Wolfspeed and Analog Devices Companion Guide

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ARROW

Wolfspeed
A CREE COMPANY

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, Wolfpseed SiC devices and ADI isolated gate drivers enable more efficient, reliable, and cost effective power conversion designs.

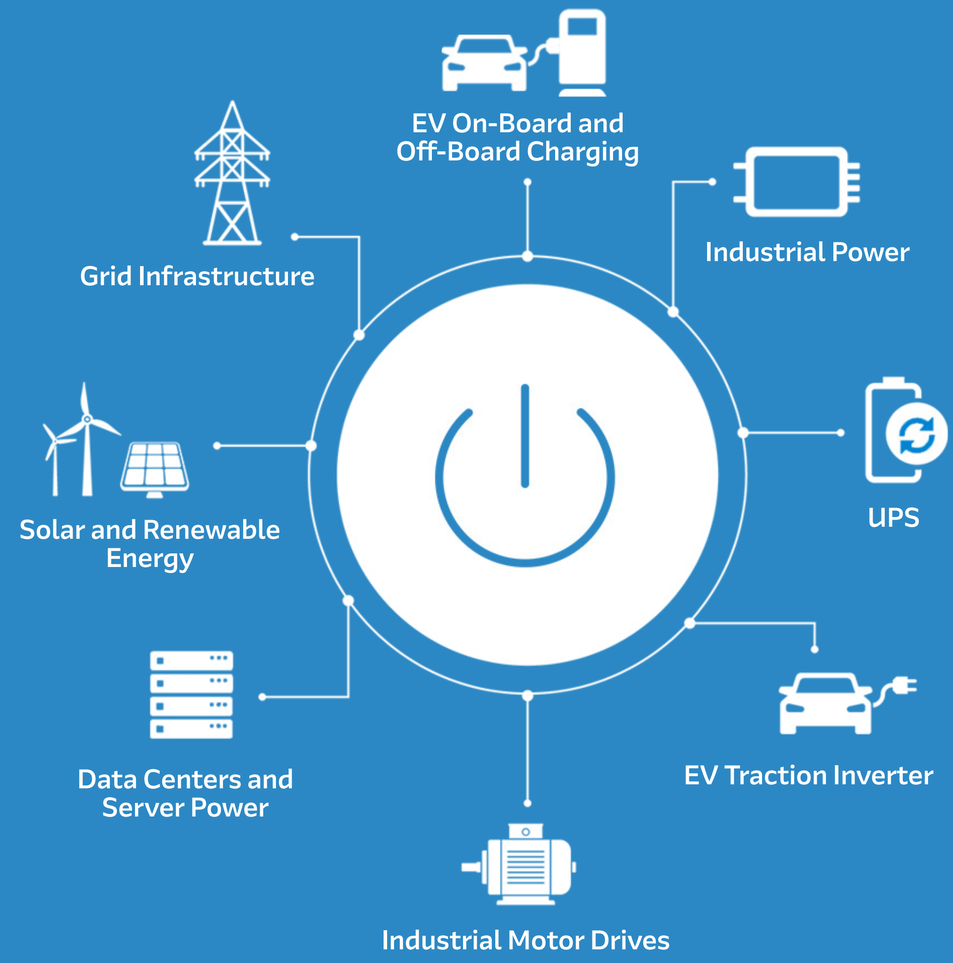
Wolfspeed and ADI combine market leading power devices and gate drivers to deliver high efficiency and high reliability system solutions across industrial, energy and automotive applications. These solutions are backed by industry-relevant reference designs, evaluation platforms and hardware design packages, along with joint applications support through Arrow.

Resources

SpeedFit Design Simulator

LTspice & PLECS Models

Wolfspeed SiC Applications



Wolfspeed SiC Evaluation Platforms

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 SiC device and gate drive pairings. Find all supporting materials on Wolfspeed.com, including application notes, data sheets, user guides, design files, models, and more.

Wolfspeed Platform	Evaluation Board	Evaluation Board Description	Wolfspeed Products	ADI Products	Reference Designs	Reference Design Description	Applications
650 V MOSFETs and Schottky Diodes	KIT-CRD-8FF65P	Evaluation Boards for 650 V C3M MOSFETs in a 7-pin D2PAK (TO-263-7L)	C3M0060065J	ADuM4121	CRD06600DD065N	Demonstration of Wolfspeed's 650 V, 60 mΩ SiC MOSFETs in a 6.6 kW High Frequency DC-DC converter targeting high power density applications	Industrial Power, Server/Telecom, EV Charging Systems, Energy Storage Systems (ESS), Uninterruptible Power Supplies (UPS), Battery Management Systems (BMS)
900 V MOSFETs and Schottky Diodes	KIT-CRD-8FF90P	Evaluation Boards for 900V C3M MOSFETs in a 7-pin D2PAK (TO-263-7L)	C3M0065090J	ADuM4121			Motor Control, EV Charging Systems, Uninterruptible Power Supplies (UPS), BMS, Drivetrain, Welding, Onboard Charging
BM2 Modules	CGD1200HB2P-BM2	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	Dynamic Characterization Evaluation Tool for Wolfspeed WolfPACK™ Modules	CAB011M12FM3 CAB016M12FM3 CCB021M12FM3 CCB032M12FM3	ADuM4146 ADuM4190 LT6990 LTC1086	CRD25AD12N-FMC		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	CAB450M12XM3 CAB450M12XM3 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-ADUM4177XM31Z			ADuM4177 LT1962 ADM4168	CRD600DA12E-XM3	600kW XM3 High Performance Dual Three-Phase Inverter with CAB450M12XM3 and ADuM4135	

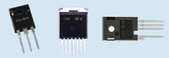
Gate Driver ICs for Wolfspeed SiC Devices

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

Gate Driver Companions

Automotive Qualified

Automotive Capable

				Performance				Protecting			Programmable		
				ADuM4120	ADuM4121	ADuM4122	ADuM4221	ADuM4135	ADuM4136	ADuM4146*	ADuM4137	ADuM4138	ADuM4177*
1200V FM3 Module		Half-Bridge: 78A, 105A Six-Pack: 40A, 51A	FM3 	C	C	C	H			C, E			
1200V XM3 Module		400A, 425A, 450A	XM3 					C, E, T*	C	C	C	C	C, E*
1200V HM3 Module		481A, 765A	HM3 					C	C	C	C	C	C
1200V HM2 Module		325A	HM2 					C	C	C	C	C	C
1200V BM3 Module		300A, 400A	BM3 					C, E	C	C	C	C	C
1200V BM2 Module		120A, 300A	BM2 					C, E	C	C	C	C	C
1700V BM2 Module		225A	BM2 							V, E*			
1200V CM2 Module		20A, 50A	CM2 	C	C	C	H						
650V C3M MOSFET		15mΩ, 25mΩ, 45mΩ, 60mΩ, 120mΩ	D, K, J 	C	C, E*	C	H, R	P	P	F	P	P	P, R*
900V C3M MOSFET		30mΩ, 65mΩ, 120mΩ, 280mΩ	D, K, J 	C	C	C	H	P	P	F	P	P	P
900V E3M MOSFET		65mΩ, 120mΩ, 280mΩ	D 	C	C	C	H	P	P	F	P	P	P
1000V C3M MOSFET		65mΩ, 120mΩ	J, K 	C	C	C	H	P	P	F	P	P	P
1200V C3M MOSFET		16mΩ, 21mΩ, 25mΩ, 32mΩ, 40mΩ, 49mΩ, 75mΩ, 80mΩ, 160mΩ, 280mΩ, 350mΩ	D, K, J 	C	C	C	H	P	P	F	P	P	P
1700V C2M MOSFET		45mΩ, 80mΩ, 1000mΩ	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

Contact Information

www.wolfspeed.com

www.analog.com/icoupler

Five Years Out

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