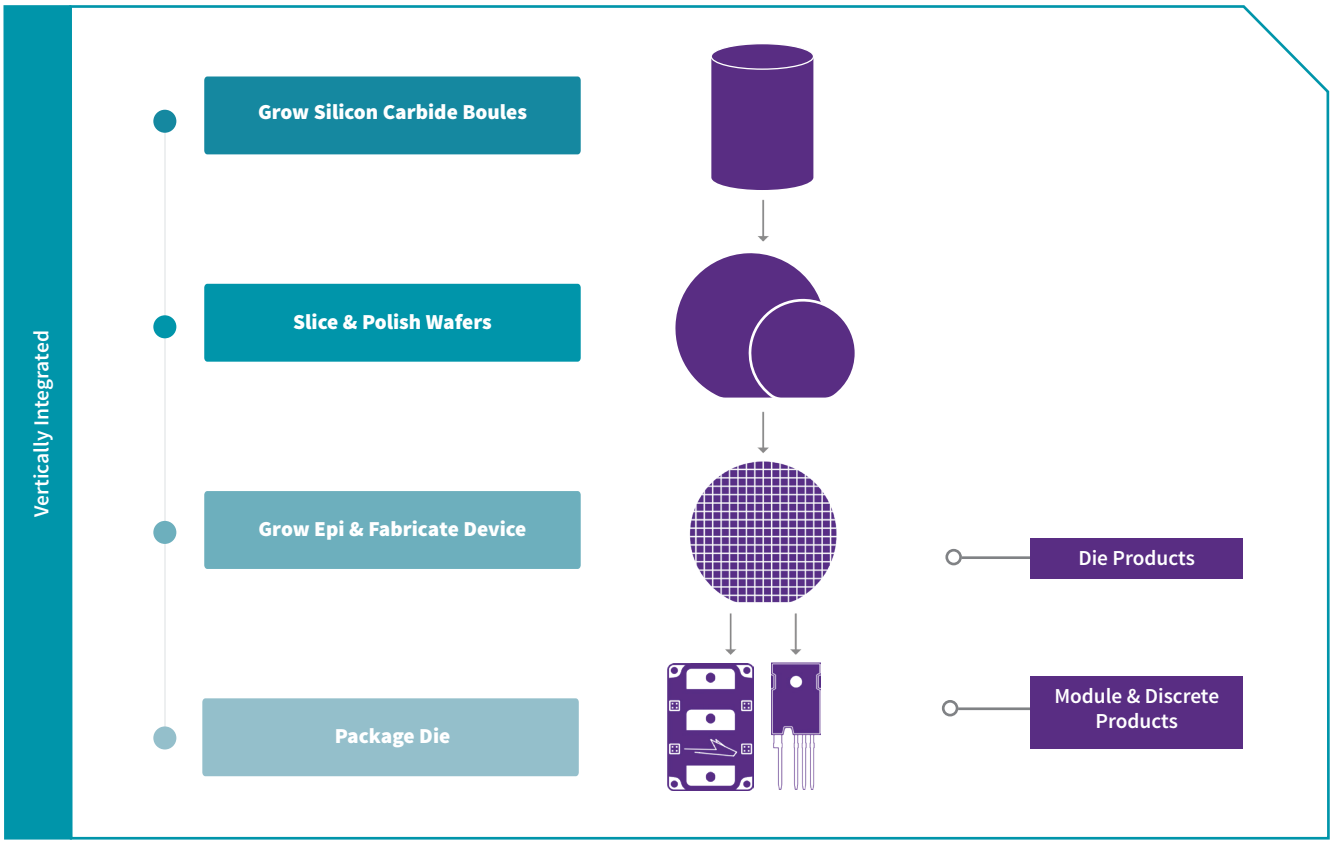
POWER CATALOG

Wolfspeed®

POWER PRODUCTS

Transforming Power with
INDUSTRY-LEADING SILICON CARBIDE EXPERTISE & CAPACITY

WOLFSPEED IS YOUR TRUSTED VERTICALLY-INTEGRATED SILICON CARBIDE MANUFACTURER



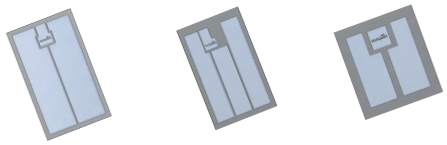
WE UNLEASH THE POWER OF POSSIBILITIES THROUGH HARD WORK, COLLABORATION AND A PASSION FOR INNOVATION

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.

Wolfspeed was the first to commercialize the Silicon Carbide MOSFET. 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.

WOLFSPEED

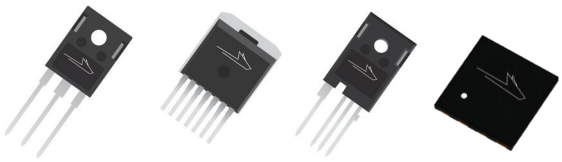
BECAUSE WE INNOVATE AT EVERY STAGE, WE'RE ABLE TO DO THINGS OTHER COMPANIES CAN'T



Pages 4-6

POWER BARE DIE PRODUCTS

MOSFET and Schottky diode devices in die form for customers with internal semiconductor packaging capability



Pages 7-15

DISCRETE POWER DEVICES

Discrete devices for broad applications across automotive, industrial and energy

Pages 16-21

POWER MODULES

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

OUR STRENGTHS

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

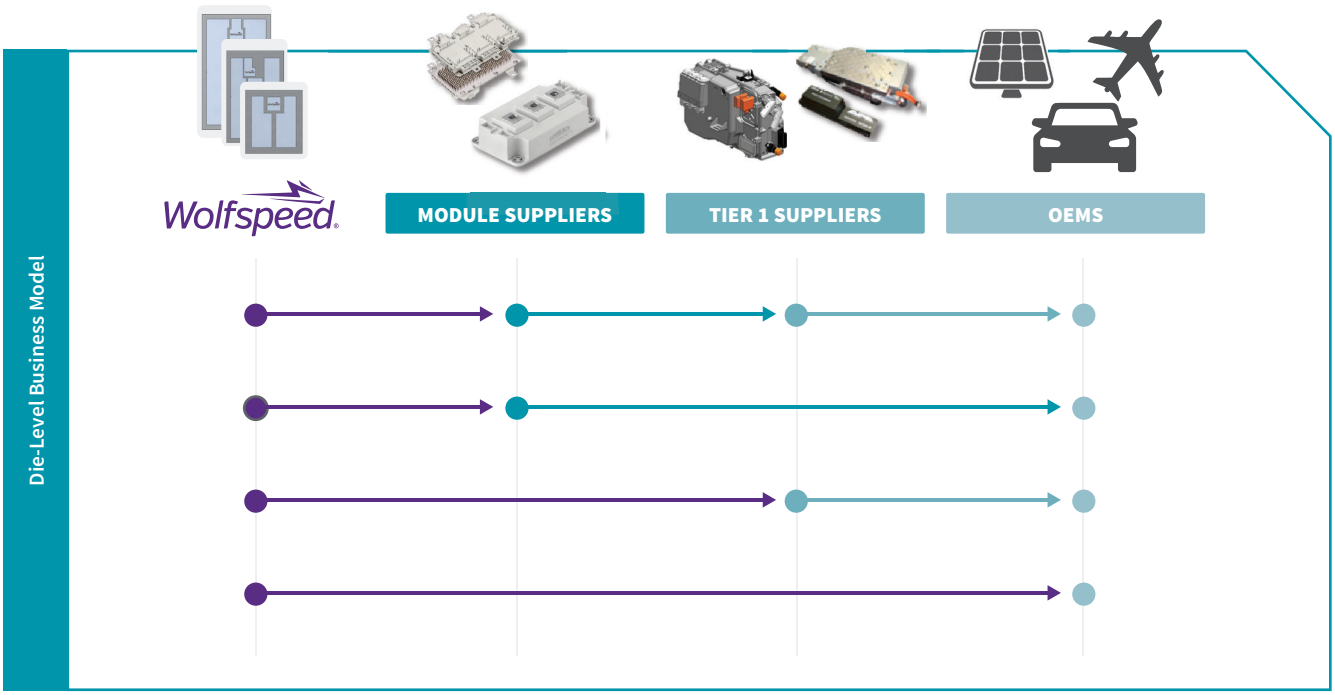
UTILIZE RAPID LEARNING CYCLES
TO CREATE DEVICES AND DRIVE SIGNIFICANT IMPROVEMENTS IN QUALITY AND MANUFACTURING

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 twelve 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

BARE DIE SILICON CARBIDE MOSFETs

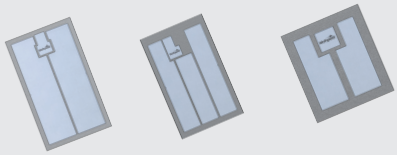
BROAD PORTFOLIO OF SILICON CARBIDE BARE DIE MOSFETS FOR EFFICIENCY

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

	Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating (A)
Power Die Industrial Products	CPM3-0650-0015A	650	15	120
	CPM3-0650-0045A	650	45	49
	CPM3-0650-0060A	650	60	37
	CPM3-0900-0010A	900	10	194
	CPM3-0900-0030A	900	30	66
	CPM3-0900-0065A	900	65	32
	CPM3-1200-0013A	1200	13	149
	CPM3-1200-0016A	1200	16	112
	CPM3-1200-0021A	1200	21	100
	CPM3-1200-0032A	1200	32	63
	CPM3-1200-0075A	1200	75	30
	CPM3-1200-0160A	1200	160	17
	CPM3-1700-R020E	1700	20	120
	CPM3-3300-R050A	3300	52	52

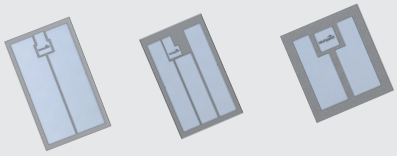
	Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating (A)
Power Die Automotive products	EPM3-0750-0010D	750	10	178
	EPM3-1200-R013D	1200	13	160
	EPM3-1200-0014D1	1200	14	149
	EPM3-1200-R015D	1200	15	148
	EPM3-1200-0017D	1200	17	134
	EPM3-1200-0017D1	1200	17	134

BARE DIE SILICON CARBIDE SCHOTTKY DIODES

WOLFSPEED® SILICON CARBIDE BARE DIE SCHOTTKY DIODES OFFER PROVEN RELIABILITY

Wolfspeed has the broadest portfolio of Silicon Carbide Schottky diodes, with more than twelve 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

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 Die Industrial Products

Part Number	Blocking Voltage (V)	Current Rating (A)	Total Capacitive Charge ($Q_{C\ (typ)}$)
CPW2-0650-S006B	650	6	15 nC
CPW2-0650-S008B	650	8	20 nC
CPW2-0650-S010B	650	10	24 nC
CPW2-0650-S012B	650	12	34 nC
CPW2-0650-S016B	650	16	44.5 nC
CPW4-1200-S002B	1200	2	11 nC
CPW4-1200-S005B	1200	5	27 nC
CPW4-1200-S008B	1200	8	37 nC
CPW4-1200-S010B	1200	10	52 nC
CPW4-1200-S015B	1200	15	77.5 nC
CPW4-1200-S020B	1200	20	99 nC
CPW6-1200-Z050A	1200	50	279 nC
CPW6-1700-Z005A	1700	5	79 nC
CPW6-1700-Z010A	1700	10	126 nC
CPW6-1700-Z025A	1700	25	325 nC
CPW6-1700-Z050A	1700	50	479 nC

Power Die Automotive products

Part Number	Blocking Voltage (V)	Current Rating (A)	Total Capacitive Charge ($Q_{C\ (typ)}$)
EPW4-1200-S010A	1200	10	56 nC
EPW4-1200-S020A	1200	20	99 nC

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® DISCRETE POWER | PACKAGE GUIDE

MOSFETs

D	K	K1	J	J1	J2	L	P
							
TO-247-3 Std. Package	**TO-247-4** Kelvin Lead	**TO-247-4 LP** Kelvin Lead Low Profile *coming soon*	**TO-263-7** Small Drain Footprint	**TO-263-7 XL** Larger Drain Footprint	**TO-263-7 XL** Automotive Qualified	**TOLL** TO-Lead Less	**TO-247-4 PLUS** Kelvin Lead

Schottky Diodes

A	D	D1	E	F	G	H	I	Q
								
TO-220-2 Std. Package	**TO-247-3** Dual Die	**TO-247-3** Single Die	**TO-252-2** Smaller Footprint	**TO-220-2-F2** No Back Metal	**TO-263-2** Better Thermals	**TO-247-2** More Creepage	**TO-220-2-ISO** Isolated Metal Tab	**QFN 8x8** Smallest Footprint

WOLFSPEED® DISCRETE POWER | DEVICE NOMENCLATURE GUIDE

Example: C3M0060065D

C	3	M	0060	065	D
-	-	-	----	---	--

MOSFETs

Qualification Grade	Product Series	Device Type	Typ Rdson @ 25C	Voltage Rating	Package
C = Industrial E = Automotive	2 3 ...	M = MOSFET	Ex = 0060 = 60 mΩ	Ex = 065 = 650 V	D = TO-247-3 K1 = TO-247-4-LP K = TO-247-4 J = TO-263-7 J1 = TO-263-7-XL L = TOLL P = TO-247-4-PLUS

Example: E4D20120D

E	4	D	20	120	D
-	-	-	----	---	--

Schottky Diodes

Qualification Grade	Product Series	Device Type	Current Rating	Voltage Rating	Package
C = Industrial E = Automotive	2 3 4 ...	D = Diode	Ex = 20 = 20 A	Ex = 120 = 1200 V	A = TO-220-2 D = TO-247-3 D1 = TO-247-3 E = TO-252-2 F = TO-220-2-F2 G = TO-263-2 H = TO-247-2 I = TO-220-2-ISO Q = QFN 8X8

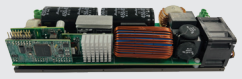
650 V SILICON CARBIDE MOSFETs

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

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.

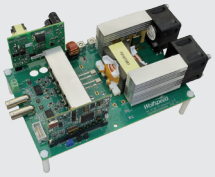
The 650 V MOSFET product family is ideal for applications including high performance industrial power supplies, server/telecom power, electric vehicle charging systems, energy storage systems, uninterruptible power supplies, and battery management systems.

FEATURED DESIGN TOOLS



3.6 kW Bridgeless Totem-Pole PFC

CRD-03600AD065E-L

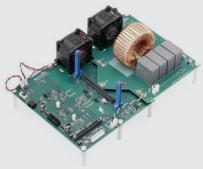


6.6 kW High Frequency DC-DC Converter

CRD-06600DD065N

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

CRD-06600FF065N-K



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°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

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

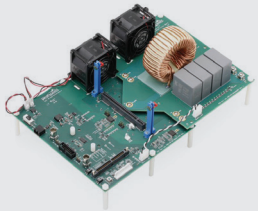
Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
C3M0015065D	650	15 mΩ	120	TO-247-3
C3M0015065K	650	15 mΩ	120	TO-247-4
C3M0025065D	650	25 mΩ	97	TO-247-3
C3M0025065J1	650	25 mΩ	80	TO-263-7
C3M0025065K	650	25 mΩ	97	TO-247-4
C3M0025065L	650	25 mΩ	77	TOLL
C3M0045065D	650	45 mΩ	49	TO-247-3
C3M0045065J1	650	45 mΩ	47	TO-263-7
C3M0045065K	650	45 mΩ	49	TO-247-4
E3M0045065K	650	45 mΩ	46	TO-247-4
C3M0045065L	650	45 mΩ	49	TOLL
C3M0060065D	650	60 mΩ	29	TO-247-3
E3M0060065D	650	60 mΩ	37	TO-247-3
C3M0060065J	650	60 mΩ	36	TO-263-7
C3M0060065L	650	60 mΩ	39	TOLL
C3M0060065K	650	60 mΩ	37	TO-247-4
E3M0060065K	650	60 mΩ	37	TO-247-4
C3M0120065D	650	120 mΩ	22	TO-247-3
C3M0120065J	650	120 mΩ	21	TO-263-7
C3M0120065K	650	120 mΩ	22	TO-247-4
C3M0120065L	650	120 mΩ	21	TOLL

900 V SILICON CARBIDE MOSFETs

WOLFSPEED® SILICON CARBIDE SOLUTIONS FOR **FAST SWITCHING POWER DEVICES**

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 (~8 mm). 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.

FEATURED DESIGN TOOLS



SpeedVal Kit™ Modular Evaluation Platform

SpeedVal Kit

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

Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
C3M0030090K	900	30 mΩ	63	TO-247-4
C3M0065090D	900	65 mΩ	36	TO-247-3
C3M0065090J	900	65 mΩ	35	TO-263-7
C3M0120090D	900	120 mΩ	23	TO-247-3
C3M0120090J	900	120 mΩ	22	TO-263-7
E3M0120090J	900	120 mΩ	22	TO-263-7
C3M0280090D	900	280 mΩ	11.5	TO-247-3
C3M0280090J	900	280 mΩ	11.5	TO-263-7

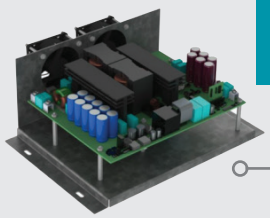
1000 V SILICON CARBIDE MOSFETs

WOLFSPEED® SILICON CARBIDE SOLUTIONS FOR **FAST SWITCHING POWER DEVICES**

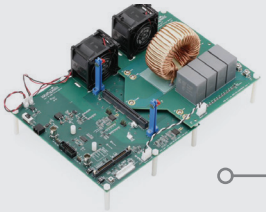
The 1000 V Silicon Carbide MOSFETs address many power design challenges by providing a unique device with low on-resistance, very low output capacitance, and low source inductance for a perfect blend of low switching losses and low conduction losses.

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.

FEATURED DESIGN TOOLS



20 kW FULL BRIDGE LLC RESONANT CONVERTER
CRD-20DD09P-2



SpeedVal Kit™ Modular Evaluation Platform
SpeedVal Kit

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

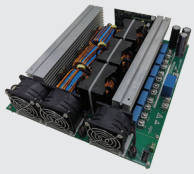
Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
C3M0065100J	1000	65 mΩ	35	TO-263-7
C3M0065100K	1000	65 mΩ	35	TO-247-4
C3M0120100J	1000	120 mΩ	22	TO-263-7
C3M0120100K	1000	120 mΩ	22	TO-247-4

1200 V SILICON CARBIDE MOSFETs

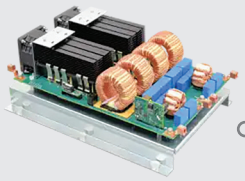
BROADEST PORTFLIO OF **1200 V SILICON CARBIDE MOSFETS FOR EFFICIENCY**

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



30 kW DISCRETE INTERLEAVED LLC DC-DC CONVERTER
CRD30DD12N-K



60 kW INTERLEAVED BOOST CONVERTER
CRD-60DD12N

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

Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
C3M0016120D	1200	16 mΩ	115	TO-247-3
C3M0016120K	1200	16 mΩ	115	TO-247-4
E3M0016120K	1200	16 mΩ	125	TO-247-4
C3M0021120D	1200	21 mΩ	100	TO-247-3
C3M0021120K	1200	21 mΩ	100	TO-247-4
E3M0021120K	1200	21 mΩ	104	TO-247-4
C3M0032120D	1200	32 mΩ	63	TO-247-3
C3M0032120J1	1200	32 mΩ	68	TO-263-7
C3M0032120K	1200	32 mΩ	63	TO-247-4
E3M0032120K	1200	32 mΩ	67	TO-247-4
C3M0040120D	1200	40 mΩ	66	TO-247-3
C3M0040120K	1200	40 mΩ	66	TO-247-4
C3M0040120J1	1200	40 mΩ	64	TO-263-7
E3M0040120K	1200	40 mΩ	57	TO-247-4
C3M0075120D-A	1200	75 mΩ	32	TO-247-3
C3M0075120K	1200	75 mΩ	32	TO-247-4
C3M0075120K-A	1200	75 mΩ	32	TO-247-4
C3M0075120D	1200	75 mΩ	30	TO-247-3
C3M0075120J	1200	75 mΩ	30	TO-263-7
E3M0075120D	1200	75 mΩ	30	TO-247-3
E3M0075120K	1200	75 mΩ	30	TO-247-4
C3M0160120D	1200	160 mΩ	17	TO-247-3
C3M0160120J	1200	160 mΩ	17	TO-263-7
E3M0160120D	1200	160 mΩ	17	TO-247-3
E3M0160120K	1200	160 mΩ	17	TO-247-4
C3M0350120D	1200	350 mΩ	7.6	TO-247-3
C3M0350120J	1200	350 mΩ	7.2	TO-263-7

1700 V SILICON CARBIDE MOSFETs

FASTER SWITCHING, ENHANCED RELIABILITY FOR **SUPERIOR POWER CONVERSION**

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.

FEATURED DESIGN TOOLS

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

FEATURES

- High Blocking Voltage with Low $R_{DS(ON)}$
- High Speed Switching with Low Capacitances
- Fast Intrinsic Diode with Low Reverse Recovery (Q_{rr})
- Low Parasitic Inductance
- ~8 mm 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

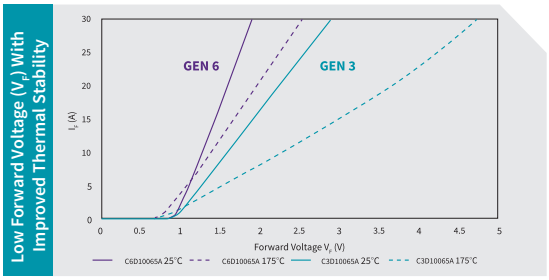
- Auxiliary Power Supplies
- Switch Mode Power Supplies
- Power Inverters
- 1500 V Solar Inverters
- High Voltage DC-DC Converters
- Motor Drives
- Pulsed Power Applications

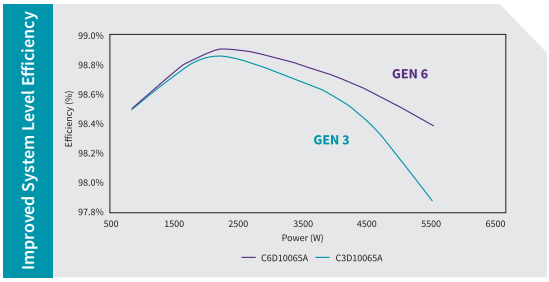
Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
C2M0045170D	1700	45 mΩ	72	TO-247-3
C2M0045170P	1700	45 mΩ	72	TO-247-4 Plus
C2M1000170D	1700	1000 mΩ	5	TO-247-3
C2M1000170J	1700	1000 mΩ	5.3	TO-263-7

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 (25 °C) = 1.27 V & V_F (175 °C) = 1.5 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 °C) = 1.27 V & (175 °C) = 1.5 V
- Positive Temperature Co-efficient
- Zero Reverse Recovery
- Robust MPS Technology
- Low Figure of Merit (Q_C x V_F)
- Wide Range of T_J (-55°C to 175°C)

BENEFITS

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

APPLICATIONS

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

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
C6D16065D	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

System Specs

SILICON CARBIDE SCHOTTKY DIODES

Wolfspeed Silicon Carbide diodes make efficient systems cost effective through a diverse portfolio of different power ranges and package footprints to fit all applications.

	Part Number	Blocking Voltage (V)	Current Rating (A)	Package
600 V DISCRETE	CSD01060A	600	1	TO-220-2
	CSD01060E	600	1	TO-252-2
	C3D02060A	600	2	TO-220-2
	C3D02060E	600	2	TO-252-2
	C3D02060F	600	2	TO-220-F2
	C3D03060A	600	3	TO-220-2
	C3D03060E	600	3	TO-252-2
	C3D03060F	600	3	TO-220-F2
	C3D04060A	600	4	TO-220-2
	C3D04060E	600	4	TO-252-2
	C3D04060F	600	4	TO-220-F2
	C3D06060A	600	6	TO-220-2
	C3D06060F	600	6	TO-220-F2
	C3D06060G	600	6	TO-263-2
	C3D08060A	600	8	TO-220-2
	C3D08060G	600	8	TO-263-2
	C3D10060A	600	10	TO-220-2
	C3D10060G	600	10	TO-263-2
	C3D16060D	600	16	TO-247-3
	C3D20060D	600	20	TO-247-3
650 V DISCRETE	C3D02065E	650	2	TO-252-2
	C3D03065E	650	3	TO-252-2
	C3D04065A	650	4	TO-220-2
	C3D04065E	650	4	TO-252-2
	C6D04065A	650	4	TO-220-2
	C6D04065E	650	4	TO-252-2
	C3D06065A	650	6	TO-220-2
	C3D06065E	650	6	TO-252-2
	C3D06065I	650	6	TO-220 Iso
	C6D06065A	650	6	TO-220-2
	C6D06065E	650	6	TO-252-2
	C6D06065G	650	6	TO-263-2
	C6D06065Q	650	6	QFN 8x8
	C3D08065A	650	8	TO-220-2
	C3D08065E	650	8	TO-252-2
	C3D08065I	650	8	TO-220 Iso
	C6D08065A	650	8	TO-220-2
	C6D08065E	650	8	TO-252-2
	C6D08065G	650	8	TO-263-2
	C6D08065Q	650	8	QFN 8x8
	C3D10065A	650	10	TO-220-2
	C3D10065E	650	10	TO-252-2

*Coming Soon

	Part Number	Blocking Voltage (V)	Current Rating (A)	Package
650 V DISCRETE	C3D10065I	650	10	TO-220 Iso
	C6D10065A	650	10	TO-220-2
	C6D10065E	650	10	TO-252-2
	C6D10065G	650	10	TO-263-2
	C6D10065Q	650	10	QFN 8x8
	C3D12065A	650	12	TO-220-2
	C3D16065D1	650	16	TO-247-3
	C3D16065A	650	16	TO-220-2
	C3D16065D	650	16	TO-247-3
	C6D16065D	650	16	TO-247-3
	C3D20065D	650	20	TO-247-3
	C6D20065A	650	20	TO-220-2
	C6D20065G*	650	20	TO-263-2
	C6D20065H*	650	20	TO-247-2
	C6D20065D	650	20	TO-247-3
	C6D20065D1*	650	20	TO-247-3
	C3D30065D	650	30	TO-247-3
1200 V DISCRETE	C4D02120A	1200	2	TO-220-2
	C4D02120E	1200	2	TO-252-2
	C4D05120A	1200	5	TO-220-2
	C4D05120E	1200	5	TO-252-2
	C4D08120A	1200	8	TO-220-2
	C4D08120E	1200	8	TO-252-2
	C4D10120A	1200	10	TO-220-2
	C4D10120D	1200	10	TO-247-3
	C4D10120E	1200	10	TO-252-2
	C4D10120H	1200	10	TO-247-2
	C4D15120A	1200	15	TO-220-2
	C4D15120D	1200	15	TO-247-3
	C4D15120H	1200	15	TO-247-2
	C4D20120A	1200	20	TO-220-2
	C4D20120D	1200	20	TO-247-3
	C4D20120H	1200	20	TO-247-2
	C4D30120D	1200	30	TO-247-3
	C4D30120H	1200	30	TO-247-2
	C4D40120D	1200	40	TO-247-3
	C4D40120H	1200	40	TO-247-2
1700 V DISCRETE	C6D05170H	1700	5	TO-247-2
	C6D10170H	1700	10	TO-247-2
	C6D25170H	1700	25	TO-247-2
E-SERIES	E3D08065G	650	8	TO-263-2
	E3D20065D	650	20	TO-247-3
	E3D30065D	650	30	TO-247-3
	E4D02120E	1200	2	TO-252-2
	E4D10120A	1200	10	TO-220-2
	E4D20120A	1200	20	TO-220-2
	E4D20120D	1200	20	TO-247-3
	E4D20120G	1200	20	TO-263-2

E-SERIES™ AUTOMOTIVE SILICON CARBIDE PRODUCTS

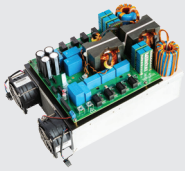
AUTOMOTIVE-QUALIFIED SILICON CARBIDE PRODUCTS

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

22 kW High Efficient Bi-directional AFE

CRD-22AD12N



22 kW Bi-directional High Efficiency DC/DC Converter

CRD-22DD12N

6.6 kW High Power Density Bi-directional EV ON-Board Charger

CRD-06600FF065N-K

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

- Electric Vehicle Battery Charging
- High Voltage DC-DC Converters
- Auxiliary Power Supplies
- Fuel Cell Vehicle Converters
- Traction Inverters

SCHOTTKY DIODES

Part Number	Blocking Voltage (V)	Current Rating at 25°C (A)	Package
E3D08065G	650	8	TO-263-2
E3D20065D	650	20	TO-247-3
E3D30065D	650	30	TO-247-3
E4D02120E	1200	2	TO-252-2
E4D10120A	1200	10	TO-220-2
E4D20120A	1200	20	TO-220-2
E4D20120D	1200	20	TO-247-3
E4D20120G	1200	20	TO-263-2

MOSFETs

Part Number	Blocking Voltage (V)	$R_{DS(ON)}$ at 25°C	Current Rating at 25°C (A)	Package
E3M0045065K	650	45mΩ	46	TO-247-4
E3M0060065D	650	60 mΩ	37	T0-247-3
E3M0060065K	650	60 mΩ	37	TO-247-4
E3M0120090J	900	120 mΩ	22	TO-263-7
E3M0016120K	1200	16 mΩ	125	TO-247-4
E3M0021120K	1200	21 mΩ	104	TO-247-4
E3M0032120K	1200	32 mΩ	67	TO-247-4
E3M0040120K	1200	40 mΩ	57	TO-247-4
E3M0075120D	1200	75 mΩ	32	TO-247-3
E3M0075120K	1200	75 mΩ	32	TO-247-4
E3M0160120K	1200	160 mΩ	17	TO-247-4

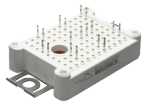
WOLFSPEED IS SERIOUS ABOUT POWER MODULES

Providing the most extensive lineup of modules to date, serving industrial, harsh environment, and mobility markets

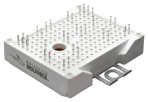
Wolfspeed's vertical integration (from Silicon Carbide material to packaging) enables us to provide leading Silicon Carbide technology throughout the supply chain. Our power modules are designed to meet each customer's system design requirements with a package that offers best-in-class Silicon Carbide performance. We offer two distinct product categories to serve different customer value propositions: Industry-Standard Footprints and Optimized Footprints.

Industry-Standard Footprints

Wolfspeed WolfPACK™

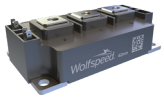


F platform (33.8 mm)



G platform (56.7 mm)

B platform (62 mm)



Optimized Footprint

X platform (53 mm)

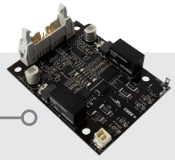
H platform
(High performance 62 mm)

INDUSTRY-STANDARD FOOTPRINTS

Well-established footprints / packages that have been internally optimized for Silicon Carbide and provide a straight-forward 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.



CGD1200HBP-BM2
CGD1200HBP-BM3

CGD1700HB2P-XM3

MODULE GATE DRIVER BOARDS

COMPANION GATE DRIVERS

SKU	Package	Designed By	Working Voltage	Gate Driver	Output Channels
CGD12HBXMP	X Platform	Wolfspeed	1000 V	Analog Devices® ADuM4135	2
CGD1200HB2P-BM2	B Platform	Wolfspeed	1000 V	Analog Devices ADuM4135	2
CGD1200HB2P-BM3	B Platform	Wolfspeed	1000 V	Analog Devices ADuM4135	2
UCC5880QEVM-057	X Platform	Partner	1200 V	Texas Instruments® UCC5880Q1	2
UCC5880INVERTEREVM	X Platform	Partner	1200 V	Texas Instruments® UCC5880-Q1	2
CGD1700HB2M-UNA	F Platform, G Platform	Wolfspeed	1500 V	Texas Instruments® UCC21710	2
FRDMGD3160XM3EVM	X Platform	Partner	1500 V	NXP® GD3160	2
EVAL-ADUM4146WHB1Z	F Platform, G Platform	Partner	1500 V	Analog Devices ADuM4146	2
Si823H-AxWA-KIT	F Platform, G Platform	Partner	1500 V	Skyworks® Si823Hx	2
CGD1700HB3P-HM3	H Platform	Wolfspeed	1500 V	IXDD614YY	2
ACPL-355JC	F Platform, G Platform	Partner	1500 V	Broadcom®, ACPL-355JC	2
CGD1700HB2P-BM3	B Platform	Wolfspeed	1500 V	Analog Devices ADuM4146	2
CGD1700HB2P-XM3	X Platform	Wolfspeed	1500 V	Analog Devices ADuM4146	2

WOLFSPEED® MODULES

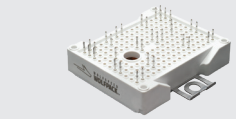
	Part Number	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ (mΩ) at 25°C	Description
G PLATFORM std. 56.7 mm	CCB016M12GM3T	1200	50	16	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB016M12GM3	1200	50	16	Six-Pack, Al_2O_3 Substrate
	CAB011A12GM3T	1200	141	11	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB011A12GM3	1200	141	11	Half-Bridge, AlN Substrate
	CAB008M12GM3T	1200	146	8	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB008M12GM3	1200	146	8	Half-Bridge, Al_20_3 Substrate
	CAB008A12GM3T	1200	194	8	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB008A12GM3	1200	194	8	Half-Bridge, AlN Substrate
	CAB006A12GM3T	1200	200	6	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB006A12GM3	1200	200	6	Half-Bridge, AlN Substrate
	CAB006M12GM3T	1200	200	6	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB006M12GM3	1200	200	6	Half-Bridge, Al_20_3 Substrate
F PLATFORM std. 33.8 mm	CBB032M12FM3T	1200	39	32	Full Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CBB032M12FM3	1200	39	32	Full Bridge, Al_2O_3 Substrate
	CCB032M12FM3T	1200	30	32	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB032M12FM3	1200	30	32	Six-Pack, Al_20_3 Substrate
	CBB021M12FM3T	1200	50	21	Full Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CBB021M12FM3	1200	50	21	Full Bridge, Al_2O_3 Substrate
	CCB021M12FM3T	1200	30	21	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB021M12FM3	1200	30	21	Six-Pack, Al_20_3 Substrate
	CAB016M12FM3T	1200	78	16	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB016M12FM3	1200	78	16	Half-Bridge, Al_20_3 Substrate
	CAB011M12FM3T	1200	105	11	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB011M12FM3	1200	105	11	Half-Bridge, Al_20_3 Substrate
B PLATFORM standard 62 mm	CAS175M12BM3	1200	175	8	Half-Bridge, C3M™ MOSFETs + Schottky Diodes
	HAS175M12BM3*	1200	175	8	Half-Bridge, Harsh Environment, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	WAS175M12BM3	1200	175	8	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	WAB300M12BM3	1200	300	4.5	Half-Bridge, THB-80 Qualified, C3M MOSFETs
	CAS350M12BM3	1200	350	4	Half-Bridge, C3M MOSFETs + Schottky Diodes
	HAS350M12BM3*	1200	350	4	Half-Bridge, Harsh Environment, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	WAS350M12BM3	1200	350	4	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	WAB400M12BM3	1200	400	3.7	Half-Bridge, THB-80 Qualified, C3M Conduction-Optimized MOSFETs
	HAS530M12BM3*	1200	530	2.7	Half-Bridge, Harsh Environment, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	CAB530M12BM3	1200	530	2.7	Half-Bridge, C3M MOSFETs
	CAS530M12BM3	1200	530	2.7	Half-Bridge, C3M MOSFETs + Schottky Diodes
	WAS530M12BM3	1200	530	2.7	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	CAS310M17BM3	1700	310	5	Half-Bridge, C3M MOSFETs + Schottky Diodes
	HAS310M17BM3*	1700	310	5	Half-Bridge, Harsh Environment, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	WAS310M17BM3	1700	310	5	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
X PLATFORM optimized 53 mm	CAB400M12XM3	1200	400	4	Half-Bridge, C3M MOSFETs
	CAB425M12XM3	1200	425	3.2	Half-Bridge, C3M MOSFETs
	CAB450M12XM3	1200	450	2.6	Half-Bridge, C3M Conduction-Optimized MOSFETs
	EAB450M12XM3	1200	450	2.6	Automotive grade, Half-Bridge, C3M Conduction-Optimized MOSFETs
	CAB320M17XM3	1700	320	4	Half-Bridge, C3M MOSFETs
H PLATFORM optimized 62 mm	CAS480M12HM3	1200	480	2.29	Half-Bridge, C3M MOSFETs + Schottky Diodes
	CAR600M12HN6	1200	600	N/A	Half-Bridge Rectifier, Gen 6 Schottky Diodes
	CAB760M12HM3	1200	765	1.33	Half-Bridge, C3M MOSFETs
	CAB760M12HM3R	1200	760	1.33	Half-Bridge Right GK for Paralleling, C3M MOSFETs
	CAS380M17HM3	1700	380	3.3	Half-Bridge, C3M MOSFETs + Schottky Diodes
	CAB500M17HM3	1700	500	2.5	Half-Bridge, C3M MOSFETs
	CAR600M17HN6	1700	600	N/A	Half-Bridge Rectifier, Gen 6 Schottky Diodes
	CAB650M17HM3	1700	650	1.67	Half-Bridge, C3M MOSFETs

*Coming Soon

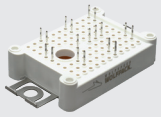
Wolfspeed WolfPACK™ F & G MODULE PLATFORMS

DELIVERING THE INDUSTRY'S HIGHEST POWER DENSITY IN ITS CLASS
FOR UNSURPASSED EFFICIENCY

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.



GM3



FM3

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 with Pre-Applied TIM

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
- Solar
- Wind Energy
- Renewable Energy Storage

	Part Number	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ (mΩ) at 25°C	Description
G PLATFORM standard 56.7 mm	CCB016M12GM3T	1200	50	16	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB016M12GM3	1200	50	16	Six-Pack, Al_2O_3 Substrate
	CAB011A12GM3T	1200	141	11	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB011A12GM3	1200	141	11	Half-Bridge, AlN Substrate
	CAB008M12GM3T	1200	146	8	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB008M12GM3	1200	146	8	Half-Bridge, Al_2O_3 Substrate
	CAB008A12GM3T	1200	194	8	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB008A12GM3	1200	194	8	Half-Bridge, AlN Substrate
	CAB006A12GM3T	1200	200	6	Half-Bridge, AlN Substrate, Pre-Applied TIM
	CAB006A12GM3	1200	200	6	Half-Bridge, AlN Substrate
	CAB006M12GM3T	1200	200	6	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB006M12GM3	1200	200	6	Half-Bridge, Al_2O_3 Substrate
F PLATFORM standard 33.8 mm	CBB032M12FM3T	1200	39	32	Full Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CBB032M12FM3	1200	39	32	Full Bridge, Al_2O_3 Substrate
	CCB032M12FM3T	1200	30	32	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB032M12FM3	1200	30	32	Six-Pack, Al_2O_3 Substrate
	CBB021M12FM3T	1200	50	21	Full Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CBB021M12FM3	1200	50	21	Full Bridge, Al_2O_3 Substrate
	CCB021M12FM3T	1200	30	21	Six-Pack, Al_2O_3 Substrate, Pre-Applied TIM
	CCB021M12FM3	1200	30	21	Six-Pack, Al_2O_3 Substrate
	CAB016M12FM3T	1200	78	16	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB016M12FM3	1200	78	16	Half-Bridge, Al_2O_3 Substrate
	CAB011M12FM3T	1200	105	11	Half-Bridge, Al_2O_3 Substrate, Pre-Applied TIM
	CAB011M12FM3	1200	105	11	Half-Bridge, Al_2O_3 Substrate

B MODULE PLATFORM

WOLFSPEED'S 62 MM HALF-BRIDGE SILICON CARBIDE POWER MODULES SUPPORT **RAPID SYSTEM DEVELOPMENT**

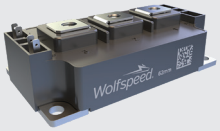
Wolfspeed's 62mm power module platform provides the system benefits of Silicon Carbide while maintaining the robust, industry-standard 62 mm module package. The internal design of Wolfspeed's 62 mm BM package enables high speed Silicon Carbide switching benefits, due to the low-inductance layout. Choose 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.

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



FEATURES

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

BENEFITS

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

APPLICATIONS

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

	Part Number	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ (mΩ) at 25°C	Description
B PLATFORM standard 62 mm	CAS175M12BM3	1200	175	8	Half-Bridge, C3M™ MOSFETs + Schottky Diodes
	WAS175M12BM3	1200	175	8	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	HAS175M12BM3*	1200	175	8	Half-Bridge, Enhanced for Harsh Environment, C3M MOSFETs + Schottky Diodes
	WAB300M12BM3	1200	300	4.5	Half-Bridge, THB-80 Qualified, C3M MOSFETs
	CAS350M12BM3	1200	350	4	Half-Bridge, C3M MOSFETs + Schottky Diodes
	WAS350M12BM3	1200	350	4	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	HAS350M12BM3*	1200	350	4	Half-Bridge, Enhanced for Harsh Environment, C3M MOSFETs + Schottky Diodes
	WAB400M12BM3	1200	400	3.7	Half-Bridge, THB-80 Qualified, C3M MOSFETs
	CAB530M12BM3	1200	530	2.7	Half-Bridge, C3M MOSFETs
	CAS530M12BM3	1200	530	2.7	Half-Bridge, C3M MOSFETs + Schottky Diodes
	WAS530M12BM3	1200	530	2.7	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes
	HAS530M12BM3*	1200	530	2.7	Half-Bridge, Enhanced for Harsh Environment, C3M MOSFETs + Schottky Diodes
	CAS310M17BM3	1700	310	5	Half-Bridge, C3M MOSFETs + Schottky Diodes
	HAS310M17BM3*	1700	310	5	Half-Bridge, Enhanced for Harsh Environment, C3M MOSFETs + Schottky Diodes
	WAS310M17BM3	1700	310	5	Half-Bridge, THB-80 Qualified, C3M MOSFETs + Schottky Diodes

*Coming Soon

X MODULE PLATFORM

ENABLER TO **MAXIMIZE POWER DENSITY WHILE MINIMIZING LOOP** INDUCTANCE AND SIMPLIFY POWER BUSSING

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_3N_4) power substrate to ensure mechanical robustness under extreme conditions.

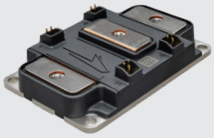
SUPPORTING GATE DRIVER:
CGD12HBXMP
FRDMGD3160XM3EVM
CGD1700HB2P-XM3
UCC5880QEVM-057
UCC5880INVERTEREVM

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

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

MODULE SIZE:
80 x 53 x 19 (mm)

TOPOLOGY:
Half-Bridge



FEATURES

- 50% Smaller/Lighter than Standard 62 mm 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 62 mm 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

	Part Number	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ (mΩ) at 25°C	Description
X PLATFORM standard 52 mm	CAB400M12XM3	1200	400	4	Half-Bridge, C3M™ Switching-Optimized MOSFETs
	CAB425M12XM3	1200	425	3.2	Half-Bridge, C3M Switching-Optimized MOSFETs
	CAB450M12XM3	1200	450	2.6	Half-Bridge, C3M Conduction-Optimized MOSFETs
	EAB450M12XM3	1200	450	2.6	Automotive grade, Half-Bridge, C3M Conduction-Optimized MOSFETs
	CAB320M17XM3	1700	320	4	Half-Bridge, C3M MOSFETs

H MODULE PLATFORM

THE BEST-IN-CLASS 62 MM SILICON CARBIDE MODULES AT WOLFSPEED'S **HIGHEST POWER DENSITY, LOWEST INDUCTANCE IN A LIGHTWEIGHT & COMPACT PACKAGE DESIGN**

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 62 mm module. The HM platform's Silicon Carbide optimized packaging enables 175°C continuous junction operation with a high-reliability Silicon Nitride (Si_3N_4) 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 62 mm Footprint
- High Junction Temperature (175 °C) Operation
- Light Weight AlSiC Baseplate
- High Reliability Silicon Nitride Insulator

BENEFITS

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

APPLICATIONS

- Railway Technology
- High Performance Motor Sports
- EV Fast Charging
- On-Board Charging
- Industrial Automation & Testing
- Medical power

	Part Number	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ (mΩ) at 25°C	Description
H PLATFORM optimized 62 mm	CAS480M12HM3	1200	480	2.29	Half-Bridge, C3M™ MOSFETs + Schottky Diodes
	CAR600M12HN6	1200	600	N/A	Half-Bridge Rectifier, Gen 6 Schottky Diodes
	CAB760M12HM3	1200	760	1.33	Half-Bridge, C3M MOSFETs
	CAB760M12HM3R	1200	760	1.33	Half-Bridge Right Signal Pins for Paralleling, C3M MOSFETs
	CAS380M17HM3	1700	380	3.3	Half-Bridge, C3M MOSFETs + Schottky Diodes
	CAB500M17HM3	1700	500	2.5	Half-Bridge, C3M MOSFETs
	CAR600M17HN6	1700	600	N/A	Half-Bridge Rectifier, Gen 6 Schottky Diodes
	CAB650M17HM3	1700	650	1.67	Half-Bridge, C3M MOSFETs

DESIGN TOOLS

START MODELING FOR YOUR DESIGN WITH SPEEDFIT™ DESIGN SIMULATOR

WELCOME TO SPEEDFIT™ DESIGN SIMULATOR

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 Rg
- How many devices need to be paralleled

KICKSTART YOUR DESIGN

Choose your Application →

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

No. of AC phases
(1, 3)

Input Design Specifications →

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.

Input Design Specifications →

Select the device from recommended products list

Number of devices to be paralleled

Input Thermal Management Specs →

Cooling System

Thermal interface resistance $R_{th,ch}$

Heatsink temperature T_h

Thermal resistance $R_{th,ha}$

Heatsink time constant $ł_{ha}$

Additional heat source on heatsink P_{add}

Ambient temperature T_{amb}

Simulate

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.

	Name*	Topology	Package	SKU
DISCRETE PACKAGES	SpeedVal Kit™ Modular Evaluation Platform	Dynamic Characterization	TO-247-4, TO-263-7, TOLL	SpeedVal Kit
	Evaluation Board For Paralleling 1200 V C3M™ Silicon Carbide MOSFETs in a 7-pin, (TO-263 Package)	DC to DC, Dynamic Characterization	TO-263-7	KIT-CRD-HB12N-J1
MODULE PLATFORMS	Dynamic Characterization Evaluation Tool Optimized for the 62 mm (BM) Module Platform	Dynamic Characterization	B platform	KIT-CRD-CIL12N-BM3 KIT-CRD-CIL17N-BM3
	Dynamic Characterization Evaluation Tool Optimized for the Wolfspeed WolfPACK™ Half Bridge Module Platform	Dynamic Characterization	F platform	KIT-CRD-CIL12N-FMA
	Dynamic Characterization Evaluation Tool Optimized for the Wolfspeed WolfPACK, Six-Pack Platform	Dynamic Characterization	F platform	KIT-CRD-CIL12N-FMC
	Dynamic Characterization Evaluation Tool Optimized for the Wolfspeed WolfPACK GM3 Half Bridge Module Platform	Dynamic Characterization	G platform	KIT-CRD-CIL12N-GMA
	Dynamic Characterization Evaluation Tool Optimized for the HM High Performance 62 mm (HM) Module Platform	Dynamic Characterization	H platform	KIT-CRD-CIL12N-HM3 KIT-CRD-CIL17N-HM3
	Dynamic Performance Evaluation Board for the Wolfspeed WolfPACK Full-Bridge Module Platform	Dynamic Characterization	F platform	KIT-CRD-CIL12N-FMB
	Evaluation Tool for the XM3 Module Platform	AC to DC, Dynamic Characterization	X platform	KIT-CRD-CIL12N-XM3 KIT-CRD-CIL17N-XM3

*All of these Evaluation kits are designed by Wolfspeed

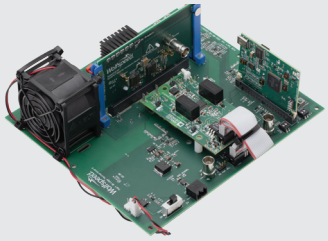
TO LEARN MORE, VISIT US AT **WOLFSPEED.COM/POWER**

SPEEDVAL KIT™ MODULAR EVALUATION PLATFORM

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 useas 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

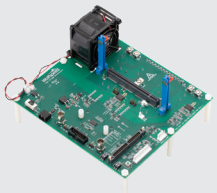
USES

- 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.

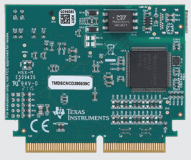
Components may be purchased separately or use the SpeedVal Kit Configurator to build your complete evaluation system.



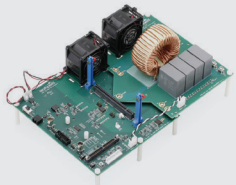
Half-Bridge Motherboard

Power Daughter Cards

Gate Driver Cards



Control Cards (optional)

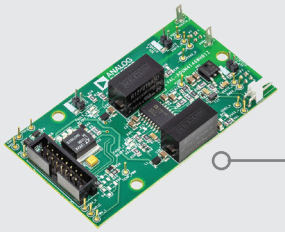


Accessories (optional)

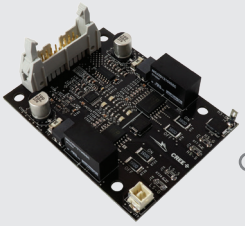
TO LEARN MORE, VISIT US AT **WOLFSPEED.COM/SPEEDVALKIT**

GATE DRIVER BOARDS

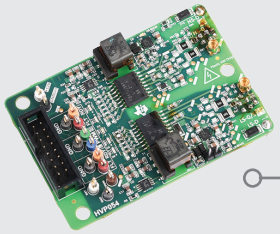
Wolfspeed provides companion gate driver evaluation tools for its Silicon Carbide products to help you get up and running quickly. These evaluation tools help you learn best practices and give you a starting point for working with Wolfspeed's Silicon Carbide. All design files available are complimentary,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



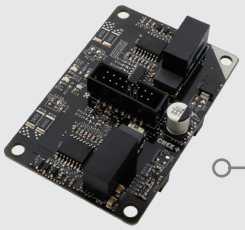
ADuM4146



CGD1200HBP-BM2
CGD1200HBP-BM3



UCC21750 & UCC21710



CGD12HBXMP

COMPANION GATE DRIVERS

SKU	Package	Designed By	Gate Driver	Output Channels
CGD1200HB2P-BM2	B Platform	Wolfspeed	Analog Devices® ADuM4135	2
CGD1200HB2P-BM3	B Platform	Wolfspeed	Analog Devices ADuM4135	2
CGD1700HB2P-XM3	B Platform	Wolfspeed	ADuM4136	2
CGD1700HB3P-HM3	H Platform	Wolfspeed	IXDD614YY	2
UCC21750QDWEVM-054	SpeedVal Kit	Texas Instruments	Texas Instruments® UCC21750	2
CGD1700HB2M-UNA / UCC21710QDWEVM-054	SpeedVal Kit, F Platform, G Platform	Texas Instruments	Wolfspeed / Texas Instruments UCC21710	2
EVAL-ADUM4146WHB1Z	SpeedVal Kit, F Platform, G Platform	Analog Devices	Analog Devices ADuM4146	2
Si823H-ACWA-KIT Si823H-AAWA-KIT Si823H-ABWA-KIT	SpeedVal Kit, F Platform, G Platform	Skyworks	Skyworks® Si823Hx	2
CGD12HBXMP	X Platform	Wolfspeed	Analog Devices ADuM4135	2
UCC5880QEVM-057	X Platform	TI	Texas Instruments® UCC5880Q1	2
UCC5880INVERTEREVM	X Platform	TI	Texas Instruments® UCC5880-Q1	2
CGD1700HB2P-XM3	X Platform	Wolfspeed	ADuM4136	2
FRDMGD3160XM3EVM	X Platform	NXP	NXP® GD3160	2

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

CRD-15DD17P

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, 1 Ω 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

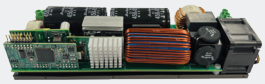
CRD-02AD065N

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.

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

3.6 kW Bridgeless Totem-Pole PFC



Topology:
AC to DC
Package:
TOLL, TO-247-3

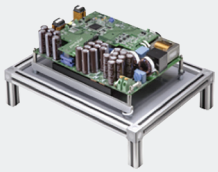
CRD-03600AD065E-L

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.

Specifications:

- Applications: 80 Plus® Platinum/Titanium, Energy Star® , Lot 9, and OCP3.0 power supplies
- Power density: 92 W/in^3
- Switching frequency: 60 kHz
- Input voltage: 180 - 305 VAC
- Output voltage: 440 VDC MAX
- Output Power: 3.6 kW (Derated at low line)
- Peak efficiency: 99%
- Cooling: Forced air

6.6 kW Bi-Directional EV On-Board Charger



Topology:
AC to DC, DC to AC
Package:
TO-247-4

CRD-06600FF10N

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

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

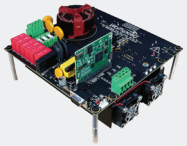
This reference design is offered as a comprehensive design package which can be used as a starting point for new Silicon Carbide designs.

The design accomplishes a peak efficiency of 96.5% and a power density of 53 W/in^3 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

7.5 kW FM3 Three-Phase Motor Drive

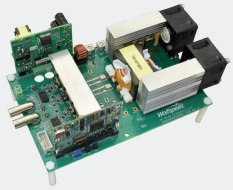


Topology:
AC to DC, DC to AC
Package:
FM3

CRD07500AA12N-FMC

Specifications:
- Output power of 7.5 kW
- Switching frequency of 100 kHz
- Input/output voltage of 480 VAC

6.6 kW High Frequency DC-DC Converter

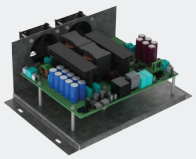


Topology:
DC to DC
Package:
TO-247-3

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

Topology:
AC to DC
Package:
TO-247-4

CRD-22AD12N

This reference design demonstrates the application of Wolfspeed's 1200 V C3M™ Silicon Carbide MOSFETs to create a 22 kW 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.

Specifications:
- Switching frequency: 45 kHz
- Tooled 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 FM3 Three-Phase Inverter

Topology:
DC to AC

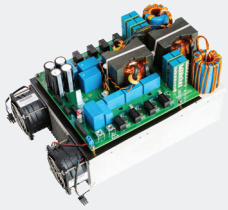
Package:
FM3

CRD25DA12N-FMC

Specifications:

- Output power of 25 kW
- Switching frequency of 100 kHz
- Input voltage of 1000 VDC

22 kW Bi-directional High Efficiency DC/DC Converter



Topology:
DC to DC

Package:
TO-247-4

CRD-22DD12N

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.

Specifications:

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

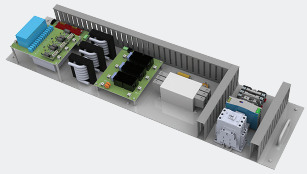
Charging Mode

- 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

25 kW Silicon Carbide Active Front End (AFE)



Topology:
AC to DC

Package:
F Platform

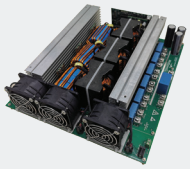
CRD25AD12N-FMC

This reference 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.

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

30 kW Discrete Interleaved LLC DC-DC Converter



Topology:
DC to DC
Package:
TO-247-4, TO-220-2, TO 247-3

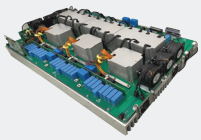
CRD30DD12N-K

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.

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

60 kW Interleaved LLC Converter



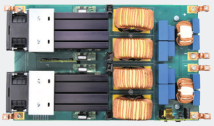
Topology:
DC to DC
Package:
TO-247-4

CRD-60DD12N-K

Specifications:

- The 60 kW 3-phase interleaved LLC DC-DC converter is targeted to provide high power density, low input current ripple and high efficiency for EV DC fast chargers.
- Features Wolfspeed's discrete 1200 V C3M™ Silicon Carbide MOSFETs (C3M0040120K or C3M0032120K) and 650 V C6D Silicon Carbide Schottky diodes (C6D20065D).
- A wide output voltage range of 200 V - 1000 V to accommodate all levels of EV charging.
- A high power density of 4.83 kW/L and higher than 98.5% peak efficiency.
- Adaptive control operates over a 120 kHz - 250 kHz switching frequency range to maintain optimal control over all operating conditions.

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
- 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/in^3

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 uF 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.

Wolfspeed®

NOBODY KNOWS SILICON CARBIDE POWER DEVICES LIKE WOLFSPEED.
WE'RE GLAD TO SHARE WHAT WE KNOW, AND WE LOVE TALKING ABOUT THIS STUFF.
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