



SELECTION GUIDE

WOLFSPEED AND ANALOG DEVICES COMPANION GUIDE



WOLFSPEED COMPANION PRODUCT SELECTION GUIDE

Pair Wolfspeed Silicon Carbide Power Devices with Compatible Gate Drivers from Analog Devices

Wolfspeed is the global leader in Silicon Carbide (SiC) wide bandgap semiconductor technology. Analog Devices (ADI) is the market leader in digital isolation. Together, Wolfspeed Silicon Carbide devices and ADI isolated gate drivers enable more efficient, reliable, and cost-effective power conversion designs.

WOLFSPEED AND ADI COMBINE MARKET-LEADING POWER DEVICES AND GATE DRIVERS TO DELIVER HIGH EFFICIENCY AND HIGH-RELIABILITY SYSTEM SOLUTIONS ACROSS INDUSTRIAL, ENERGY, AND AUTOMOTIVE APPLICATIONS. THESE SOLUTIONS ARE BACKED BY INDUSTRY-RELEVANT REFERENCE DESIGNS, EVALUATION PLATFORMS AND HARDWARE DESIGN PACKAGES, ALONG WITH JOINT APPLICATIONS SUPPORT THROUGH ARROW.

RESOURCES

[SpeedFit Design Simulator™](#)

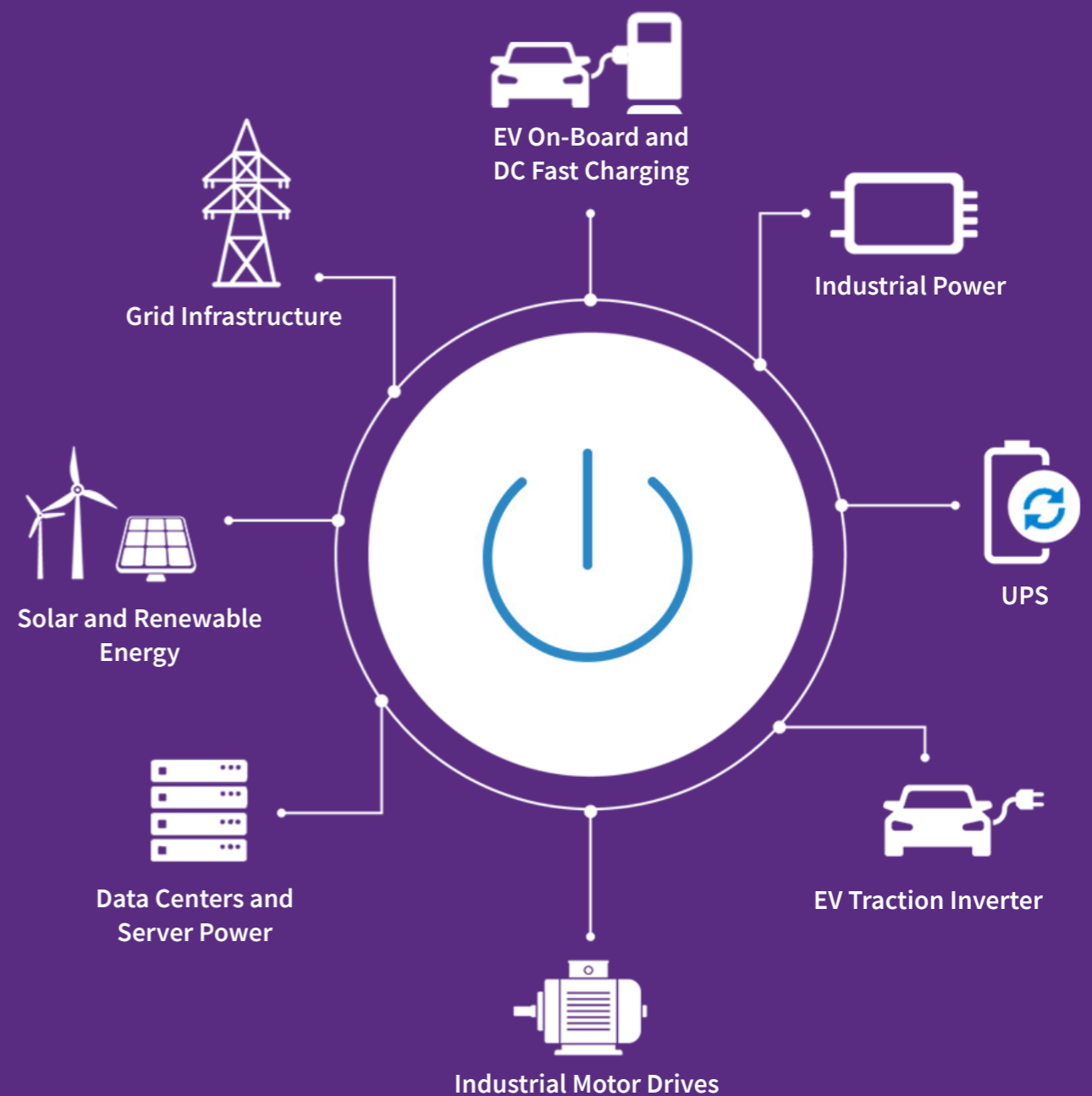
[LTspice & PLECS Models](#)

[Wolfspeed Power Applications Forum](#)

[CAD Models, Symbols, and Footprints](#)

WOLFSPEED

Silicon Carbide Applications



WOLFSPEED SILICON CARBIDE EVALUATION PLATFORMS

TO LEARN MORE, VISIT US AT WOLFSPEED.COM

Boards and Kits Optimized for In-Lab Testing

Shorten development cycles and create rugged and reliable systems with best-in-class power density, performance, and efficiency using tested and qualified Silicon Carbide device and gate drive pairings. Find all supporting materials on Wolfspeed.com, including application notes, datasheets, user guides, design files, models, and more.

Wolfspeed Platform	Evaluation Board	Evaluation Board Description	Wolfspeed Products	ADI Products	Reference Designs	Reference Design Description	Applications
Discrete SiC MOSFETs 650V-1200V	SpeedVal Kit™	Evaluation Platform for 650 V -1200 V SiC MOSFETs in TO-247-4, TO-263-7, and TOLL packages	C3M0045065J1/K/L C3M0060065J/K/L C3M0025065J1 C3M0032120J1/K C3M0075120J/K C3M0040120J1/K	ADuM4146 ADuM4121 ADuM4122	CRD06600DD065N	Demonstration of Wolfspeed's 650 V, 60 mΩ Silicon Carbide MOSFETs in a 6.6 kW High-frequency DC-DC converter targeting high power density applications	Ideally suited for 1-60 kW Applications in Automotive, Renewable Energy, Power Supplies, Industrial Power and Motor Drives
BM2/BM3 Modules	CGD1200HB2P-BM2 CGD1200HB2P-BM3	Evaluation Gate Driver Tool Optimized for the BM2 Module Platform	CAS120M12BM2 CAS300M12BM2 CAS300M17BM2	ADuM4135			Railway and Traction, EV Charging Infrastructure, Industrial Automation and Testing, High-frequency Power Supplies, Renewable Energy Systems, and Grid-Tied Inverters, Active Front Ends and AC Inverters
Wolfspeed WolfPACK™ Modules	EVAL-ADUM4146WHB1Z and KIT-CRD-CIL12N-FMA or KIT-CRD-CIL12N-FMC or KIT-CRD-CIL12N-GMA	Dynamic Characterization Evaluation Tool for Wolf-speed WolfPACK™ Modules	CAB011M12FM3 CAB016M12FM3 CCB021M12FM3 CCB032M12FM3 CAB006M12GM3 CAB008M12GM3 CAB006A12GM3 CAB008A12GM3	ADuM4146 ADuM4190 LT6990 LTC1086	CRD25AD12N-FMC	Demonstration of a bidirectional high power density Active Front End (AFE) that can be applied to electric vehicle (EV) fast charging and other applications	Industrial Power, Induction Heating and Welding, Industrial Motor Drives, Power Supplies, EV Fast Charging, Solar and Renewable Energy, Uninterruptible Power Supplies (UPS), Grid Infrastructure
XM3 Modules	CGD12HBXMP	Evaluation Gate Driver Tool Optimized for the XM3 Module Platform	CAB400M12XM3 CAB425M12XM3 CAB450M12XM3	ADuM4135 LT3015	CRD300DA12E-XM3	300kW XM3 Three-Phase Inverter with CAB450M12XM3 and ADuM4135	Electric Vehicle Chargers, Uninterruptible Power Supplies, Vehicle Traction Inverters, Active Front Ends, Industrial Motor Drives, Energy Storage, Grid-Tied Renewable Energy, Smart-Grid & Flexible AC Transmission Systems
	EVAL-ADuM4177WHBAZ			ADuM4177 LT1962 ADM4168	CRD600DA12E-XM3	600kW XM3 High-performance Dual Three-Phase Inverter with CRD600DA12E and ADuM4177*	
	EVAL-ADuM4177WHBBZ		EAB450M12XM3	ADuM4177 ADuM3195 ADuM6028	CRD300DA12E-XM3-ADI-SM	300kW Three-Phase Traction Inverter with advanced control	


*Note that the ADuM4177 part is in development.


GATE DRIVER ICs FOR WOLFSPEED SILICON CARBIDE DEVICES

Analog Devices gate drivers complement the higher switching speeds, voltages, and current levels of Wolfspeed Silicon Carbide devices. Find compatible products in the table.
















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Gate Driver Companions

 Automotive Qualified

 Automotive Capable

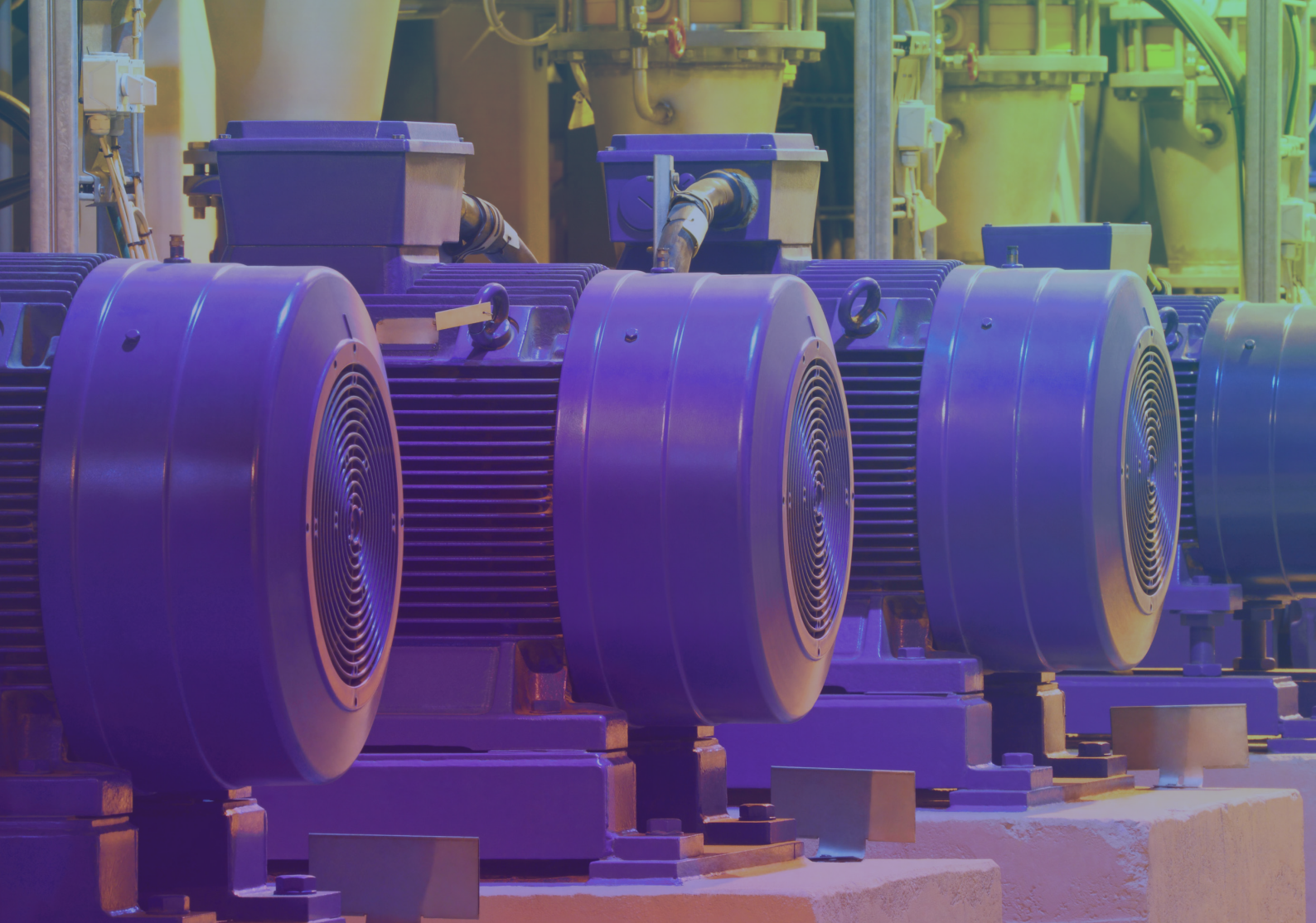


					Performance				Protecting			Programmable		
					ADuM4120	ADuM4121	ADuM4122	ADuM4221	ADuM4135	ADuM4136	ADuM4146	ADuM4137	ADuM4138	ADuM4177*
1200 V FM3 Module		Half-Bridge, Six-Pack	FM3		C	C	C	H			C, E			
1200 V GM3 Module		Half-Bridge	GM3		C	C	C	H			C, E			
1200 V XM3 Module		Half-Bridge	XM3						C, E, T*	C	C	C	C	C, E*
1200 V HM3 Module		Half-Bridge	HM3						C	C	C	C	C	C
1700 V HM3 Module		Half-Bridge	HM3								V, E*			
1200 V BM3/BM2 Module		Half-Bridge	BM3/ BM2						C, E	C	C	C	C	C
1700 V BM2 Module		Half-Bridge	BM2								V, E*			
650 V C3M™ MOSFET		Single Switch	D, K, J		C	C, E*	C, E*	H, R	P	P	F	P	P	P, R*
900 V C3M™ MOSFET		Single Switch	D, K, J		C	C, E*	C, E*	H	P	P	F	P	P	P
900 V E3M MOSFET		Single Switch	J		C	C, E*	C, E*	H	P	P	F	P	P	P
1000 V C3M™ MOSFET		Single Switch	J, K		C	C, E*	C, E*	H	P	P	F	P	P	P
1200 V E3M MOSFET		Single Switch	D, K		C	C, E*	C, E*	H	P	P	F	P	P	P
1200 V C3M™ MOSFET		Single Switch	D, K, J		C	C, E*	C, E*	H	P	P	F	P	P	P
1700 V C2M™ MOSFET		Single Switch	D, P								V			

* - In development
 E - Evaluation Board Exists
 T - Test Report Exists
 R - Reference Design Exists

C - General Companion Recommendation
 H - Preferred for Half-Bridge Configurations
 F - Preferred for High-Frequency Applications

V - Preferred for High Voltage Applications
 P - Preferred When Paralleling Switches



Wolfspeed[®]



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