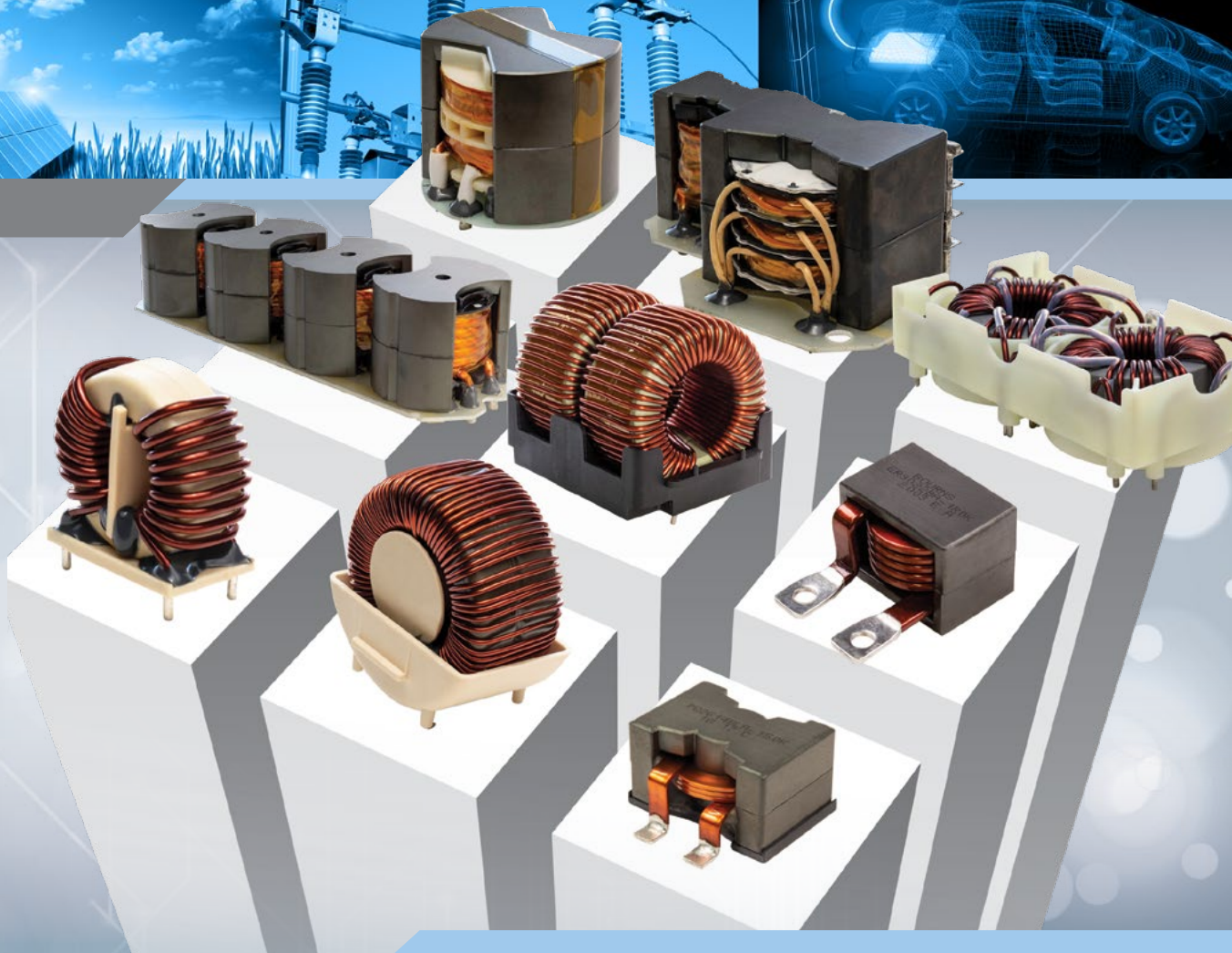




# Bourns Power Conversion Components Custom Magnetics



**BOURNS®**

# Overview

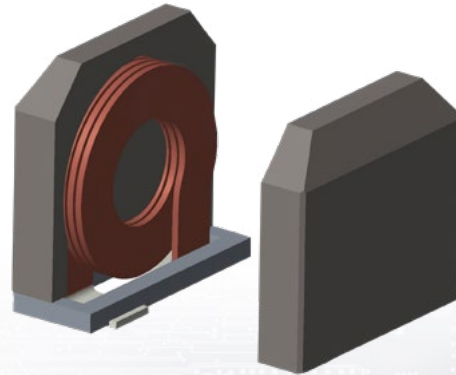
Bourns offers a broad portfolio of custom power conversion magnetic components, such as transformers, inductors and common mode chokes.

- Components and modules are designed to address needs in automotive, industrial, communications and consumer markets.
- Major applications include Battery Management Systems (BMS), On/Off-Board Charging (OBC), Energy Storage Systems (ESS), High-frequency Switching Mode Power Supply Systems (SMPS).
- Bourns® Custom Magnetics are produced in IATF 16949 and ISO 14000 certified factories.
- Bourns® components and modules are designed for high-efficiency, compact size and excellent thermal management. They comply with typical customer-requested safety agency standards, including the following:
  - UL 2231
  - UL 60601
  - UL 60950-1
  - UL 62368-1
  - IEC 60664-1
  - IEC 61558-2
  - IEC 62752
  - IEC 62955
  - CSA 22.2
- Bourns production facilities are equipped with test and design verification tools.



## INDUSTRY STANDARDS

- UL 508, EN 61558-1, EN 60950, EN 60368-1
- Insulation Class B 125 °C, Class F 155 °C and Class H 180 °C



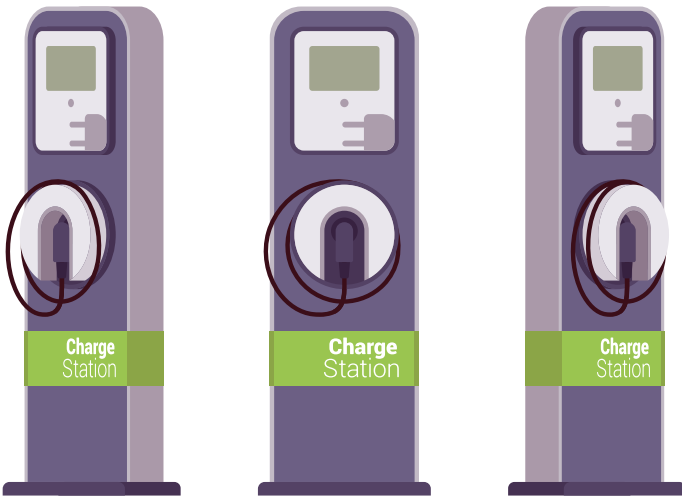
## QUALITY

- VDA 6.3, Factory IATF 16949 certified
- High Frequency Power Topologies: Buck, Boost, SEPIC, CUK, Half and Full Bridge LLC, Push-pull, Forward, Flyback

# Custom Magnetics Applications



- On-Board Charging (OBC)
- EV Charging Stations
- Renewable Energy
- Energy Storage
- Home Appliances
- High Power Switch Mode Power Supplies (SMPS)
- Communications
- Motor Drives



# Custom Magnetics Products



## 1 kW Transformers

- LLC Converter
- High Isolation from Primary to Secondary
- UL and IEC Compliant



## 2.8 kW Transformers

- Phase Shifted Full Bridge
- Separate Resonant Inductor
- Very Low DCR for High Current Output



## 5.5 kW Transformers

- LLC Resonant Converter
- Low Leakage in Transformer
- Integrated Resonant Inductor



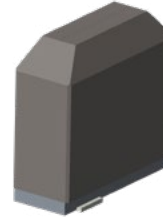
## Transformers for High Power (<7 kW)

- For Half Bridge and Full Bridge LLC Converters
- Working Voltages of Up to 1000 V
- Reinforced Isolation
- Ultra-low Copper and Core Losses
- High Frequency (3 MHz) Cores



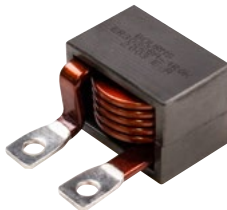
## SMT Inductors

- Flat Wire Construction
- Low AC Resistance
- High Saturation Currents
- Low Core Loss
- SMT Leads
- Mechanical Terminals Available



## Vertical Inductors

- High Density
- Lower Power Loss
- Design for Automation
- Better DCR Performance
- Helical Wound Coil
- AEC-Q200 Compliant



## High Current Inductors

- Very Stable Performance Versus Temperature
- High Self-resonance Frequency
- AEC-Q200 Compliant



## PFC Inductors

- Power Factor Chokes
- For Boost Circuits
- 500 W to 10 kW
- High Saturation Current



## Common Mode Chokes

- EMI Output Filter
- High Current
- DC Line Voltage
- AEC-Q200 Compliant



## CM and DMC Chokes

- UL Licensed Materials
- Lower Power Loss
- High Isolation
- Better DCR Performance
- AEC-Q200 Compliant



## 4-Phase Common Mode Chokes

- EMI Filter Inductors
- High Current
- AC Line Voltage
- AEC-Q200 Compliant



## Common Mode Chokes

- Inductance: 125  $\mu$ H  $\pm$ 35 %
- Rated: 15.4 A
- Up to 2.0 kVrms Isolation
- AEC-Q200 Compliant

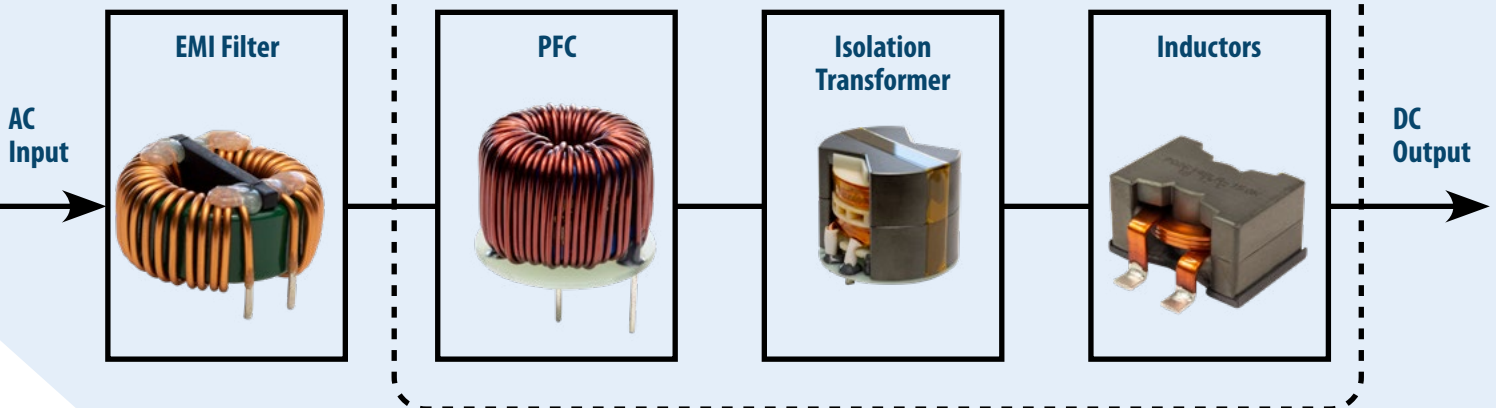
# Design Capabilities

- EMI Reduction
- Design Services
- Finite Element Analysis
- 1 kW, 5 kW, 10 kW, >50 kW
- Thermal Management
- Aluminum Heatsinks and Thermal Compounds
- AEC-Q200 Compliance Testing Available
- Custom Cores
- Custom Bobbins
- Aluminum Housings
- Thermal Potting
- Flat Wire Windings
- Design Verification Test Facilities



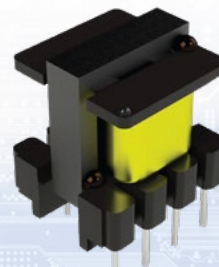
## AC/DC Converter

## Filter



### Input AC Common Mode Chokes

- UL and IEC Compliant
- Very High Permeability core materials
- High Current



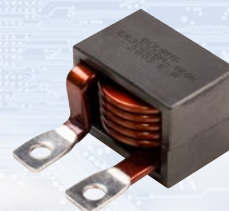
### Transformers

- LLC Resonant Converter
- High Isolation
- UL and IEC Approvals
- Litz wire Winding



### Common Mode Chokes

- Inductance: 125  $\mu\text{H} \pm 35\%$
- Rated: 15.4 A
- Up to 2.0 KVrms Isolation
- AEC-Q200 Compliant



### Output Inductors

- High Current Inductor
- Flat Wire for low DC Resistance
- High Efficiency

# Worldwide Sales/Representative Offices



<b>Country</b>	<b>Phone</b>	<b>Email</b>
Americas:	+1-951-781-5500	americus@bourns.com
Brazil:	+55 11 5505 0601	americus@bourns.com
China:	+86 21 64821250	asiacus@bourns.com
Europe, Middle East, Africa:	+36 88 885 877	eurocus@bourns.com
Japan:	+81 49 269 3204	asiacus@bourns.com
Korea:	+82 70 4036 7730	asiacus@bourns.com
Singapore:	+65 6348 7227	asiacus@bourns.com
Taiwan:	+886 2 25624117	asiacus@bourns.com
Other Asia-Pacific Countries:	+886 2 25624117	asiacus@bourns.com

<b>Technical Assistance Region</b>	<b>Phone</b>	<b>Email</b>
Asia-Pacific:	+886 2 25624117	techweb@bourns.com
Europe, Middle East, Africa:	+36 88 885 877	eurotech@bourns.com
Americas:	+1-951-781-5500	techweb@bourns.com

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Specifications subject to change without notice. Actual performance in specific customer applications may differ due to the influence of other variables. Customers should verify actual device performance in their specific applications.