WHAT WE DO
Our team 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, our technology has infused transforming results into an array of customer’s needs – ultimately providing quality results to the end-user. Our approach that fuels this is achieved by:

1. Partnering with the customer
2. Confronting a challenge to solve
3. Delivering solutions and products that address your needs as a business.

WHAT WE BELIEVE
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. Whether it’s custom or standard we have 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.

CAPABILITIES
Standex-Meder Electronics has a commitment to absolute customer satisfaction and customer-driven innovation, with a global organization that offers premier sales support, engineering capabilities, and technical resources worldwide. At Standex-Meder Electronics, customer-specific product development has never been a problem. With our expert engineering staff and cutting-edge manufacturing capabilities, we are well-equipped to produce unique solutions for just about any environment or application.

MANUFACTURING
Auto AT Switch Sorting
Bobbin and Toroidal Winding
Auto Termination
Coil Molding & Packaging
Insert and Thermoset Molding
Laser Welding
Low Pressure Molding (Hot Melt)
Pick & Place – Vision & Camera System
Plasma Surface Treatment
Plastic Injection Molding
Potting - 2 Component
Progressive Stamping
Reflow Oven – Multiple Zone Convection
Reed Switch Manufacturing
Reed Relay Design and Manufacturing - SMD, Low Thermal, High Insulation, High Voltage, High Frequency, Latching and AtEx, Selective Soldering
Stainless Steel Fabrication

QUALITY / LAB CAPABILITIES
Certifications: AS9100, ITAR, ISO9000, TS16949, IP67
SPC Data Collection
Fully Equipped Certified Test Labs
Burn-in and Life Testing
Complete In-House Machine Shop
Coron Discharge Testing Capabilities
Mechanical and Thermal Shock
Microscopic Investigation / DPA
Moisture Resistance and Seal Testing
Radiographic Salt Fog and Solderability
Scott T Angular Accuracy
Terminal Strength
Temperature Cycling

TESTING & TOOLING
Automated Assembly and Test Systems
Environmental and Durability Testing
Life Testing
Specialized Lab Testing Equipment including but not limited to: Network Analyzers, Fluxmeters, Nanovoltmeters, Picommeters, Destructive Pull Testers, Gauss / Testameters

ENGINEERING
Electronic sensor engineering
Circuit Design and PCB Layout
Patented Conductivity Sensors
Patented Inductive Sensors
3-D CAD Modeling
3-D Magnetic Sensor Mapping
EMS Software
PCB Prototyper
Quick Turn Samples, 3-D Printing

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"CUSTOM IS STANDARD" - Why SME Planar Transformers & Inductors?

As more and more industries begin to feel the push toward higher efficiency and performance along with miniaturization, the planar transformer continues to emerge as an alternative to wire-wound transformers, making it ideal in certain application "sweet spots". This solution makes so much sense for today's applications, and when you combine planar transformers with excellent engineering, you can get a solution that not only saves you space, time, and costs, but suits your needs uniquely and specifically. We are your "Application Engineering Experts".

The unique P025 - P1100 product line of planar transformers come in standard sizes and with hundreds of lead frames and PCB windings in stock, they can be quickly customized often without start-up or tooling costs for many power topologies, including soft switching, single or multiple outputs, different switching frequencies, and different input/output voltages as well as multi-winding inductors. Refer to the below Custom Design Guide Overview.

**STANDEX-MEDER UNIQUE ADVANTAGES**

- Patented (U.S. PAT. 7,129,809) header and terminal (U.S. PAT. 7,460,002) design yielding superior thermal management
- Direct thermal contact between bottom of ferrite core and heat dissipating substrate
- Can attach to a substrate/heatsink with controlled temperature
- Stable and precise co-planarity of terminals on both sides
- Excellent solderability characteristics
- Planar turn surface in direct contact core backwall, thus greatly improving thermal conductivity and reducing EMI
- Flexible, low impedance terminations
- Able operate without any air flow for cooling
- Meets required min. 8mm clearance and creepage

**APPLICATIONS**

- AC-DC resonant designs
- Aerospace & Military (high reliability/repeatability)
- Appliances
- Automotive, Electric and Hybrid Vehicles
- Battery Charging (12V, 24V, 48V, 1-10 KW)
- DC-DC Converters (100W-1200W) in distributed power systems
- Distributed Isolated Power
- Feedback Control
- High Current POL Converters
- High Power LED Lighting, Industrial Power, Welding
- Isolated Inverters
- Isolated (non-regulated) Bus Converter (Vout 9-12V)
- Renewable Energy - Wind & Photovoltaic Power System
- Server – Data Centers (400VDC)
- Telecom Applications ("Sweet Spot" 36-72 Vin 40-250W)
- Welding, Lasers, Test Equipment

**ELECTRICAL & MECHANICAL SPECS**

- Height - low profile
- Low leakage inductance
- Repeatable leakage inductance, capacitance
- Volumetric efficiency (small size)
- Low turns count improves Cu loss
- Optimized core cross section lowers core loss
- Large core surface promotes heat transfer
- Low loss, reliable PCB construction
- AC Resistance and Proximity Cu Loss Minimized

**Planar Magnetics Custom Design Guide**

<table>
<thead>
<tr>
<th>Size</th>
<th>Page #</th>
<th>Optimum Power Range</th>
<th>Max Current Rating</th>
<th>Typical Topology</th>
<th>Optimum Frequency Range kHz</th>
<th>Typical Dimensions L x W x H (1) mm</th>
<th>Isolation Voltage Pri - Sec (VDC)</th>
<th>Pri - Core (VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P025 (3)</td>
<td>6</td>
<td>10W - 50W</td>
<td>20A (2)</td>
<td>Forward, Flyback</td>
<td>300 - 500</td>
<td>17.0 x 15.7 x 6.3</td>
<td>500 - 2000 VDC</td>
<td></td>
</tr>
<tr>
<td>P035 (3)</td>
<td>7</td>
<td>20W - 150W</td>
<td>30A (2)</td>
<td>Half Bridge, Forward, Flyback</td>
<td>200 - 400</td>
<td>22.9 x 19.8 x 7.6</td>
<td>500 - 2000 VDC</td>
<td></td>
</tr>
<tr>
<td>P055 (3)</td>
<td>8</td>
<td>50W - 200W</td>
<td>50A</td>
<td>Half Bridge, Forward, Flyback</td>
<td>175 - 300</td>
<td>24.1 x 21.8 x 9.1</td>
<td>500 - 2000 VDC</td>
<td></td>
</tr>
<tr>
<td>P075 (3)</td>
<td>9</td>
<td>100W - 500W</td>
<td>50A (2)</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull, Flyback</td>
<td>150 - 300</td>
<td>35.0 x 26.3 x 10.2</td>
<td>500 - 2000 VDC</td>
<td></td>
</tr>
<tr>
<td>P110 (3)</td>
<td>10</td>
<td>150W - 700W</td>
<td>60A (2)</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>100 - 250</td>
<td>39.9 x 28.4 x 12.7</td>
<td>500 VDC</td>
<td></td>
</tr>
<tr>
<td>P135</td>
<td>11-12</td>
<td>300W - 1.2kW</td>
<td>100A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>100 - 250</td>
<td>33.5 x 28.4 x 12.7</td>
<td>500 VDC</td>
<td></td>
</tr>
<tr>
<td>P220</td>
<td>13-14</td>
<td>1kW - 3.0kW</td>
<td>250A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>60 - 200</td>
<td>50.8 x 40.6 x 20.3</td>
<td>5000 VDC</td>
<td></td>
</tr>
<tr>
<td>P350</td>
<td>15-16</td>
<td>2kW - 6kW</td>
<td>300A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>40 - 150</td>
<td>45.7 x 40.6 x 17.8</td>
<td>5000 VDC</td>
<td></td>
</tr>
<tr>
<td>P560</td>
<td>17-18</td>
<td>3kW - 10kW</td>
<td>400A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>40 - 125</td>
<td>58.4 x 50.8 x 25.4</td>
<td>5000 VDC</td>
<td></td>
</tr>
<tr>
<td>P900</td>
<td>19-20</td>
<td>10kW - 20kW</td>
<td>500A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>40 - 125</td>
<td>53.3 x 50.8 x 21.6</td>
<td>5000 VDC</td>
<td></td>
</tr>
<tr>
<td>P1100</td>
<td>21</td>
<td>10kW - 30kW</td>
<td>600A</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
<td>20 - 125</td>
<td>118.1 x 110.7 x 43.9</td>
<td>5000 VDC</td>
<td></td>
</tr>
<tr>
<td>1) Length (L) may vary depending on terminals. Height (H) may vary depending on input / output requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Current rating is 30% higher for through hole applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Available in both SMD and through hole versions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fill out a design request today! | meder.com/planartransformers.html
Fill out a design request today! | meder.com/planartransformers.html
**Size P025**

**Power Range 10W-50W**

**Highlights**
- Patented (U.S. PAT. 7,129,809) design with superior thermal management
- High efficiency (low losses), ultra compact, low-profile
- Great co-planarity of terminals due to patented header offering repeatable height
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages

**Customize beyond these examples!**
- Rated power 10W-50W / Frequency range 300-500kHz
- Surface mount (SMD) or through hole (TH)
- Topology - Forward (w/active rest), Flyback
- Current rating max. SMD=20A, TH = +30%
- Isolation voltage pri-sec/pri-core 500-2,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions)
- Thermal solutions heat sinks, etc.

**Surface Mount Design**

![PCB Pad Layout](image1)

<table>
<thead>
<tr>
<th>Design Example</th>
<th>Input Voltage (VDC)</th>
<th>Pri. Np (Turns)</th>
<th>Sec. (1)</th>
<th>I Out. Max. (ADC)</th>
<th>Sec. (2)</th>
<th>Sec. (3)</th>
<th>Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1125-1</td>
<td>36 - 75</td>
<td>12 (1-5)</td>
<td>3</td>
<td>30</td>
<td>2</td>
<td>6.4 (0.250&quot;)</td>
<td></td>
</tr>
<tr>
<td>1125-2</td>
<td>18 - 36</td>
<td>6 (1-3)</td>
<td>3</td>
<td>30</td>
<td>2</td>
<td>6.4 (0.250&quot;)</td>
<td></td>
</tr>
<tr>
<td>1125-4</td>
<td>18 - 36</td>
<td>6 (1-3)</td>
<td>5</td>
<td>20</td>
<td>3</td>
<td>6.4 (0.250&quot;)</td>
<td></td>
</tr>
<tr>
<td>1125-5</td>
<td>36 - 75</td>
<td>12 (1-5)</td>
<td>12</td>
<td>2.5</td>
<td>8</td>
<td>6.4 (0.250&quot;)</td>
<td></td>
</tr>
<tr>
<td>1125-6</td>
<td>18 - 36</td>
<td>6 (1-3)</td>
<td>12</td>
<td>2.5</td>
<td>8</td>
<td>6.4 (0.250&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Full electrical, thermal, and efficiency calculations available upon request. 1) Length (L) may vary depending on terminals. Height (H) may vary depending on input/output requirements. 2) Estimated value for normal conditions. Current rating can be up to 30% higher for through hole applications.

**Surface Pad Layout**

All Pad dimensions tolerance +/- 0.1

- 19.0
- 6.0
- 3.0
- C/L
- 3.0
- 6.0
- 2.7

PCB Pad Layout

Notes:
1. Dimensions are in mm
2. Drawing not to scale
3. Tolerance +/- 2% unless noted
4. Header: LCP, natural color
5. Pins: Copper
6. Pin Finish: Tin (Sn) over Nickel (Ni)

These models are for reference only and may NOT exactly match the design examples provided.

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**CUSTOM IS STANDARD**

**SURFACE MOUNT DESIGN**

**PCB Pad Layout**

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**SURFACE MOUNT DESIGN**

- **PCB Pad Layout**
  - All Pad dimensions tolerance +/- 0.1

<table>
<thead>
<tr>
<th>Design Example Part #</th>
<th>Input Voltage Dc</th>
<th>Pri. No. Turns (Pins)</th>
<th>Sec. No1 Vdc</th>
<th>I Out Sec. No2 ADC (2)</th>
<th>Sec. No2 Vdc</th>
<th>Sec. No3 Vdc</th>
<th>Height mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1250-1 36 - 75</td>
<td>8</td>
<td>2.2 50</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>9.1 (0.360&quot;)</td>
</tr>
<tr>
<td>1250-2 18 - 36</td>
<td>4</td>
<td>2.2 50</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>9.1 (0.360&quot;)</td>
</tr>
<tr>
<td>1250-3 36 - 75</td>
<td>12</td>
<td>3.3 35</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-4 18 - 36</td>
<td>6</td>
<td>3.3 40</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-5 36 - 75</td>
<td>8</td>
<td>5 30</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-6 18 - 36</td>
<td>4</td>
<td>5 30</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-7 36 - 75</td>
<td>8</td>
<td>12 12.5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-8 18 - 36</td>
<td>4</td>
<td>12 12.5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>9.6 (0.380&quot;)</td>
</tr>
<tr>
<td>1250-9 200-350</td>
<td>48</td>
<td>28 5</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>10.7 (0.420&quot;)</td>
</tr>
<tr>
<td>1250-10 200-350</td>
<td>48</td>
<td>48 2.5</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td>10.7 (0.420&quot;)</td>
</tr>
</tbody>
</table>

**P055 ALTERNATE DESIGNS**

- **Design Examples**
  - **PCB Pad Layout**
    - All Pad dimensions tolerance +/- 0.1

---

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**SURFACE MOUNT DESIGN**

- **PCB Pad Layout**
  - All Pad dimensions tolerance +/- 0.1

---

**Notes**

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3. Tolerance +/- 2% unless noted
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**SURFACE MOUNT DESIGN**

### DESIGN EXAMPLES

<table>
<thead>
<tr>
<th>Design Part #</th>
<th>Input Voltage</th>
<th>Pri. Np</th>
<th>Sec. I Out.</th>
<th>Sec. Ns1 Sec. Ns2</th>
<th>Height mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1235-1</td>
<td>36 - 75</td>
<td>6</td>
<td>3.3</td>
<td>30° 1</td>
<td>15 5 10.2 (0.400&quot;)</td>
</tr>
<tr>
<td>1235-2</td>
<td>36 - 75</td>
<td>6</td>
<td>5</td>
<td>26° 2</td>
<td>15 6 10.2 (0.400&quot;)</td>
</tr>
<tr>
<td>1235-3</td>
<td>36 - 75</td>
<td>6</td>
<td>12</td>
<td>10° 4</td>
<td>15 5 10.2 (0.400&quot;)</td>
</tr>
<tr>
<td>1235-4</td>
<td>36 - 75</td>
<td>6</td>
<td>15</td>
<td>7.8° 5</td>
<td>15 5 10.2 (0.400&quot;)</td>
</tr>
</tbody>
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**CUSTOM IS STANDARD**

"Application Engineering Experts"

---

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- Inductors available for design in all packages

**SURFACE MOUNT DESIGN**

**POWER RANGE** 100W-500W

- Rated power 100W-500W / Frequency range 150-300kHz
- Surface mount (SMD) or through hole (TH)
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull, Flyback
- Current rating max. SMD=20A, TH = +30%
- Isolation voltage pri-sec/pri-core 500-5,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions)
- Thermal solutions heat sinks, etc.

**STANDARED**

"Application Engineering Experts"
SURFACE MOUNT DESIGN

:: DESIGN EXAMPLES ::

<table>
<thead>
<tr>
<th>Design Example Part #</th>
<th>Input Voltage VDC</th>
<th>Pri. Np (Pins)</th>
<th>Sec. Nb1 VDC</th>
<th>I Out (ADC)</th>
<th>Sec. Nb2 (Pins)</th>
<th>Sec. Nb2 VDC</th>
<th>Sec. Nb2 Turns</th>
<th>Height mm (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1240-1</td>
<td>190-350</td>
<td>16 2.2</td>
<td>15</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>12.7 (0.500&quot;)</td>
<td></td>
</tr>
<tr>
<td>1240-2</td>
<td>190-350</td>
<td>24 2.2</td>
<td>27</td>
<td>2</td>
<td>24 4</td>
<td>12.7 (0.500&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1240-3</td>
<td>190-350</td>
<td>28 3.3</td>
<td>46</td>
<td>1</td>
<td>15 3</td>
<td>12.7 (0.500&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1240-4</td>
<td>190-350</td>
<td>16 3.3</td>
<td>10</td>
<td>5</td>
<td>-</td>
<td>12.7 (0.500&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1240-5</td>
<td>190-350</td>
<td>20 5 27</td>
<td>2</td>
<td>15 2</td>
<td>12.7 (0.500&quot;)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Full electrical, thermal, and efficiency calculations available upon request. 1) Length (L) may vary depending on terminals. Height (H) may vary depending on input/output requirements. 2) Estimated value for normal conditions. Current rating can be up to 30% higher for through hole applications.

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POWER RANGE 150W-700W

Highlights
- Patented (U.S. PAT. 7,129,809) design with superior thermal management
- High efficiency (low losses), ultra compact, low-profile
- Great co-planarity of terminals due to patented header offering repeatable height
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages

CUSTOMIZE BEYOND THESE EXAMPLES!

Rated power 150W-700W / Frequency range 175-300kHZ 
Surface mount (SMD) or through hole (TH) 
Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull, Flyback 
Current rating max. SMD=20A, TH = +30% 
Isolation voltage pri-sec/pri-core 500-5,000VDC 
Soft switching, single or multiple outputs 
Different switching frequencies, input/output voltages 
Primary turns - other number (no fractions) 
Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions) 
Thermal solutions heat sinks, etc.

Notes
1. Dimensions are in mm
2. Header: LCP, natural color
3. Pins: Copper
4. Notes: Full electrical, thermal, and efficiency calculations available upon request
5. Estimated value for normal conditions. Current rating can be up to 30% higher for through hole applications.
6. Pin Finish: Tin (Sn) over Nickel (Ni)

These models are for reference only and may NOT exactly match the design examples provided.

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**SIZE P135**

**Power Range 300W-1.2kW**

- **Highlights**
  - High efficiency (low losses), ultra compact, low-profile
  - Excellent solderability (Pb-free or Pb/Sn Solder)
  - Standard sizes / customer configurations
  - Quick custom turn-around often without start-up or tooling costs
  - Inductors available for design in all packages
  - Large secondary pins reduce temperature rise on terminals

---

**CUSTOM IS STANDARD**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>600W (12VDC@50A)</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>200 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>370-410 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge ZVS</td>
</tr>
<tr>
<td>Max voit-sec product</td>
<td>1216</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>66 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>2.9 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>35.4 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>20:1+1</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>4,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>60 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>6.0 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>108 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>100 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by airflow only @ 200°C LFM

:: DESIGN EXAMPLE ::

**THROUGH HOLE / J-HOOK MOUNT**

- **Rated power 300W-1.2kW** / **Frequency range 100-250kHZ**
- **Topology** - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- **Current rating max. SMD=20A, TH = +30%**
- **Isolation voltage pri-sec/pri-core 500-5,000VDC**
- **Soft switching, single or multiple outputs**
- **Different switching frequencies, input/output voltages**
- **Primary turns - other number (no fractions)**
- **Secondary Ns1, Ns2 / Ns3 turns 1- 8 (no fractions)**
- **Thermal solutions heat sinks, etc.**

---

These models are for reference only and may NOT exactly match the design examples provided.
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**CUSTOM IS STANDARD**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>1.2kW</td>
</tr>
<tr>
<td>(12VDC@100A)</td>
<td></td>
</tr>
<tr>
<td>Operating frequency</td>
<td>120 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>380-410 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-sec product</td>
<td>2564</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>82 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>4.1 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>70.7 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>24:1+1</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>4,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>600 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>11 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>98 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>130 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

:: DESIGN EXAMPLE ::

**THROUGH HOLE / J-HOOK MOUNT**

**SIZE P135**

**Power Range 300W-1.2kW**

Highlights
- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals

Customize beyond these examples!

Rated power 300W-1.2kW / Frequency range 100-250kHZ
Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
Current rating max. SMD=20A, TH = +30%
Isolation voltage pri-sec/pr-core 500-5,000VDC
Soft switching, single or multiple outputs
Different switching frequencies, input/output voltages
Primary turns - other number (no fractions)
Secondary Ns1, Ns2 / Ns3 turns 1- 8 (no fractions)
Thermal solutions heat sinks, etc.

**:: DESIGN EXAMPLE ::**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Range</td>
<td>300W-1.2kW</td>
</tr>
<tr>
<td>(12VDC@100A)</td>
<td></td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-sec product</td>
<td>2564</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>82 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>4.1 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>70.7 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>24:1+1</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>4,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>600 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>11 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>98 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>130 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

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**CUSTOM IS STANDARD**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>1.0 kW (24VDC@40A)</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>140 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>180-325 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Forward</td>
</tr>
<tr>
<td>Max volt-µsec product</td>
<td>540</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>84 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>9.7 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>26 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>12:2+2</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>Pri-sec/pri-core 4,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>50 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>12 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>116 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>220 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

:: DESIGN EXAMPLE ::

**THROUGH HOLE / J-HOOK MOUNT**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>P220</td>
</tr>
<tr>
<td>Power Range</td>
<td>1kW-3kW</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge, Forward</td>
</tr>
<tr>
<td>Max volt-µsec product</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>84 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>9.7 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>26 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>12:2+2</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>Pri-sec/pri-core 4,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>50 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>12 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>116 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>220 grams</td>
</tr>
</tbody>
</table>

**Highlights**
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals

**Customize beyond these examples!**
- Rated power 1kW-3kW / Frequency range 60-200kHz
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push Pull
- Current rating max. 250A
- Isolation voltage pri-sec/pri-core 500-5,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions)
- Thermal solutions heat sinks, etc.

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SIZE P220
Power Range 1kW-3kW

Highlights
- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals

Customize beyond these examples!
- Rated power 1KW-3kW / Frequency range 60-200kHZ
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push Pull
- Current rating max. 250A
- Isolation voltage pri-sec/pri-core 500-5,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions)
- Thermal solutions heat sinks, etc.

:: DESIGN EXAMPLE ::

THROUGH HOLE / J-HOOK MOUNT

Total output power 2.0kW
(28VDC@71A)
Operating frequency 200 kHz
Input voltage range 180-300 VDC
Topology Fwd Bridge
Max volt-sec product 716
Duty cycle 80%
Primary current 15.1 Arms
Secondary current 50.2 Arms
Pri-sec turns ratio 10:1+1
Dielectric strength 4,000 VDC
Pri-sec/pri-core 500 VDC
Isolation sec-core 60 °C
Ambient temperature 112 °C
Total losses 21.7 W
Hot spot temperature 250 grams

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.
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Total output power | 3.6kW (28VDC@130A) | Secondary current | 92 Arms
Operating frequency | 200 kHz | Pri-sec turns ratio | 14:1+1
Input voltage range | 500-800 VDC | Dielectric strength | Pri-sec pri-core | 3,000 VDC
Topology | Full Bridge, LLC Resonant | Isolation sec-core | 1,000 VDC
Max volt-µsec product | 2017 | Ambient temperature | 85 °C
Duty cycle | 81 % | Total losses | 23.4 W
Primary current | 9.3 Arms | Hot spot temperature | 120 °C
Approx. Weight | 270 grams

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

:: DESIGN EXAMPLE ::

**BUS BAR TERMINATION**

<table>
<thead>
<tr>
<th>51.0 mm</th>
<th>40.6 mm</th>
<th>5.1 mm</th>
</tr>
</thead>
</table>

**SIZE P350**

**Power Range 2kW-6kW**

**Highlights**
- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals
- Various terminal options available (SMD, Thru-hole, screw terminals)

**Customize beyond these examples!**

**:: DESIGN EXAMPLE ::**

**Rated power 2kW-6kW / Frequency range 40-150kHz**
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- Current rating max. 300A
- Isolation voltage pri-sec/pri-core 500-5,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1, Ns2 / Ns3 turns 1-8 (no fractions)
- Thermal solutions heat sinks, etc.

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**SIZE P350**

**Power Range 2kW-6kW**

**Customize beyond these examples!**
- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals
- Various terminal options available (SMD, Thru-hole, screw terminals)

**:: DESIGN EXAMPLE ::**

<table>
<thead>
<tr>
<th>Total output power (15VDC@300A)</th>
<th>5.0kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating frequency</td>
<td>50 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>220-320 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-sec product</td>
<td>3085</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>71 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>29.7 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>196.3 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>10:1+1</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>3,000 VDC</td>
</tr>
<tr>
<td>Pri-sec/pri-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500-1,000 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>60 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>40.2 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>115°C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>350 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

**BUS BAR TERMINATION**

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**SIZE P560**

**Power Range 3kW-10kW**

**Highlights**
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals
- Various terminal options available (SMD, Thru-hole, screw terminals)

**CUSTOM IS STANDARD**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power (31VDC@100A)</td>
<td>3.1kW</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>50 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>405-495 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-µsec product</td>
<td>5081</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>63 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>10.7 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>56.1 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>16:2+2</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>Pri-sec/pri-core 3,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>60 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>15.6 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>114 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>480 grams</td>
</tr>
</tbody>
</table>

**Notes:** Assumes transformer is cooled by a coldplate @ 75°C max.

:: DESIGN EXAMPLE ::

**BUS BAR TERMINATION**

- **Total output power:** 3.1kW
- **Operating frequency:** 50 kHz
- **Input voltage range:** 405-495 VDC
- **Topology:** Full Bridge
- **Max volt-µsec product:** 5081
- **Duty cycle:** 63 %
- **Primary current:** 10.7 Arms
- **Secondary current:** 56.1 Arms
- **Pri-sec turns ratio:** 16:2+2
- **Dielectric strength:** Pri-sec/pri-core 3,000 VDC
- **Isolation sec-core:** 500 VDC
- **Ambient temperature:** 60 °C
- **Total losses:** 15.6 W
- **Hot spot temperature:** 114 °C
- **Approx. Weight:** 480 grams

These models are for reference only and may NOT exactly match the design examples provided.

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**Custom Is Standard**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>8.4kW</td>
</tr>
<tr>
<td>(28VDC@300A)</td>
<td></td>
</tr>
<tr>
<td>Operating frequency</td>
<td>50 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>380-410 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-sec product</td>
<td>5785</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>77%</td>
</tr>
<tr>
<td>Primary current</td>
<td>28 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>186 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>10:1+1</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td></td>
</tr>
<tr>
<td>Pri-sec/pri-core</td>
<td>3,000 VDC</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>500 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>60 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>40 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>115 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>700 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a coldplate @ 75°C max.

**:: DESIGN EXAMPLE ::**

**BUS BAR TERMINATION**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Range</td>
<td>3kW-10kW</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull</td>
</tr>
<tr>
<td>Current rating max</td>
<td>400A</td>
</tr>
<tr>
<td>Isolation voltage pri-sec/pri-core</td>
<td>500-5,000 VDC</td>
</tr>
<tr>
<td>Soft switching, single or multiple outputs</td>
<td></td>
</tr>
<tr>
<td>Different switching frequencies, input/output voltages</td>
<td></td>
</tr>
<tr>
<td>Primary turns - other number (no fractions)</td>
<td></td>
</tr>
<tr>
<td>Secondary Ns1, Ns2 / Ns3 turns</td>
<td>1-8 (no fractions)</td>
</tr>
<tr>
<td>Thermal solutions heat sinks, etc.</td>
<td></td>
</tr>
</tbody>
</table>

**Highlights**

- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals
- Various terminal options available (SMD, Thru-hole, screw terminals)

**Customize beyond these examples!**

Rated power 3kW-10kW / Frequency range 40-125kHz

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total losses</td>
<td>40 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>115 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>700 grams</td>
</tr>
</tbody>
</table>

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**“Application Engineering Experts”**

**SIZE P900**

**Power Range 10kW-20kW**

**Highlights**
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
- High efficiency (low losses), ultra compact, low-profile
- Excellent solderability (Pb-free or Pb/Sn Solder)
- Standard sizes / customer configurations
- Quick custom turn-around often without start-up or tooling costs
- Inductors available for design in all packages
- Large secondary pins reduce temperature rise on terminals
- Various terminal options available (SMD, Thru-hole, screw terminals)

**CUSTOM IS STANDARD**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>10kW (40VDC@250A)</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>30 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>252-308 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full Bridge</td>
</tr>
<tr>
<td>Max volt-µsec product</td>
<td>8236</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>98 %</td>
</tr>
<tr>
<td>Primary current</td>
<td>46 Arms</td>
</tr>
<tr>
<td>Secondary current</td>
<td>177 Arms</td>
</tr>
<tr>
<td>Pri-sec turns ratio</td>
<td>12:2+2</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>Pri-sec/pri-core</td>
</tr>
<tr>
<td>Isolation sec-core</td>
<td>1,000 VDC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>60 °C</td>
</tr>
<tr>
<td>Total losses</td>
<td>90 W</td>
</tr>
<tr>
<td>Hot spot temperature</td>
<td>105 °C</td>
</tr>
<tr>
<td>Approx. Weight</td>
<td>550 grams</td>
</tr>
</tbody>
</table>

Notes: Assumes transformer is cooled by a heatsink @ 75°C max. and forced airflow

:: DESIGN EXAMPLE ::

**BUS BAR TERMINATION**

- Customizable beyond these examples!
- Rated power 10kW-20kW / Frequency range 40-125kHz
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- Current rating max. 500A
- Isolation voltage pri-sec/pri-core 500-5,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1 turns 1-4 (no fractions)
- Thermal solutions heat sinks, etc.

These models are for reference only and may NOT exactly match the design examples provided.

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**CUSTOM IS STANDARD**

| BUS BAR TERMINATION |

**SIZE P900**

**Power Range 10kW-20kW**

<table>
<thead>
<tr>
<th>Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings</td>
</tr>
<tr>
<td>• Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance</td>
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<tr>
<td>• Standard sizes / customer configurations</td>
</tr>
<tr>
<td>• Quick custom turn-around often without start-up or tooling costs</td>
</tr>
<tr>
<td>• Inductors available for design in all packages</td>
</tr>
<tr>
<td>• Large secondary pins reduce temperature rise on terminals</td>
</tr>
<tr>
<td>• Various terminal options available (SMD, Thru-hole, screw terminals)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design Example</th>
</tr>
</thead>
</table>

- **Total output power:** 15.0kW (45VDC@330A)
- **Frequency range:** 40-125kHz
- **Topology:** Full Bridge ZVS
- **Current rating max:** 500A
- **Isolation sec-core:** 1,000 VDC
- **Isolation voltage pri-core:** 500-2,000VDC
- **Soft switching, single or multiple outputs**
- **Different switching frequencies, input/output voltages**
- **Primary turns - other number (no fractions)**
- **Secondary Ns1 turns:** 1-4 (no fractions)
- **Thermal solutions heat sinks, etc.**

**Notes:** Assumes transformer is cooled by a coldplate @ 75°C max. and forced airflow

**Customize beyond these examples!**

- Rated power 10KW-20kW / Frequency range 40-125kHz
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- Current rating max. 500A
- Isolation voltage pri-sec 5,000VDC
- Isolation voltage pri-core 500-2,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1 turns 1-4 (no fractions)
- Thermal solutions heat sinks, etc.

| BUS BAR TERMINATION |

**Notes:**

- Assumes transformer is cooled by a coldplate @ 75°C max. and forced airflow

**Customize beyond these examples!**

- Rated power 10KW-20kW / Frequency range 40-125kHz
- Topology - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- Current rating max. 500A
- Isolation voltage pri-sec 5,000VDC
- Isolation voltage pri-core 500-2,000VDC
- Soft switching, single or multiple outputs
- Different switching frequencies, input/output voltages
- Primary turns - other number (no fractions)
- Secondary Ns1 turns 1-4 (no fractions)
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**Size P1100**

**Power Range** 10kW-30kW

### CUSTOM IS STANDARD

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total output power</td>
<td>20.0kW (400VDC@50A)</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>40 kHz</td>
</tr>
<tr>
<td>Input voltage range</td>
<td>246-286 VDC</td>
</tr>
<tr>
<td>Topology</td>
<td>Full-Bridge</td>
</tr>
<tr>
<td>Max volt-µsec product</td>
<td>3884</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>84%</td>
</tr>
<tr>
<td>Secondary current</td>
<td>50 Arms</td>
</tr>
</tbody>
</table>

**Pri-sec turns ratio** 8.8 x 8

**Dielectric strength** Pri-sec/pri-core 4,000 VDC

**Isolation sec-core** 1,000 VDC

**Ambient temperature** 60 °C

**Total losses** 120 W

**Hot spot temperature** 110 °C

**Approx. Weight** 3 lbs

---

**Notes:** Assumes transformer is cooled by a coldplate @ 60°C max. and forced airflow

---

**:: DESIGN EXAMPLE ::**

**Bus Bar Termination**

- **Rated power** 10kW-30kW / Frequency range 20-125kHz
- **Topology** - Full Bridge, Half Bridge, Full Bridge ZVS, Push-Pull
- **Current rating max.** 600A
- **Isolation voltage** pri-sec/pri-core 5,000VDC
- **Soft switching, single or multiple outputs**
- **Different switching frequencies, input/output voltages**
- **Primary turns - other number (no fractions)**
- **Secondary Ns1, Ns2 / Ns3 turns** 1-8 (no fractions)
- **Thermal solutions** heat sinks, etc.

---

**Highlights**
- Anodized aluminum heatsinks offering high thermal conductivity and removing heat from windings
- Patented (U.S. Patent 7,460,002) terminals offer mechanical strength and very low resistance
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- Large secondary pins reduce temperature rise on terminals
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---

**BUS BAR TERMINATION**

- **37.5 mm**
- **133.3 mm**
- **110.5 mm**
- **79.5 mm**
- **64.0 mm**
- **37.5 mm**

---

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**PQ STYLE | Planar Inductors**

**0.4-6.0µH, 80A max**

**Highlights**
- Fixed power inductor w/ferrite core used in switching power supplies, DC/DC converters, FPGA and low/high profile current, high current POL converters, feedback control, overload sensing, load drop and shut down detection
- Applications include but are not limited to: switching power supplies, DC/DC converters in distributed power systems, FPGA and low-profile high-current, high current POL converters, feedback control, overload sensing, load drop and shut down detection

**Available in Tape & Reel Packaging**

**Customizable Options**
- Core style and size
- Typical height in mm
- Min. inductance in “µH”, “R” = decimal point
- Typical Amp rating
- Terminal style - “G” = SMT, “T” = Through hole tabs
- Optional packaging “R” = Tape & Reel

**Example**

PQ2007 - 0R4 - 70 - G - R

1. Core style and size
2. Typical height in mm
3. Min. inductance in “µH”, “R” = decimal point
4. Typical Amp rating
5. Terminal style - “G” = SMT, “T” = Through hole tabs
6. Optional packaging “R” = Tape & Reel
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**Planar Inductor Specifications**

<table>
<thead>
<tr>
<th>Application</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Operating Frequency</em> kHz</td>
<td></td>
</tr>
<tr>
<td>Min. Ambient Temperature °C</td>
<td>Max. Ambient Temperature °C</td>
</tr>
<tr>
<td>Heatsink Temperature °C</td>
<td>Airflow CFM</td>
</tr>
<tr>
<td>Dimensions (if needed) L mm W</td>
<td>mm H</td>
</tr>
<tr>
<td>Target Price USD</td>
<td></td>
</tr>
<tr>
<td><em>Winding 1</em> µH A</td>
<td></td>
</tr>
<tr>
<td>Winding 2 µH A</td>
<td></td>
</tr>
<tr>
<td>Winding 3 µH A</td>
<td></td>
</tr>
<tr>
<td>Winding 4 µH A</td>
<td></td>
</tr>
<tr>
<td>Winding 5 µH A</td>
<td></td>
</tr>
<tr>
<td>Max ACc ripple Current</td>
<td>A</td>
</tr>
<tr>
<td>Termination Style</td>
<td></td>
</tr>
<tr>
<td>Clearance/Creepage Requirements (if needed)</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Application</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Topology</em></td>
<td></td>
</tr>
<tr>
<td><em>Total Output Power</em> W</td>
<td></td>
</tr>
<tr>
<td><em>Min. Input Voltage</em> Vdc <em>Max. Input Voltage</em> Vdc</td>
<td></td>
</tr>
<tr>
<td>Min. Duty Cycle %</td>
<td>Min. Duty Cycle mm %</td>
</tr>
<tr>
<td>Primary Center Tap Yes No</td>
<td></td>
</tr>
<tr>
<td>Secondary Center Tap Yes No</td>
<td></td>
</tr>
<tr>
<td><em>Output 1</em> Vdc (V) Idc (A)</td>
<td></td>
</tr>
<tr>
<td>Output 2 Vdc (V) Idc (A)</td>
<td></td>
</tr>
<tr>
<td>Output 3 Vdc (V) Idc (A)</td>
<td></td>
</tr>
<tr>
<td>Output 4 Vdc (V) Idc (A)</td>
<td></td>
</tr>
<tr>
<td>Max ACc ripple Current Vdc <em>Isolation Pri:Sec</em> Vms</td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature °C</td>
<td></td>
</tr>
<tr>
<td>Heatsink Temperature °C</td>
<td>Airflow CFM</td>
</tr>
<tr>
<td>Termination Style</td>
<td></td>
</tr>
<tr>
<td>Dimensions L mm W</td>
<td>mm H</td>
</tr>
</tbody>
</table>
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Applications | Automotive Market & Transportation Industry

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