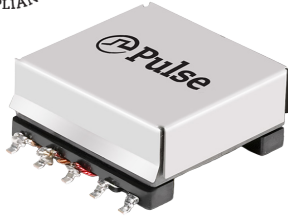
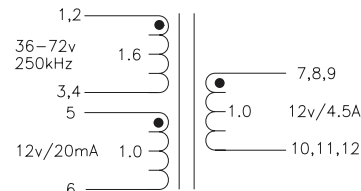
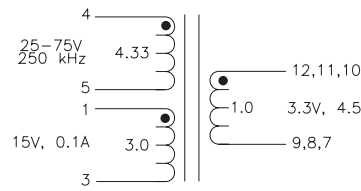
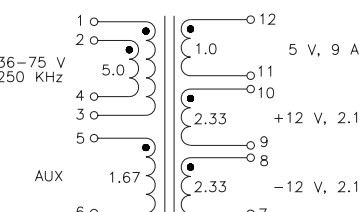


# High Frequency Wire Wound Transformers



-  **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

|                 |                 |                                                |                        |                                                                                                                  |
|-----------------|-----------------|------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>PA0273NL</b> | 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                                           |                        |                                                                                                                  |
| <b>PA0751NL</b> | 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                                         |                        |                                                                                                                  |
| <b>PA0769NL</b> | 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)                                          | 137 $\mu$ H $\pm$ 32%  |  |
|          | Lk. Inductance  | (3-4) with (11, 10, 9, 8) shorted              | 1.0 $\mu$ H MAX        |  |
|          | DCR             | (3-4)                                          | 35m $\Omega$ MAX       |  |
|          |                 | (1-2)                                          | 199m $\Omega$ MAX      |  |
|          |                 | (5-6)                                          | 100m $\Omega$ MAX      |  |
|          |                 | (11-10)=(9-8)                                  | 17m $\Omega$ MAX       |  |
|          | Hi-Pot          | Pri-Sec                                        | 500Vrms                |  |
|          | K1 Factor       | 29.3                                           |                        |  |
| PA1366NL | Pri. Inductance | (2, 3-4, 5)                                    | 10 $\mu$ H $\pm$ 10%   |  |
|          | Lk. Inductance  | (2, 3-4, 5) with (11, 8) shorted               | 0.3 $\mu$ H MAX        |  |
|          | DCR             | (2, 3-4, 5)                                    | 15.75m $\Omega$ MAX    |  |
|          |                 | (11-8)                                         | 560m $\Omega$ MAX      |  |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms               |  |
|          | K1 Factor       | 322.6                                          |                        |  |
| PA1477NL | Pri. Inductance | (1, 2-3, 4)                                    | 38.3 $\mu$ H $\pm$ 7%  |  |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 1.0 $\mu$ H MAX        |  |
|          | DCR             | (1-3)                                          | 72m $\Omega$ MAX       |  |
|          |                 | (2-4)                                          | 85m $\Omega$ MAX       |  |
|          |                 | (12, 11, 10-9, 8, 7)                           | 2.5m $\Omega$ MAX      |  |
|          |                 | (5-6)                                          | 230m $\Omega$ MAX      |  |
|          | Hi-Pot          | Pri-Sec                                        | 1800Vrms               |  |
|          | K1 Factor       | 772.2                                          |                        |  |
| PA1558NL | Pri. Inductance | (1, 2-3, 4)                                    | 11.5 $\mu$ H $\pm$ 10% |  |
|          | Lk. Inductance  | (1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted | 0.5 $\mu$ H MAX        |  |
|          | DCR             | (1, 2-3, 4)                                    | 28m $\Omega$ MAX       |  |
|          |                 | (8-7)                                          | 12m $\Omega$ MAX       |  |
|          |                 | (12-11)                                        | 5m $\Omega$ MAX        |  |
|          |                 | (10-9)                                         | 62m $\Omega$ MAX       |  |
|          |                 | (5-6)                                          | 190m $\Omega$ MAX      |  |
|          | Hi-Pot          | Pri-Sec                                        | 1500Vrms               |  |
|          | K1 Factor       | 463.7                                          |                        |  |

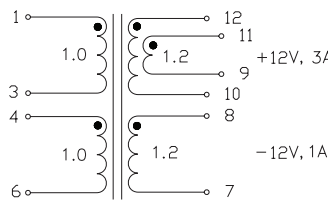
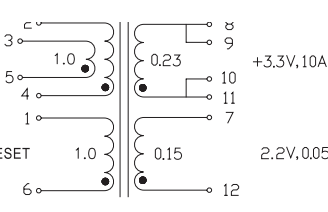
## Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

|          |                 |                                                |            |  |
|----------|-----------------|------------------------------------------------|------------|--|
| 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                                           |            |  |
| 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                                          |            |  |
| 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                                          |            |  |
| 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                                          |            |  |
| 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                                          |            |  |

## 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:

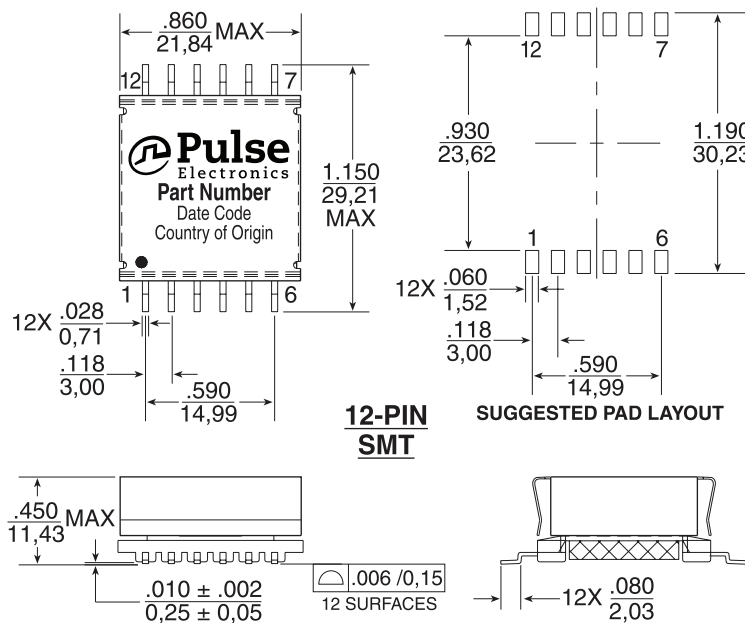
1. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
2. The above transformers and inductors have been tested and approved by Pulse's power IC partners and are sited in the appropriate datasheet or evaluation board documentation at 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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С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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