



ENGINEERING
CONSULTING
SERVICES

Highly Efficient Power Electronics Generation

22 KW Onboard Charger (OBC)

Custom Designed Automotive Onboard Charger With
Bidirectional Charging Mode And Universal Grid Compatibility



Developed By Us

Owned By You

Designed in California, USA

Copyright © 2025 HEPEG, Inc.



Highlights

HEPEG offers vertical integration for **custom-made** All-in-One Solution that seamlessly integrates with global charging standards solution for Bi-directional 22kW Onboard Charger (OBC) to charge any type of electric vehicle high-voltage battery system.



Why HEPEG?

Using solution by HEPEG will help to cut down building costs and avoid dependency from other suppliers.



➤ **EXPERIENCE**

HEPEG has successfully delivered OBC for production



➤ **BENEFITS**

HEPEG can provide all design manufacturing files to EV OEM

➤ **FAMILIARITY**

HEPEG knows EV US/EU charging standards, systems and equipment



➤ **HISTORY**

HEPEG has collaborated successfully with EV OEMs in the past

➤ **RESPONSIVENESS**

HEPEG can adapt quickly and respond to EV costumers needs



OBC Key Features



V2X CHARGING ENABLES BIDIRECTIONAL ENERGY FLOW BETWEEN ELECTRIC VEHICLES (EVs) AND THE FOLLOWING EXTERNAL SOURCES

- V2L vehicle supplies external or internal AC Loads
- V2B/V2H Vehicle supplies AC to building or home
- V2G Vehicle supplies AC directly into the public grid
- V2V vehicle supplies AC into another vehicle/trailer or vice versa



ALLROUNDER FOR GLOBAL APPLICATION

Charging standards:

Type2, Type1, CCS 1/2, optional: CHAdeMO, GB/T, NACS

AC Direct Mode Universal Grid-topologies:

Standard three phase TT/TN/IT w/ or w/o neutral

Single phase (EU:L1-N) / Split phase (USA: L1-L2/N)

Generator and range extender operation



COMMUNICATION AND DIAGNOSTICS

CAN 1

- SAE J1939 vehicle CAN interface
- UDS Diagnostic Services – ISO 14229

CAN 2 Internal

- Enhanced diagnostics
- Inter cluster communication in Master-/Slave- Mode



DURABILITY AND SAFETY

- High IP protection level IP6K9K/IP67
- Functional Safety ISO 26262 ASIL B for on road vehicle application
- ECE R10/IEC 61581 compliant
- ISO 16740-4 (Environmental Durability) compliant Cyber Security
- ISO 21434



OUTSTANDING PERFORMANCE AND EFFICIENCY

- Outstanding efficiency using high frequency Silicon Carbide (SiC) technology
- Extremely compact and lightweight design
- Shortest charging time due to continuous full load performance
- Fully EMI/EMC compliant according to ECE R10



OBC Technical Data

➤ Input/output AC voltage 3-ph.	360V to 525V (400V/480V) x 3
➤ Input/output AC current 3-ph.	<32A x 3 (G2V-FCM Mode)
➤ Input/output AC voltage 1-ph.	85V to 305V (120V/240V)
➤ Input/output AC current 1-ph.	<80A (Type 1 Split Ph.)
➤ Battery Voltage Range	200V to 920V (Optional Range)
➤ Battery Current	-70A to +70A (Optional Range)
➤ Voltage total harmonic distortion	<5.5%
➤ AC Power	22KVA
➤ Power factor	0.98
➤ Starting inrush current	14.7A
➤ Input frequency	45Hz to 65Hz
➤ Insulation resistance	5.5Meg
➤ Leakage current	3.5mA
➤ Efficiency	<97%
➤ Output/Input capacitor(Without Battery)	100uF
➤ Output/Input current ripple (3 Ph.)	3%
➤ Output/Input voltage tolerance (3 Ph.)	5%
➤ Operating temperature (8.2 ltr/min)	-30°C to +60°C
➤ Storage temperature	-40°C to +85°C
➤ Max. liquid temperature	+70°C
➤ Liquid temperature range	-30°C to +65°C
➤ Humidity	95%
➤ Altitude	-2500m to +2500m
➤ Weight	19.7kg
➤ Housing	Aluminum Die-Casting or CNC
➤ Outline dimensions	590 x 385 x 99mm
➤ IP Protection	IP6K9K/ IP67
➤ Functional safety	ASIL B
➤ Isolation input/output	DIN EN 61851-1 2012-01
➤ AC overvoltage protection	Yes
➤ AC undervoltage protection	Yes
➤ Short circuit/ overcurrent protection	Yes
➤ Over temperature protection	Yes
➤ Insulation resistance	Yes
➤ +24V/12V reverse polarity protection	Yes
➤ Communication failure protection	Yes
➤ Passive Discharge	Yes



Let's Do Something Unique and Valuable



Contact us: 

Phone: (747) 955-2555

Email: info@hepeg.com

Web: www.hepeg.com

Location: Los Angeles, CA

Thank You !

