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ABOUT STANDEX

Customer Focused Engineering Solutions. “Innovating for more than 50 years.”

The Standex Electronics business, a division of Standex International Corporation (NYSE:SXI), has been providing solutions, through high-performing products since the 1950’s. Through growth, acquisition, strategically partnering with customers, and applying the latest engineering designs to the needs of our ever-changing world, Standex Electronics technology has been providing quality results to the end-user. The approach is achieved by partnering with customers to design and deliver individual solutions and products that truly address customers’ needs.

Standex Electronics is headquartered in Cincinnati, Ohio, USA. Standex Electronics has nine manufacturing facilities in six countries, located in the United States, Germany, China, Mexico, the United Kingdom, and Japan.

That’s Standex | Smart.
WHO WE ARE / WHERE WE PLAY

Powerfully transforming. “When failure is not an option, designers of critical electronic components rely on Standex and their decades of experience.”

We offer engineered product solutions for a broad spectrum of product applications in all major markets, including but not limited to:

• Aerospace & Military
• Alternative Energy
• Automotive (EV) & Transportation
• Electric Power & Utilities
• Medical
• Smart Grid & Metering
• Industrial & Power Distribution
• Test & Measurement
• Security & Safety
• Household & Appliances

Our values and what we believe align to the partner, solve, and deliver® approach. We produce parts but we are more than that. Connecting with your team as a strategic partner, listening to your challenges, and arriving at ways to solve your complex problems through our solutions are why we exist. We have custom capabilities that address your needs. Our team leverages our dynamic and diverse engineering expertise and other resources such as our global facilities for logistics and production.

Standex Electronics is a worldwide market leader in the design, development and manufacture of custom magnetics and power conversion components and assemblies. Our work, growth, and dedication to providing reliable high-quality products through our engineering and manufacturing expertise go beyond products we ship.

Seit über 50 Jahren ist Standex Electronics auch innovatives Unternehmen mit neuesten Produkten, unterschiedlichsten Kundenprojekten und dem Ausbau unserer globalen Präsenz am Markt verantwortlich und kann dadurch ein stetiges Wachstum verzeichnen.

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OUR CAPABILITIES

MANUFACTURING
- 52 to Saw Magnetic Wire Winding
- Foil, Flat, & Square Wire Winding
- Automatic CNC Winding
- Bobbin, Layer, & Self-Supporting Winding
- Toroidal Hook & Shuttle Winding
- Thermoplastic & Thermoset Overmolding
- Impregnation, Coating, & Potting
- Voids-Free Vacuum Potting
- NASA Certified Soldering
- Wire Prep & Harness Assembly
- Injection Molding
- Metal & Plastic Fabrication
- Lean Manufacturing Principles
- Complete, In-House Machine Shop
- Poka-Yoke “Mistake Proofing”

ENGINEERING
- 3-D CAD Modeling
- 3-D Printing
- Mechanical Design & Packaging
- Rapid Prototyping
- Magnetic Simulation Software
- Mechanical, Thermal & FEA Analysis
- Plastic Mold Flow Simulation
- APQP Project Management

QUALITY & COMPLIANCE
- AS9100 & IATF16949 Certifications
- ITAR Compliance
- Regulatory Agency Approvals
- PRP & First Article Inspection
- SPC Data Collection

TESTING & LAB CAPABILITIES
- Automated Transformer Testing
- Medical Safety Testing
- High Voltage/Partial Discharge Testing
- Full Load & Temperature Rise Testing
- 2-D/3-D Microscopic X-ray Inspection
- Digital Microscopic Inspection
- MIL-STD-202 In-House Qualification Testing
- Mechanical, Shock & Vibration
- Burn-In & Life Testing
- Thermal Shock & Temperature Cycling
- Humidity, Salt Fog, & Solderability
- Moisture Resistance & Seal Testing

Registered AS9100 ISO9001 CERTIFIED ITAR 16949

That's Standex Strong.

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Our Process

- Open Engineering Team Dialogue
- Footprint Negotiations
- Optimize Efficiency
- Electrical & Thermal Modeling
- Preliminary Design Approval
- Identify Custom Components
- Specify Terminations
- Thermal Management Design
- Generate Print & Quotation
- Final Design Approval
- Generate BOM
- Order Material
- Queue Samples
- Sample Build
- EL Test & Report
- Application Testing
- Feedback
- Iterations If Necessary

- Production Order
- APQP
- FAL
- DFMEA & PFMEA
- Line Audit
- FAI
- PPAP
- Delivery
- Sustaining Engineering

Complex problems deserve custom solutions - As your "application engineering experts", we deliver custom design, development, and manufacture of reliable high-quality planar magnetics that are used across all major markets.

Fill out a design request today!
Planar magnetics offer improved power density and performance compared to equivalent wire wound designs.

**PLANAR MAGNETICS**

---

**Global Design and Manufacturing**
- Experienced in creating custom solutions for partners across the globe
- Capable of leveraging global supply chains on behalf of our partners
- Global manufacturing locations provides options regarding cost vs timing

**Ready and Willing to Grow with Our Partners**
- Part of a $1B publicly traded corporation with access to capital markets
- Able to make investments to grow our capacity along with our partners
- Forward focused supplier that you can depend on in the long run

**Deep Technical Expertise**
- Over 100 years of custom magnetics design experience
- Capable of proving design calculations, simulations and prototype samples
- Portfolio of technical solutions developed through years of custom designs
- US Patent 7,129,809 for surface mount header
- US Patent 7,460,002 for custom terminal design
- Portfolio of technical solutions developed through years of custom designs
- US Patent 7,129,809 for surface mount header
- US Patent 7,460,002 for custom terminal design
- Custom encapsulation/opting methods to meet isolation requirements

**Broad Product Portfolio and Capabilities**
- Experienced manufacturer of both planar and traditional magnetic designs
- Wide power range of 25W to 250kW and frequency range of 20kHz-1MHz+
- One-stop shop able to fully test components to meet rigorous certifications

---

**ADVANTAGES OF WORKING WITH STANDEX ELECTRONICS**

**Minimized Footprint**
- Planar better utilizes core space, enabling more compact magnetic designs
- Standex uses ER Cores, which allows most compact designs in the industry
- Flexible termination designs allow fit into existing space with minimal redesign

**Optimized Performance**
- High power density enables 99%+ efficiency with significantly lower material
- Optimized core cross section and low turn count minimizes losses
- Compact design better allows heat transfer out of components

**High Reliability**
- Elimination of hand winding reduces part to part variation
- Use of PC boards and encapsulation methods allow high isolation
- ER core geometry reduces EMI that may interfere with sensitive equipment of custom designs

**Partner in Innovation**
- Experience in fully custom designs for customers large and small
- Plastic molding expertise, enabling unique isolation and value-add solutions
- Capable of providing full thermal management designs, as needed

---

That’s Standex | Smart.

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“Planar technology is making headway in some of the most demanding applications and emerging markets.”

We offer engineered planar magnetics solutions for a broad spectrum of product applications in all major markets. Battery charging, electric vehicles, solar inverters, aviation, healthcare, and industrial markets are just some of the areas where planar technology is gaining ground.

APPLICATIONS
Automotive, Electric & Hybrid Vehicles
Renewable Energy - Wind & PV Systems
Aerospace & Military (high reliability & repeatability)
Welding, Lasers & Test Equipment
DC-DC Converters
AC-DC Resonant Designs
Appliances
Battery Charging (12V, 24V, 48V, 1-10 kW)
Switch Mode Power Supplies
Distributed Isolated Power
Feedback Control
High Current POI Converters
High Power LED Lighting & Industrial Power
Isolated Inverters
Isolated (unregulated) Bus Conv (Vout 9-12V)
Server – Data Centers (400VDC)
Telecom (“Sweet Spot” 36-72 Vin 40-250W)

“Planar transformers and inductors are the ideal solution for efficient SMPS applications.”

BATTERY MANAGEMENT SYSTEM
Power Range 250W
- Transformer

DC/DC CONVERTER
Power Range 1W - 76W
- Main Transformer
- Output Choke
- Resonant Inductor

FAST CHARGER
Power Range 75W - 100W
- Main Transformer
- Resonant Inductor

ONBOARD CHARGER
Power Range 3.5kW - 6.6kW
- Main Transformer
- Resonant Inductor

RAPID CHARGER
Power Range 10kW - 100kW
- Main Transformer
- Resonant Inductor

DC/DC CONVERTER
Power Range 1W - 76W
- Main Transformer
- Output Choke
- Resonant Inductor

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**CUSTOMER CONFIGURATIONS**

- Soft switching, single or multiple outputs
- Wide switching frequency range
- Input/output voltages
- Optimized turns ratio
- Thermal solutions: heat sinks, etc.
- Multiple terminal/termination options
- Inductors available for design in all packages
- Value-added assemblies

---

**TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT**

<table>
<thead>
<tr>
<th>Size</th>
<th>Optimum Power Range</th>
<th>Maximum Current Rating</th>
<th>Optimum Frequency Range</th>
<th>Isolation Pre-Core</th>
<th>Pre-Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>025</td>
<td>10 - 50 W</td>
<td>14 A</td>
<td>25 V</td>
<td>17 V</td>
</tr>
<tr>
<td>Mid</td>
<td>035</td>
<td>20 - 150 W</td>
<td>15 A</td>
<td>30 V</td>
<td>23 V</td>
</tr>
<tr>
<td>High</td>
<td>055</td>
<td>50 - 200 W</td>
<td>16 A</td>
<td>40 V</td>
<td>25 V</td>
</tr>
<tr>
<td></td>
<td>075</td>
<td>100 - 500 W</td>
<td>17 A</td>
<td>60 V</td>
<td>25 V</td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>150 - 700 W</td>
<td>18 A</td>
<td>80 V</td>
<td>29 V</td>
</tr>
<tr>
<td></td>
<td>135</td>
<td>300 - 1250 W</td>
<td>19 A</td>
<td>100 V</td>
<td>32 V</td>
</tr>
</tbody>
</table>

---

**CUSTOM CONFIGURATIONS**

- **Inductors, >30kW**
- **Thermal Solutions**, and **Custom Terminations**

**HIGH POWER 10kW-250kW**

- **SIZES**: 900, 2100, 4000

**MID POWER 1kW-10kW**

- **SIZES**: 220, 350, 560

**LOW POWER 10W-1kW**

- **SIZES**: 035, 055, 075, 110, 135

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**Surface mount solution with increased creepage and clearance**

---

**Custom 6kW transformer with narrow footprint and custom heatsink**

---

**Custom control transformer with multiple outputs**
“High Frequency Efficiency”

Size 025-135 is ideally suited for low power applications with an optimal power range of 10W-1kW. This size offers volumetric efficiency with low AC losses in a low profile, ultra compact package, as well as excellent repeatability and thermal management characteristics.

**APPLICATIONS**
- Renewable Energy - Photovoltaic Systems
- Aerospace & Military (high reliability & repeatability)
- Test Equipment
- Switch Mode Power Supplies
- Distributed Isolated Power
- Telecommunications
- Battery Management Systems
- Automotive, Electric & Hybrid Vehicles

**CUSTOMER CONFIGURATIONS**
- Soft switching, single or multiple outputs
- Wide-switching frequency range
- Input/output voltages
- Optimized turns ratio
- Host interface & heat sinks, etc.
- Multiple terminal/termination options
- Custom footprints for isolation requirements

**TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT**
- Optimum Power Range: 10W - 1kW
- Current Rating Max.: 5-100A (+30% for THT)
- Optimum Frequency Range: 300 - 500kHz
- Mounting Options: Surface Mount (SMD), Through-Hole (THT)
- Topologies: Forward, Flyback, Full Bridge, Full Bridge (ZVS), Half Bridge, Half Bridge (ZVS), Push-Pull

**Typical Dimensions:**

<table>
<thead>
<tr>
<th>L</th>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-45mm</td>
<td>16-32mm</td>
<td>6-20mm</td>
</tr>
</tbody>
</table>

Length (L) May Vary Depending On Terminals
Height (H) Depending On Input & Output Requirements

That's Standex Strong.

standexelectronics.com
**TRANSFORMER DESIGN | EXAMPLE - PQC2158 (U.S. PAT. 7,129,809)**

**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topology</td>
<td>Forward w/Active Reset</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>15-42VDC</td>
</tr>
<tr>
<td>Maximum Isolation Voltage</td>
<td>2000VDC</td>
</tr>
<tr>
<td>Switching Frequency</td>
<td>300kHz</td>
</tr>
<tr>
<td>Duty Cycle at Low Input Voltage</td>
<td>53.0%</td>
</tr>
<tr>
<td>Secondary Output Voltage/Current</td>
<td>15VDC/2ADC</td>
</tr>
<tr>
<td>Maximum Efficiency At Nominal Input</td>
<td>98.2% (0.53W losses)</td>
</tr>
<tr>
<td>Secondary Resistance, Rs, Max.</td>
<td>65mOhm</td>
</tr>
<tr>
<td>Operating Ambient Range (Full Load)</td>
<td>-20°C to +85°C</td>
</tr>
<tr>
<td>Leakage Inductance, 1-2/3-4 Shorted, Typ.</td>
<td>0.2µH</td>
</tr>
<tr>
<td>Weight Range (Approximate)</td>
<td>12-50 grams</td>
</tr>
</tbody>
</table>

**NOTES:**
1) PATENTED HEADER AND SURFACE MOUNT TERMINATIONS PROVIDE REPEATABLE COPLANARITY FOR MANUFACTURING.
2) THROUGH-HOLE OR SURFACE MOUNT AVAILABLE

---

**TRANSFORMER DESIGN | EXAMPLE - PQC1686**

**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topology</td>
<td>Forward w/Active reset</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>16-72VDC</td>
</tr>
<tr>
<td>Maximum Isolation Voltage</td>
<td>2000VDC</td>
</tr>
<tr>
<td>Switching Frequency</td>
<td>300kHz</td>
</tr>
<tr>
<td>Duty Cycle at Low Input Voltage</td>
<td>61%</td>
</tr>
<tr>
<td>Secondary Output Voltage/Current</td>
<td>24VDC</td>
</tr>
<tr>
<td>Maximum Efficiency At Nominal Input</td>
<td>97.50%</td>
</tr>
<tr>
<td>Secondary Resistance, Rs, Max.</td>
<td>9mOhm</td>
</tr>
<tr>
<td>Operating Ambient Range (Full Load)</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Leakage Inductance, Typ.</td>
<td>0.75µH</td>
</tr>
<tr>
<td>Weight Range (Approximate)</td>
<td>12-50 grams</td>
</tr>
</tbody>
</table>

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2) THROUGH-HOLE OR SURFACE MOUNT AVAILABLE

---

**SOLUTIONS | Planar Transformers & Inductors**

“Complex problems deserve custom solutions” Submit Your Design! standeelectronics.com/planar-transformer-request-form/
**SOLUTIONS | Planar Transformers & Inductors**

**TRANSFORMER DESIGN | EXAMPLE - PQC2075**

**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Topology</th>
<th>Continuous Flyback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>(100-600 VDC) Nominal</td>
</tr>
<tr>
<td>Temp. Rise</td>
<td>+35°C</td>
</tr>
<tr>
<td>NOTES:</td>
<td></td>
</tr>
<tr>
<td>1) CUSTOM THROUGH HOLE FLYBACK DESIGN</td>
<td></td>
</tr>
<tr>
<td>2) PATENTED SURFACE MOUNT HEADER AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>3) THROUGH-HOLE OR SURFACE MOUNT AVAILABLE</td>
<td></td>
</tr>
</tbody>
</table>

**Input Voltage (100 VDC Nominal)**: 93-105VDC

**Minimum Isolation Voltage**: 1000VDC

**Output Voltage/Current After Rectification**: 36W (12V/3A)

**Primary To Secondary And Core**: 1000VDC

**Secondary To Primary And Core**: 500VDC

**Primary To Secondary And Core**: 1000VDC

**Duty Cycle, Max. At Low Input Voltage**: 53.0%

**Leakage Inductance 1-2/3-4 Shorted, Typ.**: 5µH

**Efficiency At Vin=100VDC/36W Output Calculated**: 97.2% (1W losses)

**Operating Ambient Range (Full Load)**: -11°C to +70°C

**Weight Range (Approximate)**: 12-50grams

**TRANSFORMER DESIGN | EXAMPLE - PQC2018**

**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Topology</th>
<th>Forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>(100-600 VDC) Nominal</td>
</tr>
<tr>
<td>Temp. Rise</td>
<td>+40.5°C</td>
</tr>
<tr>
<td>NOTES:</td>
<td></td>
</tr>
<tr>
<td>1) CUSTOM THROUGH HOLE FORWARD DESIGN</td>
<td></td>
</tr>
<tr>
<td>2) PATENTED SURFACE MOUNT HEADER AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>3) THROUGH-HOLE OR SURFACE MOUNT AVAILABLE</td>
<td></td>
</tr>
</tbody>
</table>

**Input Voltage**: 47-100VDC

**Minimum Isolation Voltage**: 1000VDC

**Output Voltage/Current After Rectification**: 100W/(20VDC/5A)

**Primary To Core**: 500VDC

**Turns Ratio - Np/Ns**: 10T/10T

**Secondary To Core**: 1500VDC

**Switching Frequency**: 150kHz

**Primary Inductance, Np, Min.**: 250µH

**Duty Cycle at Vin=47V, 1V Output Diode Drop**: 45.0%

**Primary Resistance, Np, Max.**: 25mOhm

**Duty Cycle at Vin=100V, 1V Output Diode Drop**: 21.0%

**Secondary Resistance, Ns, Max.**: 30mOhm

**Efficiency At Full Power Calculated**: 98.2% (1.8W losses)

**Leakage Inductance 1-2/3-4 Shorted, Typ.**: 0.4µH

**Ambient Temp, Max.**: +70°C

**Weight Range**: 20-70grams

“Complex problems deserve custom solutions” Submit Your Design! | standexelectronics.com/planar-transformer-request-form/
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**SOLUTIONS | Planar Transformers & Inductors**

**ELECTRICAL SPECIFICATIONS**

**Topology**
- Full Bridge ZVS

**Input Voltage**
- 42-56VDC

**Minimum Isolation Voltage**
- 1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
- 2) HEATSINK & THERMAL SOLUTIONS AVAILABLE

**Output Voltage/Current After Rectification**
- Ns1: 120VDC/3.5A (420W)
- Nboost: 2121VDC

**Primary To Secondary**
- 3T/9T

**Secondary To Core**
- 500VDC

**Switching Frequency**
- 200kHz

**Primary Inductance, Np, Min.**
- 27µH

**Duty Cycle, Max. At Low Input Voltage**
- 97.0%

**Primary Resistance, Np, Max.**
- 1.8mOhm

**Efficiency At Full Power Calculated**
- 98.95% (4.4W losses)

**Secondary Resistance, Ns, Max.**
- 16mOhm

**External Ambient Temp, Max.**
- +35°C

**Leakage Inductance 1-2/3-4 Shorted, Typ.**
- 50nH

**Weight Range**
- 50-150grams

**TRANSFORMER DESIGN | EXAMPLE - PQC2183**

**ELECTRICAL SPECIFICATIONS**

**Topology**
- Boost Forward

**Input Voltage**
- 120-150VDC

**Minimum Isolation Voltage**
- 1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE & HEATSINK SHOULD BE UTILIZED
- 2) PATENTED SURFACE MOUNT HEADER AVAILABLE
- 3) HEATSINK & THERMAL SOLUTIONS AVAILABLE

**Output Voltage/Current After Rectification**
- Nboost: 200-300VDC/500-250mA
- Ns1: 0-30VDC/4A

**Primary To Secondary**
- Ns1 And To Core

**Secondary To Core**
- 500VDC

**Turns Ratio - Np/Nboost/Ns**
- 18T/12T/6T

**Primary Inductance, Np, Min.**
- 900µH

**Switching Frequency**
- 250kHz

**Primary Resistance, Rdc, Np, Max.**
- 140mOhm

**Duty Cycle, Max. At Low Input Voltage**
- 60.0%

**Secondary Resistance, Rdc, Ns, Max.**
- 18mOhm

**Efficiency At Full Power Calculated**
- 98.3% (2.5W losses)

**Boost Winding Resistance, Rdc, Nboost, Max.**
- 80mOhm

**Ambient Temp, Max.**
- -55°C to +85°C

**Leakage Inductance 2-3/4-5 Shorted, Typ.**
- 2µH

**Mounted On Heatsink With Max. Temp.**
- +65°C

**Weight Range**
- 30-120grams

**TRANSFORMER DESIGN | EXAMPLE - PQC2066**

**ELECTRICAL SPECIFICATIONS**

**Topology**
- Full Bridge ZVS

**Input Voltage**
- 12-60VDC

**Minimum Isolation Voltage**
- 470/500VDC

**Primary To Secondary**
- Ns1 And To Core

**Switching Frequency**
- 200kHz

**Primary Inductance, Np, Min.**
- 4.2µH

**Primary Resistance, Rdc, Np, Max.**
- 50mOhm

**Duty Cycle, Max. At Low Input Voltage**
- 90%

**Secondary Resistance, Rdc, Ns, Max.**
- 18mOhm

**Efficiency At Full Power Calculated**
- 98.95% (4.4W losses)

**Primary To Secondary**
- Ns1 And To Core

**Secondary To Core**
- 500VDC

**Turns Ratio - Np/Nboost/Ns**
- 3T/9T

**Primary Inductance, Np, Min.**
- 17µH

**Switching Frequency**
- 200kHz

**Primary Resistance, Rdc, Np, Max.**
- 20mOhm

**Duty Cycle, Max. At Low Input Voltage**
- 97.0%

**Secondary Resistance, Rdc, Ns, Max.**
- 25mOhm

**Efficiency At Full Power Calculated**
- 98.95% (4.4W losses)

**Primary To Secondary**
- Ns1 And To Core

**Secondary To Core**
- 500VDC

**Turns Ratio - Np/Nboost/Ns**
- 3T/9T

**Primary Inductance, Np, Min.**
- 17µH

**Switching Frequency**
- 200kHz

**Primary Resistance, Rdc, Np, Max.**
- 20mOhm

**Duty Cycle, Max. At Low Input Voltage**
- 97.0%

**Secondary Resistance, Rdc, Ns, Max.**
- 25mOhm

**Efficiency At Full Power Calculated**
- 98.95% (4.4W losses)
MID POWER // 1kW-10kW

"Meets Critical Power Demands For EV Fast Charging"

Size 220, 350, and 560 are ideally suited for mid power applications with an optimal power range of 1kW-10kW. This size offers volumetric efficiency with low AC losses in a low profile, ultra compact package, as well as excellent repeatability and thermal management characteristics.

APPLICATIONS
• Fast Charging
• Automotive, Electric & Hybrid Vehicles
• Renewable Energy
• Aerospace & Military (high reliability & repeatability)
• Welding, Soldering & Test Equipment
• Solid State Relays
• AC-DC resonant designs
• Battery Management Systems
• Switch Mode Power Supplies
• Distributed Isolated Power

CUSTOMER CONFIGURATIONS
• Soft switching, single or multiple outputs
• Wide switching frequency range
• Input/output voltages
• Optimized turns ratio
• Thermal solutions heat sinks, etc.
• Multiple terminal/termination options
• Value-added assemblies

TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT

Optimum Power Range: 1kW - 10kW
Current Rating Max.: 45-72A (+30% for THT)
Optimum Frequency Range: 40 - 250kHz
Mounting Options: Through-Hole (THT)
Topologies:
- Full Bridge, Full Bridge (ZVS), Half Bridge, Half Bridge (ZVS), Push-Pull, Resonant

 Typical Dimensions:

<table>
<thead>
<tr>
<th>L (Length)</th>
<th>W (Width)</th>
<th>H (Height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-72mm</td>
<td>41-64mm</td>
<td>18-31mm</td>
</tr>
</tbody>
</table>

Length (L) May Vary Depending On Terminals
Height (H) Depending On Input & Output Requirements

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TRANSFORMER DESIGN | EXAMPLE - PQC1834

**Electrical Specifications**

**Topology**

Full Bridge ZVS

**Input Voltage**

350-450VDC

**Primary To Secondary And Core**

1000VAC

**Minimum Isolation Voltage**

NOTES:

1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED

2) PATENTED TERMINALS AVAILABLE FOR SHIELDING ON HIGH CURRENT WINDING

**Output Voltage/Current After Rectification**

800W (320VDC/2.5ADC)

Primary To Core

500VAC

**Turns Ratio - Np/Ns**

5T/40T

**Primary Inductance, Np, Min.**

150µH

**Switching Frequency**

100kHz

**Primary Resistance, Np, Max.**

2mOhm

**Duty Cycle, Max. 2.5A Operation**

88%

**Secondary Resistance, Max.**

200mOhm

**Efficiency At Full Output 2.5A Operation (Calc.)**

99.25% (6W losses)

**Leakage Inductance 3-4/1-2 Shorted, Typ.**

8.0µH

**External Heatsink Temperature Max.**

+20°C (2.5A operation)

**Weight Range**

100-250grams

**Transformer Clamped To Heatsink**

| Size 220 | 1kW-3kW |

**Design Example**

TRANSFORMER DESIGN | EXAMPLE - PQC2159

**Electrical Specifications**

**Topology**

Push Pull

**Input Voltage**

23-125VDC

**Output Voltage Current After Rectification**

Primary To Core, Secondary N+1 And Naux1 1100VAC

Secondary To Core 1200VDC

**Input Voltage**

1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED

2) PATENTED TERMINALS AVAILABLE FOR SHIELDING ON HIGH CURRENT WINDING

**Output Voltage/Current After Rectification**

Ns1+Ns2 (320W Nom. Power) 13VDC/24.6A

Secondary Ns1 To Core 500VDC

Naux1+Naux2 16VDC/0.04A

Naux To Core 1500VAC

**Turns Ratio - Np1/Np2/Ns1/Ns2/Naux1/Naux2**

3T/3T/2T/2T/3T/3T

**Primary Inductance, Np1 And Np2, Min.**

45µH

**Switching Frequency**

70kHz

**Primary Resistance, Rdc, Np1 And Np2, Max.**

2.5mOhm

**Duty Cycle, Max. Vin=23VDC**

88.0%

**Secondary Resistance, Rdc, Np1 And Np2, Max.**

1.2mOhm

**Efficiency At Full Power (Calc.)**

99% (3.2W losses)

**Leakage Inductance Np1+Np2/Ns1+Ns2 Shorted, Typ.**

150nH

**Mounted On Heatsink With Max. Temp.**

+60°C

**Weight Range**

100-250grams

**Transformer Design**

| Size 220 | 1kW-3kW | DESIGN EXAMPLE

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### ELECTRICAL SPECIFICATIONS

**Inductance At Rated Current**
- 2.4µH ±3%

**Rated Current**
- 100A

**Ripple Frequency**
- 150kHz

**Resistance Max.**
- 1mOhm

**Minimum Isolation Voltage (Winding To Core)**
- 2000VDC

**Total Losses**
- 10W

**Minimum Isolation Voltage (Secondary To Core)**
- 100A surge, 28.4VDC/83A

**Primary To Secondary And Core**
- 2500VAC for 1min

**Secondary To Core**
- 500VDC

**Switching Frequency**
- 100kHz

**Primary Resistance, Rdc, Np, Max.**
- 22mOhm

**Duty Cycle At Low Input**
- 80.0%

**Efficiency At Full Power (Calculated)**
- 99.1% (21W losses)

**Leakage Inductance 1-2/3-4-5 Shorted, Typ.**
- 1.5µH

**Baseplate/Heatsink Temperature Max.**
- +85°C

**Weight Range**
- 150-400grams

**Mounted On Heatsink With Max. Temp.**
- +90°C

---

### TRANSFORMER DESIGN | EXAMPLE - PQC1954 (U.S. PAT. 7,460,002)

**Topography**
- Full Bridge ZVS

**Input Voltage**
- 350-750VDC

**Minimum Isolation Voltage**
- 1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
- 2) PATENTED TERMINALS AVAILABLE FOR SPLITTING HIGH CURRENT WINDING

**Output Voltage/Current After Rectification**
- 28.4VDC/83A, 100A surge

**Secondary Resistance, Rdc, Ns, Max.**
- 1mOhm (0.5+0.5mOhm)

**Primary Resistance, Rdc, Np, Max.**
- 0.5mOhm (0.5+0.5mOhm)

**Duty Cycle At Low Input**
- 76.0%

**Efficiency At Full Power (Calculated)**
- 98.0% (20W losses)

**Leakage Inductance 1-2/3-4-5 Shorted, Typ.**
- 4.5µH

**Baseplate/Heatsink Temperature Max.**
- +90°C

**Weight Range**
- 150-400grams

**NOTES:**
1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
2) PATENTED TERMINALS AVAILABLE FOR SPLITTING HIGH CURRENT WINDING

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**SIZE 220**

**1kW-3kW**

**DESIGN EXAMPLE**

**INDUCTOR DESIGN | EXAMPLE - PQC2039**

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**TRANSFORMER DESIGN | EXAMPLE - PQC1954 (U.S. PAT. 7,460,002)**

**SOLUTIONS  |  Planar Transformers & Inductors**

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**Transformer Design | Example - PQC214**

- **Topology:** Full Bridge ZVS
- **Input Voltage:** 110-150VDC
- **Output Voltage:** 3100VDC/0.5A (1.55kW max)
- **Turns Ratio:** 4T/60T + 60T
- **Primary to Core:** 500VAC
- **Secondary to Primary: 3000VDC**
- **Switching Frequency:** 100kHz
- **Primary Inductance, Np:** 100µH
- **Secondary Resistance:** 800mOhm
- **Efficiency:** 99.3% (11W losses)
- **Primary Resistance, Np:** 2mOhm
- **Duty Cycle:** 95%
- **Ambient Temperature Max:** +20°C
- **Leakage Inductance:** 0.2µH
- **Airflow Temperature, Speed:** 50CFM
- **Weight Range:** 150-400grams

**Notes:**
1) For optimal performance, a thermally conductive substrate between ferrite and heatsink should be utilized.
2) Patent terminals available for splitting high current winding.

**Inductor Design | Example - PQC2136**

- **Inductance at Rated Current:** 0.5µH ±3%
- **Temp. Rise Hot Spot Baseplate (Heatsink Cooling), Max.:** +40°C
- **Rated Current (Ave. ±12.5A Ripple):** 250A
- **Ripple Frequency:** 200kHz
- **Resistance Max.:** 0.2mOhm
- **Minimum Isolation Voltage (Winding to Core):** 500VDC
- **Total Losses:** 18.4W

**Notes:**
1) For optimal performance, a thermally conductive substrate between ferrite and heatsink should be utilized.
2) Patent terminals available for splitting high current winding.

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### ELECTRICAL SPECIFICATIONS

**Topology**
- Full Bridge ZVT

**Input Voltage**
- 760-840VDC

**Primary Inductance, Np, Min.**
- 600µH

**Secondary Resistance, Ns, Max.**
- 18mOhm

**Primary Resistance, Rdc, Np, Max.**
- 20mOhm

**Secondary Resistance, Rdc, Ns, Max.**
- 18mOhm

**Switching Frequency**
- 100kHz

**Duty Cycle At Low Input Voltage Max.**
- 99.0%

**Efficiency At Full Power (Calculated)**
- 99.3% (87.4W Losses)

**Leakage Inductance 1-2/3-4 Shorted, Typ.**
- 1.8µH

**External Heatsink Temperature Max.**
- +45°C

**Weight Range**
- 300-800grams

*Heatsink Provided By Customer* 

### DESIGN EXAMPLE

**TRANSFORMER DESIGN | EXAMPLE - PQC1901 (U.S. PAT. 7,460,002)**

**Topology**
- Half Bridge ZVS

**Input Voltage**
- 800VDC

**Primary Inductance, Np, Min.**
- 4000µH

**Secondary Resistance, Ns, Max.**
- 0.25mOhm

**Switching Frequency**
- 50kHz

**Duty Cycle, Max.**
- 100%

**Efficiency At Full Power (Calculated)**
- 99.24% (47W Losses)

**Leakage Inductance 1-2/3-4-5 Shorted, Typ.**
- 3µH

**Ambient Temp. Max. (Transfer clamped to heatsink)**
- +85°C

*Heatsink Provided By Customer* 

**TRANSFORMER DESIGN | EXAMPLE - PQC2123**

**Topology**
- Full Bridge ZVT

**Input Voltage**
- 1500VDC

**Primary Inductance, Np, Min.**
- 1600µH

**Secondary Resistance, Ns, Max.**
- 0.25mOhm

**Switching Frequency**
- 100kHz

**Duty Cycle At Low Input Voltage Max.**
- 99.0%

**Efficiency At Full Power (Calculated)**
- 99.3% (87.4W Losses)

**Leakage Inductance 1-2/3-4 Shorted, Typ.**
- 1.8µH

**External Heatsink Temperature Max.**
- +45°C

**Weight Range**
- 300-800grams

*Heatsink Provided By Customer*
**SOLUTIONS | Planar Transformers & Inductors**

**TRANSMOG RATIONS | PQC2116**

**ELECTRICAL SPECIFICATIONS**

- **Inductance At Rated Current**: 100µH ±10%
- **Temp. Rise Hot Spot Baseplate, Max.**: +46°C
- **NOTES:**
  1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
  2) PATENTED TERMINALS AVAILABLE FOR SPLITTING HIGH CURRENT WINDING
  3) CUSTOM TERMINALS CAN BE DESIGNED AND OPTIMIZED

**Parameters**

- **Rated Current (Ave. ±12.5A Ripple)**: 32ADC +3App
- **Heatsink Temperature Max.**: +55°C
- **Ripple Frequency**: 100kHz
- **Resistance Max.**: 22mOhm
- **Minimum Isolation Voltage (Winding To Core)**: 2500VDC
- **Total Losses At Max. Current**: 28.7W

**INDUCTOR DESIGN | EXAMPLE - PQC2112 (U.S. PAT. 7,460,002)**

**ELECTRICAL SPECIFICATIONS**

- **Inductance At Rated Current**: 100µH ±10%
- **Temp. Rise Hot Spot Baseplate, Max.**: +46°C
- **NOTES:**
  1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
  2) PATENTED TERMINALS AVAILABLE FOR SPLITTING HIGH CURRENT WINDING
  3) CUSTOM TERMINALS CAN BE DESIGNED AND OPTIMIZED

**Parameters**

- **Input Voltage Np1 = 12 Turns (1-2)**: 350-630VDC
- **Minimum Isolation Voltage**: 1) FOR OPTIMAL PERFORMANCE A THERMALLY CONDUCTIVE SUBSTRATE BETWEEN FERRITE AND HEATSINK SHOULD BE UTILIZED
  2) PATENTED TERMINALS AVAILABLE FOR SPLITTING HIGH CURRENT WINDING
  3) CUSTOM TERMINALS CAN BE DESIGNED AND OPTIMIZED
- **Input Voltage Np2 = 16 Turns (1-3)**: 500-820VDC
- **Primary To Secondary And Core**: 2700VAC
- **Output Voltage/Current After Rectification**: 28VDC/250A (7kW)
- **Secondary To Core**: 500VDC
- **Turns Ratio - Np1/Np2/Ns1/Ns2**: 12T/16T/1T/1T
- **Primary Inductance, Np1 (1-2)/Np2 (1-3), Min.**: 1440/2560µH
- **Switching Frequency**: 100kHz
- **Primary Resistance, Rdc, Np1 (1-2)/Np2 (1-3), Max.**: 14/18mOhm
- **Duty Cycle, At Vin=350VDC Max.**: 99%
- **Secondary Resistance, Rdc, Ns1 + Ns2, Max.**: 0.3mOhm
- **Efficiency At Full Power (Calculated)**: 99.2% (55W losses)
- **Leakage Inductance 1-2/Sec. Shorted, Typ.**: 900nH
- **Leakage Inductance 1-3/Sec. Shorted, Typ.**: 1800nH
- **Weight Range**: 300-800grams

**Design Example**

**TRANSFORMER DESIGN | EXAMPLE - PQC2112**

**ELECTRICAL SPECIFICATIONS**

- **Input Voltage**: High = 12 Turns (1-2)
- **Secondary To Core**: 2700VAC
- **Output Voltage Current After Heat Sink**: 250VDC
- **Ripple Frequency**: 100kHz
- **Resistance Max.**: 22mOhm
- **Minimum Isolation Voltage (Winding To Core)**: 2500VDC
- **Total Losses At Max. Current**: 28.7W

**Parameters**

- **Size**: 560
- **Type**: 3kW-10kW

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APPLICATIONS
• Fast Charging
• Electric & Hybrid Transportation
• Renewable Energy - Wind & Photovoltaic Systems
• Aerospace & Military (high/repeat reliability)
• Welding, Lasers, & Test Equipment
• DC-DC Converters
• AC-DC resonant designs
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• Grid Energy Storage

CUSTOMER CONFIGURATIONS
• Soft switching, single or multiple outputs
• Wide switching frequency range
• Input/output voltages
• Optimized turns ratio
• Thermal solutions heat sinks, etc.
• Multiple terminal/termination options
• Value-added assemblies

TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT
Optimum Power Range: 10kW - 250kW
Current Rating Max.: 520A (+30% for THT)
Optimum Frequency Range: 40 - 125kHz
Mounting Options: Through-Hole (THT)

Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
Half Bridge (ZVS), Push-Pull, Resonant

Typical Dimensions:
L 120-145mm
W 94-111mm
H 38-45mm

Length (L) May vary Depending On Terminal
Height (H) Depending On Input & Output Requirements

HIGH POWER // 10kW-250kW

“Renewable Energy”

Some 9500, 2100, and 4000 are ideal suited for high power applications with an optimal power range of 10kW-250kW. This size offers volumetric efficiency with low AC losses in a low profile, ultra-compact package, as well as excellent repeatability and thermal management characteristics.

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TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT
Optimum Power Range: 10kW - 250kW
Current Rating Max.: 520A (+30% for THT)
Optimum Frequency Range: 40 - 125kHz
Mounting Options: Through-Hole (THT)

Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
Half Bridge (ZVS), Push-Pull, Resonant

Typical Dimensions:
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W 94-111mm
H 38-45mm

Length (L) May vary Depending On Terminal
Height (H) Depending On Input & Output Requirements

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Some 9500, 2100, and 4000 are ideal suited for high power applications with an optimal power range of 10kW-250kW. This size offers volumetric efficiency with low AC losses in a low profile, ultra-compact package, as well as excellent repeatability and thermal management characteristics.

TYPICAL PACKAGE RATINGS - APPLICATION DEPENDENT
Optimum Power Range: 10kW - 250kW
Current Rating Max.: 520A (+30% for THT)
Optimum Frequency Range: 40 - 125kHz
Mounting Options: Through-Hole (THT)

Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
Half Bridge (ZVS), Push-Pull, Resonant

Typical Dimensions:
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Optimum Frequency Range: 40 - 125kHz
Mounting Options: Through-Hole (THT)

Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
Half Bridge (ZVS), Push-Pull, Resonant

Typical Dimensions:
L 120-145mm
W 94-111mm
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Length (L) May vary Depending On Terminal
Height (H) Depending On Input & Output Requirements

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Optimum Power Range: 10kW - 250kW
Current Rating Max.: 520A (+30% for THT)
Optimum Frequency Range: 40 - 125kHz
Mounting Options: Through-Hole (THT)

Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
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Current Rating Max.: 520A (+30% for THT)
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Topologies:
Full Bridge, Full Bridge (ZVS), Half Bridge,
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Typical Dimensions:
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“Renewable Energy”

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**TRANSFORMER DESIGN | EXAMPLE - PQC2110**

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**ELECTRICAL SPECIFICATIONS**

- **Topology**: LLC Resonant
- **Input Voltage**: 350-450VDC
- **Primary To Secondary And Core**: 4000VAC
- **Switching Frequency**: 100kHz
- **Primary Inductance, Np, Min.**: 540µH
- **Primary Resistance, Rdc, Np, Max.**: 1.5mOhm
- **Max. Efficiency 24kW Output & Vin=410VDC**: 99.59% (99W losses calc.)
- **Secondary Resistance, Rdc, Ns, Max.**: 3mOhm
- **Ambient Temperature Max.**: +65°C
- **Leakage Inductance 1-2/3-4 Shorted, Typ.**: 220µH
- **External Heatsink Temperature Max.**: +60°C
- **Temp. Rise Hot Spot Baseplate*, Max.**: +59°C

**NOTES:**

1) CUSTOM TOOLED CORE UNIQUE TO STANDEX PRODUCT OFFERING
2) LARGE CROSS-SECTIONAL AREA REDUCES MAGNETIC FLUX DENSITY
3) MULTI LAYER PCB’S REDUCE AC LOSSES

**Design Example**

**SIZE 900**

**10kW-20kW**

**TRANSFORMER DESIGN | EXAMPLE - PQC2209**

**SOLUTIONS | Planar Transformers & Inductors**

**ELECTRICAL SPECIFICATIONS**

- **Topology**: LLC Resonant
- **Input Voltage**: 400VDC
- **Primary To Secondary And Core**: 4000VAC
- **Secondary Current Nom. Rms Half Sec. Current**: 19A RMS sinusoidal
- **Secondary To Core**: 4000VAC
- **Turns Ratio - Np/Ns**: 6T to 6T
- **Secondary To Core**: 4000VAC
- **Switching Frequency**: 100kHz
- **Primary Inductance, Np, Min.**: 1000µH
- **Primary Resistance, Np, Max.**: 5mOhm
- **Duty Cycle At 410VDC Input, Max.**: 98%
- **Secondary Resistance, Ns, Max.**: 10mOhm
- **Efficiency At Full Power (Calculated)**: 99.5% (50W losses)
- **Leakage Inductance 1-2/3-4 Shorted, Typ.**: 0.7µH
- **External Heatsink Temperature Max.**: +80°C
- **Weight Range**: 800-1600grams
- **Temp. Rise Hot Spot External Heatsink*, Max.**: +25°C

**NOTES:**

1) CUSTOM TOOLED CORE UNIQUE TO STANDEX PRODUCT OFFERING
2) LARGE CROSS-SECTIONAL AREA REDUCES MAGNETIC FLUX DENSITY
3) MULTI LAYER PCB’S REDUCE AC LOSSES

**Design Example**

**SIZE 900**

**10kW-20kW**
**ELECTRICAL SPECIFICATIONS**

**TRANSFORMER DESIGN | EXAMPLE - PQC2115**

- **Topology:** LLC ZVS Converter
- **Input Voltage:** 200-400VDC
- **Primary Voltage:** 1000VDC (No isolation)
- **Secondary Voltage:** 400VDC (No isolation)
- **Primary to Secondary:** 2500VAC
- **Primary Resistance:** 3mOhm
- **Primary Current:** 175A RMS
- **Primary Efficiency:** 99.5% after rectification
- **Secondary Resistance:** 2mOhm
- **Primary Insulation Voltage:** 1500VDC
- **Secondary Insulation Voltage:** 500VDC
- **Primary Leakage Inductance:** 0.5µH
- **Secondary Leakage Inductance:** 0.5µH
- **Efficiency:** 99.5% (150W losses)
- **Weight:** 2000 grams
- **Ambient Temperature:** +45°C
- **Thermal Impedance:** 0.3°C/W
- **External Heatsink Temperature Max.:** +65°C
- **Internal Heatsink Temperature Max.:** +19°C
- **Internal Heatsink Temperature Max.:** +45°C

**NOTES:**
1. **Industry Best Form Factor to Power Ratio**
2. **Inherent Isolation Due to PCB Windings**
3. **Unique Termination Options Available For Customizations**
4. **Multi-Layer PCB's Reduce AC Losses**

**INDUCTOR DESIGN | EXAMPLE - PQC2089**

- **Inductance At Rated Current:** 12µH
- **Temp. Rise Hot Spot Baseplate, Typ.:** +19°C
- **Ripple Frequency:** 50kHz
- **Ripple Current:** 2rdPPm
- **Minimum Isolation Voltage (Windings To Core/Heatsink):** 500VDC
- **Total Losses At Max. Current (Estimated Calc.):** 25W

**NOTES:**
1. **Custom Tooled Core Unique to Stanex Product Offering**
2. **Large Cross-Sectional Area Reduces Magnetic Flux Density**
3. **Rated Current:** 120ADC
- **Heatsink/Baseplate Temperature Max.:** +70°C
- **Thermal Impedance - Hotspot Heatsink/PCB:** +19°C
- **Core Temperature Max.:** +45°C
- **Weight (Approximate):** 2000 grams

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**SIZE 900**
**10kW-20kW**
**DESIGN EXAMPLE**

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**SIZE 2100**
**10kW-100kW**
**DESIGN EXAMPLE**
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**SIZE 4000**

**100K-250K**

**DESIGN EXAMPLE**

**TRANSFORMER DESIGN | EXAMPLE**

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**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topology</td>
<td>Full Bridge ZVS</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>450-800VDC</td>
</tr>
<tr>
<td>Minimum Isolation Voltage</td>
<td>45 - 60 A</td>
</tr>
<tr>
<td>Primary In Secondary To Core</td>
<td>2000VAC</td>
</tr>
<tr>
<td>Primary Resistance, Np, Max.</td>
<td>0.17mOhm</td>
</tr>
<tr>
<td>Efficiency At Full Power (Calculated)</td>
<td>99.6% (855W losses)</td>
</tr>
<tr>
<td>Secondary Resistance, Ns1 + Ns2, Max.</td>
<td>0.4mOhm</td>
</tr>
<tr>
<td>Leakage Inductance 1-2/3-4-5 Shorted, Typ.</td>
<td>16nH</td>
</tr>
<tr>
<td>Ambient Temperature Max.</td>
<td>+40°C</td>
</tr>
<tr>
<td>Weight (Approximate)</td>
<td>2000 grams</td>
</tr>
</tbody>
</table>

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**CUSTOMER CONFIGURATIONS**

**PQ3218 - 6R0 - 50 - T - R**

<table>
<thead>
<tr>
<th>Notes</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PQ32 fixed power inductors w/ferrite core are used in switching power supplies, DC/DC converters, FPGA and low/high profile current, high current PDL converters, feedback control, overload sensing, load drop and shut down detection.</td>
</tr>
</tbody>
</table>

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**PQ SERIES INDUCTORS // 0.9-6.0µH, 80A Max**

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**Fixed Power Inductors**

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**PQ32 (SMD/THT)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductance at Rated Current</td>
<td>0.9 - 6.0 µH</td>
</tr>
<tr>
<td>Rated Current Typ.</td>
<td>45 - 60 A</td>
</tr>
<tr>
<td>Height Max.</td>
<td>11 - 18 mm</td>
</tr>
<tr>
<td>Mounting Options</td>
<td>31.7 x 32.5 mm</td>
</tr>
</tbody>
</table>

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**IN DEVELOPMENT**

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**PQ SERIES INDUCTORS**

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**PQ SERIES INDUCTORS**

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