

MCU-X PRODUCT SUMMARY

MCU-X 800V SiC INVERTER PLATFORM

PRODUCT DESCRIPTION

Motion Applied's MCU-X inverter platform builds on more than ten years of Silicon Carbide technology expertise to deliver a highly customizable solution with exceptional flexibility and modularity. MCU-X can be reconfigured for seamless integration into diverse powertrain or vehicle systems and enables tailoring or expansion of product features to meet specific application requirements.



MCU-X EDU integration ²

Nominal Performance	
Voltage	Up to 900V
Peak current	Over 588 Arms ¹
Continuous current	320 Arms
Efficiency	Over 97% typical, 99% peak
Switching frequency	8 – 32 kHz continuously variable at 1kHz rate
Electrical frequency	Up to 2.5 kHz

Standard Communication and Motor Feedback	
Operating system	AUTOSAR 4.3
Low voltage input	8 – 32 V nominal
Vehicle communication	3 CAN2.0 interfaces (2 with FD option)
Debugging	1 Ethernet interface
Motor feedback	1x position and 3x temperature feedback inputs

Safety	
Functional safety	ISO26262 SEooC ASIL D capable
Safety features	Active Short Circuit

Mechanical	
Nominal active mass	<2.5 kg
Nominal active volume	<3.8 L

Customisation	
Ancillary system control	Control of systems such as oil pumps, cooling fans and parking brakes
Cooling	Modification for cooling via water/glycol, oil or forced-air
Connector location	Configuration of HV and LV connector locations and types
Packaging	Configuration of packaging arrangement for alternate space envelopes
Material selection	Use of alternative materials for weight saving

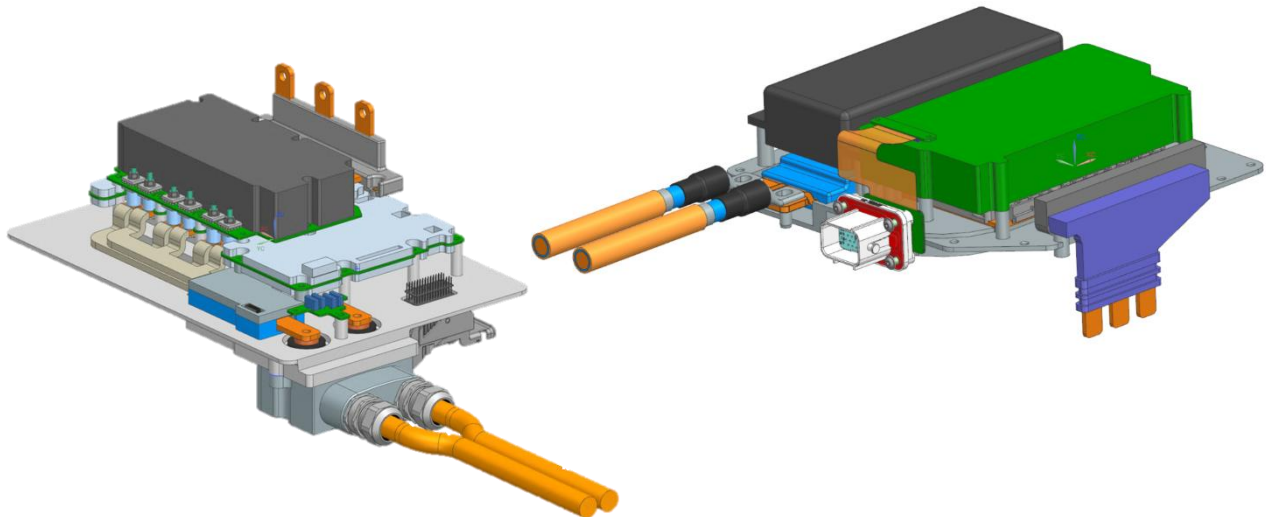
1. 70°C coolant, 10 L/min flowrate, 8 kHz switching frequency, 2 seconds duration. Figure limited by test motor.

2. Illustrative example only.

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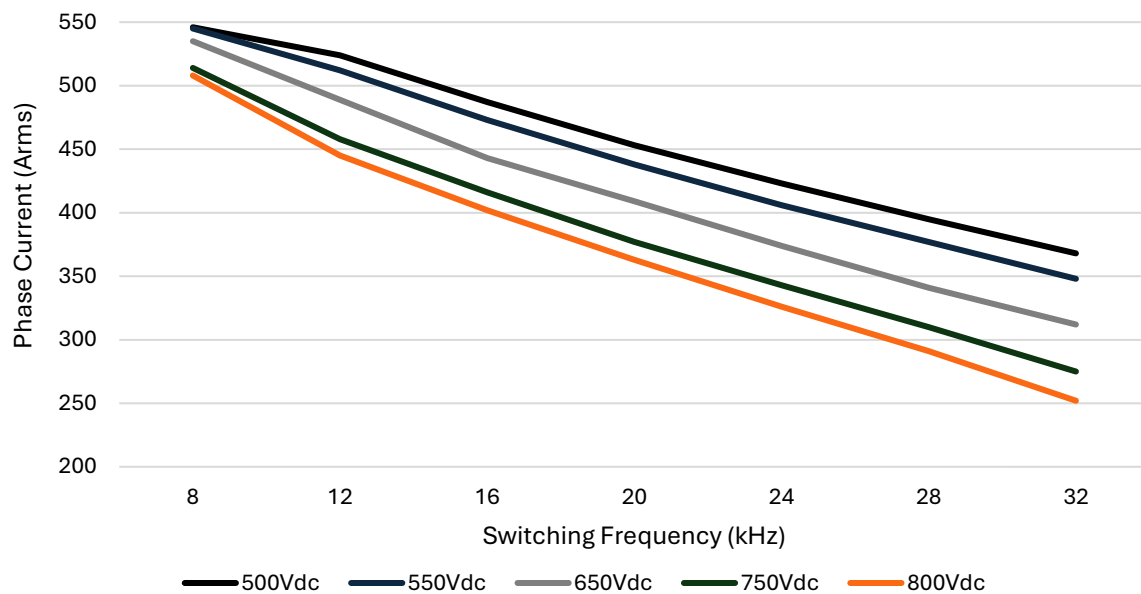
DESIGN EXAMPLES

Designs simplified into basic blocks



NOMINAL PERFORMANCE MAP

10s rating using 70°C water/glycol coolant at 10L/min. Modulation index < 0.6, Power Factor > 0.9



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