High Frequency Wire Wound Transformers
EP13Plus Platforms - SMT PA3855/56.XXXNL

- Industry standard footprint, 30% more power handling
- Power Range: Up to 70W
- Height: 14.0mm Max
- Footprint: 17.7mm x 14.5mm Max
- Topology: Forward and Flyback

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Electrical Specifications @25°C – Operating Temperature -40°C to 130°C</th>
<th>Schematic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pri. Inductance (1-3)</td>
<td>Lk. Inductance (1-3) w/ (10,9,6,7,4,5) shorted</td>
</tr>
<tr>
<td>PA3855.001NL</td>
<td>54uH +/- 10%</td>
<td>0.67uH Max</td>
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<tr>
<td>PA3855.002NL</td>
<td>48uH +/- 10%</td>
<td>0.67uH Max</td>
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<tr>
<td>PA3855.003NL</td>
<td>41uH +/- 10%</td>
<td>0.67uH Max</td>
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<tr>
<td>PA3855.004NL</td>
<td>21uH +/- 10%</td>
<td>0.3uH Max</td>
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</tbody>
</table>
# High Frequency Wire Wound Transformers

**EP13Plus Platforms - SMT PA3855/56.XXXNLT**

## Part Number | Electrical Specifications @25°C – Operating Temperature -40°C to 130°C  
|----------------|----------------------------------------------------------------------------------|
| **PA3855.005NL** | **Part Number**  
| (1-3) | **Pri. Inductance**  
| (1-3) w/ (10,9,6,7,4,5) shorted | **Lk. Inductance**  
| **DCR** | **Hi-Pot** | **K1 Factor** | **Schematic**  
| (1-3) | 31 | 583.3  
| (9-6) | 58 |  
| (10-7) | 58 |  
| (4-5) | 180 |  
| **Hi-Pot** | Pri-Sec | 2250 | Vdc  
| **K1 Factor** | 583.3 |  
| **PA3855.006NL** |  
| (1-3) | **Pri. Inductance**  
| (1-3) w/ (10,9,6,7,4,5) shorted | **Lk. Inductance**  
| **DCR** | **Hi-Pot** | **K1 Factor** | **Schematic**  
| (1-3) | 31 | 583.3  
| (9-6) | 58 |  
| (10-7) | 58 |  
| (4-5) | 180 |  
| **Hi-Pot** | Pri-Sec | 2250 | Vdc  
| **K1 Factor** | 583.3 |  
| **PA3855.008NL** |  
| (1-3) | **Pri. Inductance**  
| (6-9) w/ (1,2,3,5) shorted | **Lk. Inductance**  
| **DCR** | **Hi-Pot** | **K1 Factor** | **Schematic**  
| (1-2) | 80 | 208.3  
| (3-5) | 100 |  
| (6,7,9,10) | 9 |  
| **Hi-Pot** | Pri-Sec | 2250 | Vdc  
| **K1 Factor** | 208.3 |  
| **PA3856.001NL** |  
| (1-3) | **Pri. Inductance**  
| (1-3) w/ (10,9,6,7,4,5) shorted | **Lk. Inductance**  
| **DCR** | **Hi-Pot** | **K1 Factor** | **Schematic**  
| (1-3) | 29.4 | 27.8  
| (9-6) | 6.5 |  
| (10-7) | 6.5 |  
| (4-5) | 120 |  
| **Hi-Pot** | Pri-Sec | 2250 | Vdc  
| **K1 Factor** | 27.8 |  
| **PA3856.002N** |  
| (1-3) | **Pri. Inductance**  
| (1-3) w/ (10,9,6,7,4,5) shorted | **Lk. Inductance**  
| **DCR** | **Hi-Pot** | **K1 Factor** | **Schematic**  
| (1-3) | 29.4 | 27.8  
| (9-6) | 10 |  
| (10-7) | 10 |  
| (4-5) | 120 |  
| **Hi-Pot** | Pri-Sec | 2250 | Vdc  
| **K1 Factor** | 27.8 |  

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*Hi-Pot Pri-Sec 2250 Vdc*  

### PA3855.005NL Specifications:  
- **Part Number:** PA3855.005NL  
- **Pri. Inductance:** (1-3)  
- **Lk. Inductance:** (1-3) w/ (10,9,6,7,4,5) shorted  
- **DCR:** (1-3)  
- **Hi-Pot:** Pri-Sec  
- **K1 Factor:** 583.3  
- **Schematic:** Flyback Transformer  
- **Pinout:**  
  - 1  
  - 2  
  - 3  
  - 4  
  - 5  

### PA3855.006NL Specifications:  
- **Part Number:** PA3855.006NL  
- **Pri. Inductance:** (1-3)  
- **Lk. Inductance:** (1-3) w/ (10,9,6,7,4,5) shorted  
- **DCR:** (1-3)  
- **Hi-Pot:** Pri-Sec  
- **K1 Factor:** 583.3  
- **Schematic:** Flyback Transformer  
- **Pinout:**  
  - 1  
  - 2  
  - 3  
  - 4  
  - 5  

### PA3855.008NL Specifications:  
- **Part Number:** PA3855.008NL  
- **Pri. Inductance:** (6-9) w/ (1,2,3,5) shorted  
- **Lk. Inductance:** (6-9) w/ (1,2,3,5) shorted  
- **DCR:** (1-2)  
- **Hi-Pot:** Pri-Sec  
- **K1 Factor:** 208.3  
- **Schematic:** Flyback Transformer  
- **Pinout:**  
  - 1  
  - 2  
  - 3  
  - 4  
  - 5  

### PA3856.001NL Specifications:  
- **Part Number:** PA3856.001NL  
- **Pri. Inductance:** (1-3)  
- **Lk. Inductance:** (1-3) w/ (10,9,6,7,4,5) shorted  
- **DCR:** (1-3)  
- **Hi-Pot:** Pri-Sec  
- **K1 Factor:** 27.8  
- **Schematic:** Forward Transformer  
- **Pinout:**  
  - 1  
  - 2  
  - 3  
  - 4  
  - 5  

### PA3856.002N Specifications:  
- **Part Number:** PA3856.002N  
- **Pri. Inductance:** (1-3)  
- **Lk. Inductance:** (1-3) w/ (10,9,6,7,4,5) shorted  
- **DCR:** (1-3)  
- **Hi-Pot:** Pri-Sec  
- **K1 Factor:** 27.8  
- **Schematic:** Forward Transformer  
- **Pinout:**  
  - 1  
  - 2  
  - 3  
  - 4  
  - 5  

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**Power Pulse Electronics**  
**P719.1 (03/20)**  
[http://www.power.pulseelectronics.com/contact](http://www.power.pulseelectronics.com/contact)
# High Frequency Wire Wound Transformers

**EP13Plus Platforms - SMT PA3855/56.XXXNLT**

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<tr>
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<td>Pri. Inductance</td>
<td>Lk. Inductance</td>
</tr>
<tr>
<td>PA3856.003NL</td>
<td>(1-3) 100uH +/- 15%</td>
<td>(1-3) 0.4uH Max</td>
</tr>
<tr>
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<td>Pri. Inductance</td>
<td>Lk. Inductance</td>
</tr>
<tr>
<td>PA3856.004NL</td>
<td>(1-3) 128uH +/- 25%</td>
<td>(1-3) 0.15uH Max</td>
</tr>
<tr>
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<td>Pri. Inductance</td>
<td>Lk. Inductance</td>
</tr>
<tr>
<td>PA3856.005NL</td>
<td>(1-3) 128uH +/- 15%</td>
<td>(1-3) 0.15uH Max</td>
</tr>
<tr>
<td></td>
<td>Pri. Inductance</td>
<td>Lk. Inductance</td>
</tr>
<tr>
<td>PA3856.006NL</td>
<td>(1-2) 200uH +/- 25%</td>
<td>(1-2) 0.36uH Max</td>
</tr>
</tbody>
</table>
Notes:

1. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
2. For flyback topology applications, it is necessary to ensure that the transformer will not saturate in the application. The peak flux density (Bpk) should remain below 2700 Gauss. To calculate the peak flux density use the following formula:
   \[ Bpk \ (\text{Gauss}) = K1_{-\text{Factor}} \times Ipk(A) \]
3. In high volt-\(\mu\)sec applications, it is important to calculate the core loss of the transformer. Approximate transformer core loss can be calculated as:
   \[ \text{CoreLoss (W)} = 3.84E-14 \times (\text{Freq}_{\text{kHz}})^{1.63} \times (\Delta B_{\text{Gauss}})^{2.63} \]
   where \(\Delta B\) can be calculated as:
   - For Flyback Topology: \(\Delta B = K1_{-\text{Factor}} \times \Delta I(A)\)
   - For Forward Topology: \(\Delta B = K1_{-\text{Factor}} \times \text{Volt-}\mu\text{sec}\)
4. The standard pin-numbering for this package is indicated in the below mechanical drawing showing pin 1 on the lower right corner and the numbers proceeding clockwise to pin 10 on the upper right corner.
5. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. (PA2160.001NL becomes PA2160.001NLT). Pulse complies with industry standard tape and reel specification EIA481.
High Frequency Wire Wound Transformers

**EP13Plus Platforms - SMT PA3855/56.XXXNLT**

### Tape & Reel Info

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>REEL SIZE (mm)</th>
<th>TAPE SIZE (mm)</th>
<th>QTY</th>
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<tbody>
<tr>
<td>PA3855/56.XXXNLT</td>
<td>Ø330</td>
<td>32.4</td>
<td>24</td>
</tr>
</tbody>
</table>

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