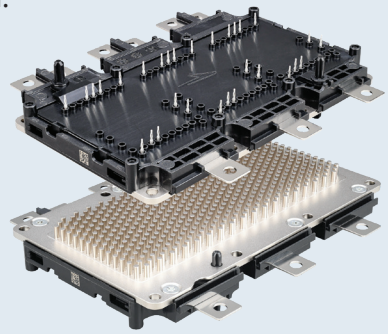
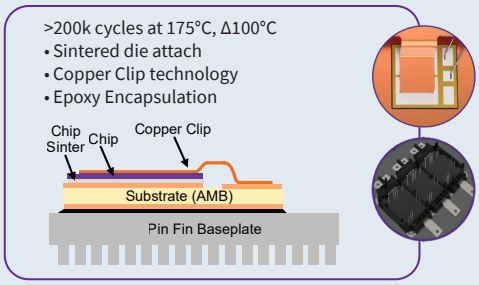
WOLFSPEED YM3 SILICON CARBIDE SIX-PACK POWER MODULE

AUTOMOTIVE QUALIFIED SIX-PACK POWER MODULE IN AN INDUSTRY STANDARD FOOTPRINT DESIGNED FOR HIGH RELIABILITY AND STRAIGHTFORWARD INTEGRATION

Wolfspeed's YM3 six-pack power module streamlines Silicon Carbide integration into commercial, construction, and agricultural vehicle traction systems with its industry-standard footprint and advanced design. The YM3 features an optimized power terminal layout that minimizes package inductance enabling reduced overshoot voltage and ultra-low switching loss. This package boasts industry-leading durability through hard epoxy encapsulation, sintered die attach, a copper top-side clip, and welded terminals. A direct-cooled pin-fin baseplate enhances thermal performance, while press-fit pins simplify assembly. Available in various current ratings up to 1200 V / 600 A, the YM3 meets the AQG-324 automotive power module standard.





PRODUCT PORTFOLIO

Product SKU	Blocking Voltage (V)	Nominal Current (A)	$R_{DS(ON)}$ at 25°C (mΩ)	Description
ECB2R1M12YM3	1200	600	2.1	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs
ECB2R1M12YM3L	1200	600	2.1	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs, Long Phase Terminals
ECB2R8M12YM3	1200	460	2.8	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs
ECB2R8M12YM3L	1200	460	2.8	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs, Long Phase Terminals
ECB4R3M12YM3	1200	330	4.3	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs
ECB4R3M12YM3L	1200	330	4.3	Automotive Grade, Six-Pack (three-phase), Gen3 MOSFETs, Long Phase Terminals

FEATURES

- Fully SiC MOSFET-based for Ultra-Low Loss
- Comparative Tracking Index (CTI) > 600 V for Material Group I
- Extremely Low Power Loop Inductance (6.6 nH)
- High Performance Si3N4 Insulator
- Ultra-Reliable Interconnect Technologies
- AQG-324 Qualification

BENEFITS

- Direct-Cooled Pin Fin Baseplate
- Industry-Standard Footprint
- Press-fit Connection for Ease of Assembly
- Integrated NTC Temperature Sensors

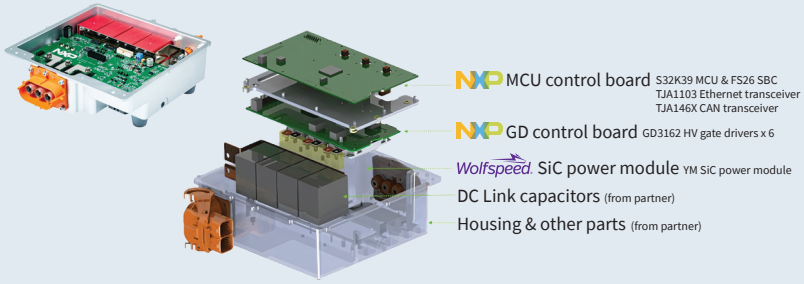
APPLICATIONS

- Automotive Traction Inverters
- Commercial, Construction, and Agricultural Vehicles
- Hybrid Electric Vehicles
- E-Mobility and Motor Drives
- Auxiliary Power Supplies; Renewable Energy

AUTOMOTIVE QUALIFIED SIX-PACK POWER MODULES IN AN INDUSTRY STANDARD FOOTPRINT DESIGNED FOR HIGH RELIABILITY AND STRAIGHTFORWARD INTEGRATION

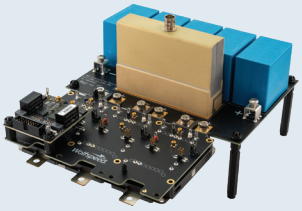
FEATURED DESIGN TOOLS

Wolfspeed offers time saving design support 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.



NXP and Wolfspeed's 800 V EV Traction Inverter Reference Design mitigates many of the hurdles facing an EV system architect

[EV-INVERTERGEN3]



Dynamic Characterization Evaluation Kit for YM3 Six-Pack Power Modules for accurate measurements of switching losses
[KIT-CRD-CIL12N-YMC]

Why Wolfspeed Silicon Carbide?

Durability
Designed to last, even in the harshest environment

Holistic Efficiency
Designed to comprehensively improve system efficiency

Lower System Cost
Designed to enable reduced system cost and development time

Focused Development and Customer Support
ALL resources dedicated to developing Silicon Carbide capacity, devices, packages, and to providing superior applications support

We Provide Silicon Carbide Solutions

- Silicon Carbide power devices
- Silicon Carbide expertise—this is all we do
- Application reference designs
- Expert systems engineering support
  - Visit forum.wolfspeed.com
- SpeedFit™ online simulation platform

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