



3.6kW BRIDGELESS TOTEM-POLE PFC CRD-03600AD065E-L

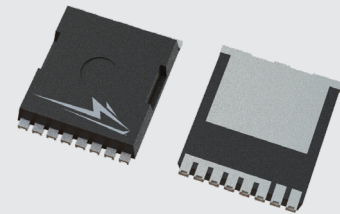
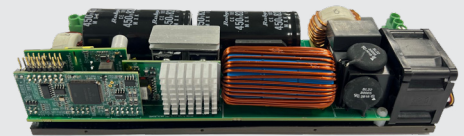
HIGH EFFICIENCY, HIGH POWER DENSITY

This reference design demonstrates the application of Wolfspeed®'s C3M™ 650 V Silicon Carbide MOSFET technology in TOLL (TO - Leadless) package to create a 3.6kW bridgeless totem-pole PFC for server, data, and mining power supplies and telecom systems. Wolfspeed's TOLL package offers low conduction and switching losses, which further enables smaller, lighter and highly efficient power conversion systems.

The design accomplishes

- Peak efficiencies of 99%
- Suitable for use in power supplies to meet 80 Plus® Platinum/Titanium, ENERGY STAR®, and ErP LOT 9 efficiency requirements
- Power density of 92 W/in³
- 60 kHz switching frequency

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



FEATURES

- High Power Density
- High Efficiency
- Input voltage range: 180-265 VAC
- 60kHz Switching Frequency



BENEFITS

- Improves system efficiency and power density
- Enables high switching frequency operation with low switching losses
- Lower system level cooling requirements
- Lower system level cost



APPLICATIONS

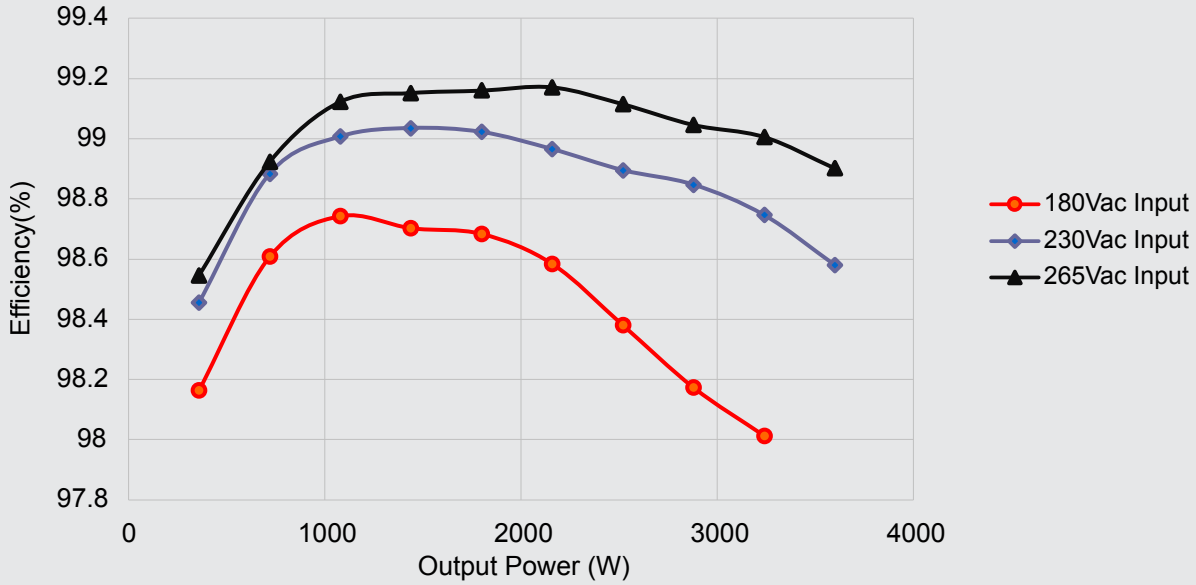
- Enterprise Power Supplies
- Server and Telecom Power Supplies
- Mining Power Supplies
- Battery Management Systems

SYSTEM SPECS

Parameter	Value	Notes
Input Voltage Range V_{IN}	180-265 VAC RMS, 230V nominal	Power derating needed for low line
Output Voltage V_{OUT}	380-420 VDC	
Output Power P_{OUT}	3.6 kW max.	
Switching Frequency f_s	60kHz	
Peak Efficiency η	99%	With AUX PSU
Silicon Carbide MOSFET	C3M0045065L –HF leg C3M0015065D – LF leg	TOLL package for HF Leg LF can use Si/SiC MOSFET
Form Factor (W x H x L)	73mm x 40mm x 220mm	Power density: 92W/in ³
Operating Ambient Temperature T_a	-40°C to +45°C	Forced air cooling

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EFFICIENCY UNDER DIFFERENT INPUT VOLTAGE



Power loss of the auxiliary power supply included

