SMT Current Sense Transformers
PA1005.XXXNL Series

**Height:** 5.5mm Max  
**Footprint:** 8.4mm x 7.2mm Max  
**Current Rating:** up to 20A  
**Frequency Range:** 50kHz to 1MHz  
**Low Primary DCR version of P820X**

### Mechanical

#### Schematic

**Application Circuit**

- **P**lower
- **N**ext to **R**T
- **V**ref

**Dimensions:**  
- **Inches:**  
  - **min**
  - **max**
- **mm**

**Weight:** 0.34 grams  
**Tray:** 120/tray  
**Tape & Reel:** 900/reel  
**Coplanarity:** 0.004 inches  

**Recommended Pad Layout**

- **Pin 1**
- **Pin 2**
- **Pin 3**
- **Pin 4**
- **Pin 5**
- **Pin 6**
- **Pin 7**
- **Pin 8**

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### Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Turns Ratio</th>
<th>Current Rating (A)</th>
<th>Secondary Inductance (mH MIN)</th>
<th>DCR (mΩ MAX)</th>
<th>Hipot (V RMS)</th>
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</thead>
<tbody>
<tr>
<td>PA1005.020NL</td>
<td>1:20</td>
<td>20</td>
<td>0.08</td>
<td>0.75</td>
<td>550</td>
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<tr>
<td>PA1005.030NL</td>
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<td>0.32</td>
<td>0.75</td>
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<td>0.50</td>
<td>0.75</td>
<td>1500</td>
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<td>0.98</td>
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<tr>
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<td>2.00</td>
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<td>3.00</td>
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</table>

### Notes:

1. The temperature of component (ambient temperature plus temper-ature rise) must be within the specified operating temperature range.
2. The maximum current rating is based upon temperature rise of the component and represents the DC current which will cause a typical temperature rise of 40°C with no airflow when both one turn windings connected in parallel.
3. To calculate value of terminating resistor (Rt) use the following formula:  
   \[ Rt (\Omega) = V_{ref} \times N / (I_{peak\_primary}) \]
4. The peak flux density of the device must remain below 2000 Gauss. To calculate the peak flux density for uni-polar current use following formula:  
   \[ B_{pk} = 37.59 \times V_{ref} \times (Duty\_Cycle\_Max) \times 10^7 / (N \times Freq\_kHz) \]
   * for bi-polar current applications divide Bpk (as calculated above) by 2.
5. Optional Tape & Reel packaging can be ordered by adding a “T” suffix to the part number (i.e. PA1005.020NL becomes PA1005.020NL-T). Pulse complies to industry standard tape and reel specification EIA481.
6. The “NL” suffix indicates an RoHS-compliant part number. Non-NL suf-fixed parts are not necessarily RoHS compliant, but are electrically and mechanically equivalent to NL versions. If a part number does not have the “NL” suffix, but an RoHS compliant version is required, please con-tact Pulse for availability.

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- **Weight:** 0.34 grams  
- **Tray:** 120/tray  
- **Tape & Reel:** 900/reel  
- **Coplanarity:** 0.004 inches  

### Dimensions:

- **Inches:**
  - **min**
  - **max**
- **mm**

Unless otherwise specified, all tolerances are ±0.10 mm ±0.25 mm.
Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Pulse:  
PA1005.050NLT  PA1005.070NLT  PA1005.100NLT