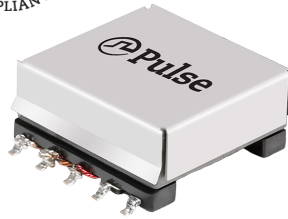


# High Frequency Wire Wound Transformers

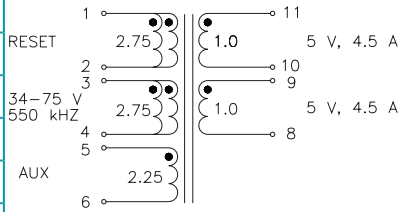
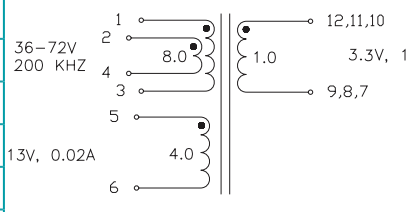
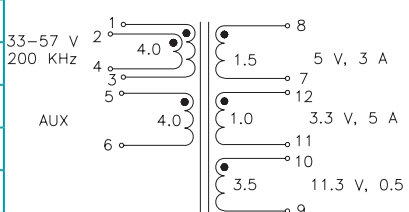


- Power Range:** up to 95W
- Height:** 11.4mm Max
- Footprint:** 29.2mm x 21.8mm Max
- Topology:** Forward and Flyback

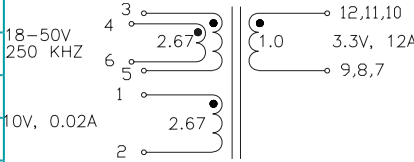
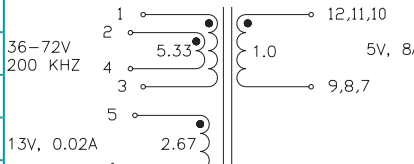
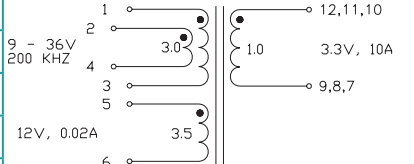
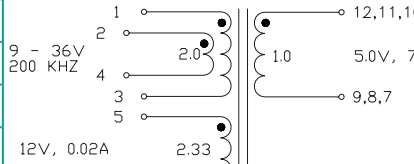
## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|          |                 |                                                |                        |                            |
|----------|-----------------|------------------------------------------------|------------------------|----------------------------|
| PA0273NL | Pri. Inductance | (1, 2-3, 4)                                    | 307 $\mu$ H $\pm$ 25%  | <p>FORWARD TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (5, 6, 9, 10) shorted         | 0.35 $\mu$ H MAX       |                            |
|          | DCR             | (1, 2-3, 4)                                    | 65m $\Omega$ MAX       |                            |
|          |                 | (7, 8, 9-10, 11, 12)                           | 27m $\Omega$ MAX       |                            |
|          |                 | (5-6)                                          | 240m $\Omega$ MAX      |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms               |                            |
|          | K1 Factor       | 20.2                                           |                        |                            |
| PA0751NL | Pri. Inductance | (1, 2-3, 4)                                    | 110 $\mu$ H $\pm$ 10%  | <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 2 $\mu$ H MAX          |                            |
|          | DCR             | (4-5)                                          | 85m $\Omega$ MAX       |                            |
|          |                 | (12, 11, 10-9, 8, 7)                           | 12m $\Omega$ MAX       |                            |
|          |                 | (1-3)                                          | 300m $\Omega$ MAX      |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms               |                            |
|          | K1 Factor       | 1364.8                                         |                        |                            |
| PA0769NL | Pri. Inductance | (1, 2-5, 4)                                    | 89.2 $\mu$ H $\pm$ 18% | <p>FORWARD TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 1.5 $\mu$ H MAX        |                            |
|          | DCR             | (1, 2-3,4)                                     | 50m $\Omega$ MAX       |                            |
|          |                 | (12-11)                                        | 3.8m $\Omega$ MAX      |                            |
|          |                 | (10-9)=(8-7)                                   | 35m $\Omega$ MAX       |                            |
|          |                 | (5-6)                                          | 110m $\Omega$ MAX      |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vdc                |                            |
|          | K1 Factor       | 21.5                                           |                        |                            |

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|          |                 |                                                |             |                                                                                                                  |
|----------|-----------------|------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------|
| PA1066NL | Pri. Inductance | (3-4)                                          | 137μH ±32%  |  <p>FORWARD TRANSFORMER</p>   |
|          | Lk. Inductance  | (3-4) with (11, 10, 9, 8) shorted              | 1.0μH MAX   |                                                                                                                  |
|          | DCR             | (3-4)                                          | 35mΩ MAX    |                                                                                                                  |
|          |                 | (1-2)                                          | 199mΩ MAX   |                                                                                                                  |
|          |                 | (5-6)                                          | 100mΩ MAX   |                                                                                                                  |
|          |                 | (11-10)=(9-8)                                  | 17mΩ MAX    |                                                                                                                  |
|          | Hi-Pot          | Pri-Sec                                        | 500Vrms     |                                                                                                                  |
|          | K1 Factor       | 29.3                                           |             |                                                                                                                  |
| PA1366NL | Pri. Inductance | (2, 3-4, 5)                                    | 10μH ±10%   |  <p>FLYBACK TRANSFORMER</p>   |
|          | Lk. Inductance  | (2, 3-4, 5) with (11, 8) shorted               | 0.3μH MAX   |                                                                                                                  |
|          | DCR             | (2, 3-4, 5)                                    | 15.75mΩ MAX |                                                                                                                  |
|          |                 | (11-8)                                         | 560mΩ MAX   |                                                                                                                  |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms    |                                                                                                                  |
|          | K1 Factor       | 322.6                                          |             |                                                                                                                  |
| PA1477NL | Pri. Inductance | (1, 2-3, 4)                                    | 38.3μH ±7%  |  <p>FLYBACK TRANSFORMER</p>  |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 1.0μH MAX   |                                                                                                                  |
|          | DCR             | (1-3)                                          | 72mΩ MAX    |                                                                                                                  |
|          |                 | (2-4)                                          | 85mΩ MAX    |                                                                                                                  |
|          |                 | (12, 11, 10-9, 8, 7)                           | 2.5mΩ MAX   |                                                                                                                  |
|          |                 | (5-6)                                          | 230mΩ MAX   |                                                                                                                  |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vrms    |                                                                                                                  |
|          | K1 Factor       | 772.2                                          |             |                                                                                                                  |
| PA1558NL | Pri. Inductance | (1, 2-3, 4)                                    | 11.5μH ±10% |  <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 0.5μH MAX   |                                                                                                                  |
|          | DCR             | (1, 2-3, 4)                                    | 28mΩ MAX    |                                                                                                                  |
|          |                 | (8-7)                                          | 12mΩ MAX    |                                                                                                                  |
|          |                 | (12-11)                                        | 5mΩ MAX     |                                                                                                                  |
|          |                 | (10-9)                                         | 62mΩ MAX    |                                                                                                                  |
|          |                 | (5-6)                                          | 190mΩ MAX   |                                                                                                                  |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms    |                                                                                                                  |
|          |                 | 463.7                                          |             |                                                                                                                  |

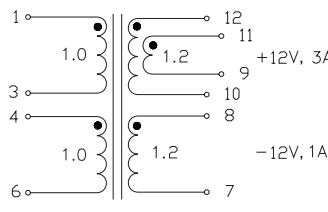
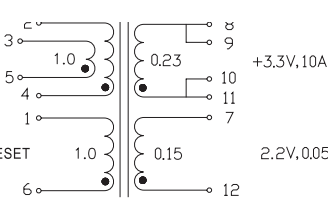
## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|          |                 |                                                |            |                                                                                       |
|----------|-----------------|------------------------------------------------|------------|---------------------------------------------------------------------------------------|
| PA1692NL | Pri. Inductance | (3, 4-5, 6)                                    | 73μH ±30%  |    |
|          | Lk. Inductance  | (3, 4-5, 6) with (12, 11, 10, 9, 8, 7) shorted | 1.0μH MAX  |                                                                                       |
|          | DCR             | (3, 4-5, 6)                                    | 10.2mΩ MAX |                                                                                       |
|          |                 | (12, 11, 10-9, 8, 7)                           | 5mΩ MAX    |                                                                                       |
|          |                 | (1-2)                                          | 115mΩ MAX  |                                                                                       |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vdc    |                                                                                       |
|          | KI Factor       | 40.3                                           |            |                                                                                       |
|          |                 |                                                |            | FLYBACK TRANSFORMER                                                                   |
| PA1735NL | Pri. Inductance | (1, 2-3, 4)                                    | 28.5μH ±5% |    |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 1μH MAX    |                                                                                       |
|          | DCR             | (1, 2-3, 4)                                    | 39.0mΩ MAX |                                                                                       |
|          |                 | (12, 11, 10-9, 8, 7)                           | 3.5mΩ MAX  |                                                                                       |
|          |                 | (5-6)                                          | 230mΩ MAX  |                                                                                       |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vrms   |                                                                                       |
|          | KI Factor       | 574.6                                          |            |                                                                                       |
|          |                 |                                                |            | FLYBACK TRANSFORMER                                                                   |
| PA1736NL | Pri. Inductance | (1, 2-3, 4)                                    | 20.5μH ±5% |   |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 1μH MAX    |                                                                                       |
|          | DCR             | (1, 2-3, 4)                                    | 39.0mΩ MAX |                                                                                       |
|          |                 | (12, 11, 10-9, 8, 7)                           | 8.5mΩ MAX  |                                                                                       |
|          |                 | (5-6)                                          | 230mΩ MAX  |                                                                                       |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms   |                                                                                       |
|          | KI Factor       | 413.3                                          |            |                                                                                       |
|          |                 |                                                |            | FLYBACK TRANSFORMER                                                                   |
| PA1835NL | Pri. Inductance | (1, 2-3, 4)                                    | 4.5μH ±5%  |  |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 0.25μH MAX |                                                                                       |
|          | DCR             | (1, 2-3, 4)                                    | 9.5mΩ MAX  |                                                                                       |
|          |                 | (12, 11, 10-9, 8, 7)                           | 3mΩ MAX    |                                                                                       |
|          |                 | (5-6)                                          | 130mΩ MAX  |                                                                                       |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vrms   |                                                                                       |
|          | KI Factor       | 241.9                                          |            |                                                                                       |
|          |                 |                                                |            | FLYBACK TRANSFORMER                                                                   |
| PA1836NL | Pri. Inductance | (1, 2-3, 4)                                    | 4.5μH ±5%  |  |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 0.2μH MAX  |                                                                                       |
|          | DCR             | (1, 2, 3, 4)                                   | 9.5mΩ MAX  |                                                                                       |
|          |                 | (12, 11, 10-9, 8, 7)                           | 5mΩ MAX    |                                                                                       |
|          |                 | (5-6)                                          | 130mΩ MAX  |                                                                                       |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vrms   |                                                                                       |
|          | KI Factor       | 241.9                                          |            |                                                                                       |
|          |                 |                                                |            | FLYBACK TRANSFORMER                                                                   |

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|          |                 |                                                |              |                            |
|----------|-----------------|------------------------------------------------|--------------|----------------------------|
| PA1837NL | Pri. Inductance | (1, 2-3, 4)                                    | 4.5μH ±5%    | <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 0.2μH MAX    |                            |
|          | DCR             | (1, 2, 3, 4)                                   | 9.5mΩ MAX    |                            |
|          |                 | (12, 11, 10-9, 8, 7)                           | 23mΩ MAX     |                            |
|          |                 | (5-6)                                          | 130mΩ MAX    |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vdc      |                            |
|          | KI Factor       | 241.9                                          |              |                            |
| PA2047NL | Pri. Inductance | (1-3)                                          | 7.2μH ±5%    | <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1-3) with (11, 10-9, 7) shorted               | 0.3μH MAX    |                            |
|          | DCR             | (1-3)                                          | 52mΩ MAX     |                            |
|          |                 | (11, 10-9, 7)                                  | 12mΩ MAX     |                            |
|          |                 | (5-6)                                          | 240mΩ MAX    |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms     |                            |
|          | KI Factor       | 290.3                                          |              |                            |
| PA2053NL | Pri. Inductance | (1, 2-5, 6)                                    | 292.0μH ±32% | <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-5, 6) with (12, 11, 10, 9, 8, 7) shorted | 1.3μH MAX    |                            |
|          | DCR             | (1, 2-5, 6)                                    | 78.0mΩ MAX   |                            |
|          |                 | (7, 8-9, 10)                                   | 12mΩ MAX     |                            |
|          |                 | (11-12)                                        | 43mΩ MAX     |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms     |                            |
|          | KI Factor       | 20.2                                           |              |                            |
| PA2291NL | Pri. Inductance | (1-4)                                          | 57.6μH ±12%  | <p>FLYBACK TRANSFORMER</p> |
|          | Lk. Inductance  | (1-4) with (all windings) shorted              | 0.5μH MAX    |                            |
|          | DCR             | (1-4)                                          | 65mΩ MAX     |                            |
|          |                 | (3-2)                                          | 155mΩ MAX    |                            |
|          |                 | (6-5)                                          | 145mΩ MAX    |                            |
|          |                 | (7, 8-9, 10)                                   | 4mΩ MAX      |                            |
|          |                 | (11-12)                                        | 55mΩ MAX     |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vdc      |                            |
|          | KI Factor       | 26.9                                           |              |                            |
| PA2398NL | Pri. Inductance | (1,2-3,4)                                      | 100μH ±12%   | <p>FORWARD TRANSFORMER</p> |
|          | Lk. Inductance  | (1, 2-3, 4) with (5, 6, 9,10) shorted          | 0.45μH MAX   |                            |
|          | DCR             | (1, 2-3, 4)                                    | 72mΩ MAX     |                            |
|          |                 | (7, 8, 9-10, 11, 12)                           | 15mΩ MAX     |                            |
|          |                 | (5-6)                                          | 680mΩ MAX    |                            |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms     |                            |
|          | KI Factor       | 16.1                                           |              |                            |

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|                 |                 |                                         |             |                                                                                      |
|-----------------|-----------------|-----------------------------------------|-------------|--------------------------------------------------------------------------------------|
| <b>PB2041NL</b> | Pri. Inductance | (1-6) with (3-4) shorted                | 491μH ±35%  |   |
|                 | Lk. Inductance  | (1-6) with (all windings) shorted       | 1μH MAX     |                                                                                      |
|                 | DCR             | (1-3)                                   | 36.1mΩ MAX  |                                                                                      |
|                 |                 | (4-6)                                   | 45.6mΩ MAX  |                                                                                      |
|                 |                 | (8-7)                                   | 86.4mΩ MAX  |                                                                                      |
|                 |                 | (11-9)                                  | 86.4mΩ MAX  |                                                                                      |
|                 |                 | (12-10)                                 | 47.8mΩ MAX  |                                                                                      |
|                 | Hi-Pot          | Pri-Sec                                 | 1500Vrms    |                                                                                      |
|                 | K1 Factor       | 16.1                                    |             | FORWARD TRANSFORMER                                                                  |
| <b>PB2089NL</b> | Pri. Inductance | (5, 4-3, 2)                             | 112.0μH MAX |  |
|                 | Lk. Inductance  | (5, 4-3, 2) with (all windings) shorted | 1μH MAX     |                                                                                      |
|                 | DCR             | (5-3)                                   | 55mΩ MAX    |                                                                                      |
|                 |                 | (4-2)                                   | 67.7mΩ MAX  |                                                                                      |
|                 |                 | (10, 11-8, 9)                           | 5.5mΩ MAX   |                                                                                      |
|                 |                 | (12-7)                                  | 123mΩ MAX   |                                                                                      |
|                 |                 | (6-1)                                   | 923mΩ MAX   |                                                                                      |
|                 | Hi-Pot          | Pri-Sec                                 | 1500Vdc     |                                                                                      |
|                 | K1 Factor       | 24.8                                    |             | FORWARD TRANSFORMER                                                                  |

#### Notes:

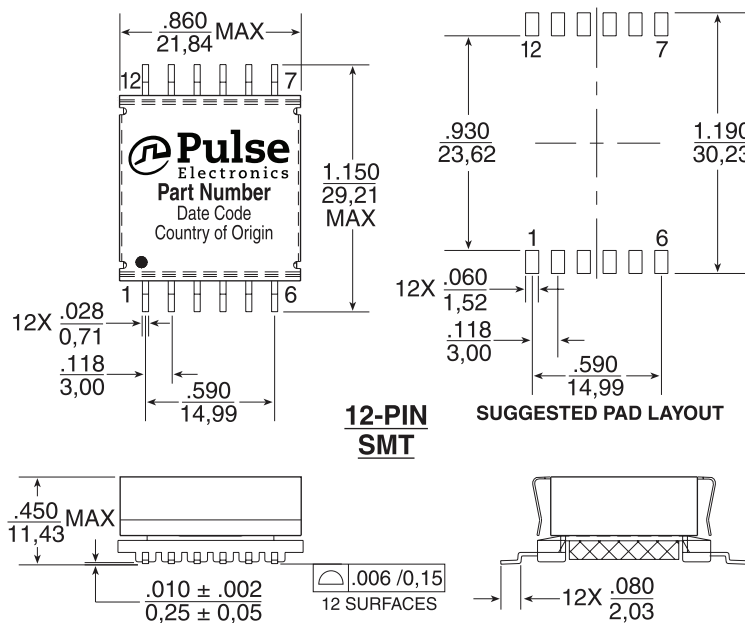
1. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
2. The above transformers and inductors have been tested and approved by Pulse's power IC partners and are sited in the appropriate datasheet or evaluation board documentation at these companies. To determine which IC and IC partners are matched with the above Pulse part numbers please consult the IC Cross Reference on the Pulse website.
3. 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 2700Gauss. To calculate the peak density, use the following formula:  

$$B_{pk} \text{ (Gauss)} = K1\_Factor * I_{pk} \text{ (A)}$$
4. In high volt-sec applications, it is important to calculate the core loss of the transformer. Approximate transformer core loss can be calculated as:  

$$CoreLoss \text{ (W)} = 1.32E-13 * (Freq\_kHz)^{1.63} * (\Delta B\_Gauss)^{2.63}$$
 where  $\Delta B$  can be calculated as:  
 For Flyback Topology:  $\Delta B = K1\_Factor * (A)$   
 For Forward Topology:  $\Delta B = K1\_Factor * Volt-\mu sec$
5. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA0273NL becomes PA0273NLT). Pulse complies with industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=44mm), pitch (Po=32mm) an depth (Ko=11.78mm).
6. The "NL" suffix indicates an RoHS-compliant part number. Non-NL suffixed 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 contact Pulse for availability.

## Mechanical

PAXXXXNL / PBXXXXNL



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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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