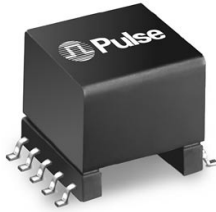


# High Frequency Wire Wound Transformers

EP13Plus Platforms - SMT



- 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

| Pulse PN     | Electrical Specifications @25C – Operating Temperature -40C to 130C <sup>1</sup> |                                 |              | Schematic                  |        |
|--------------|--|---------------------------------|--------------|----------------------------|--------|
| PA3855.001NL | Pri. Inductance  | (1-3)                           | 54uH +/- 10% | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/ (10,9,6,7,4,5) shorted | 0.67uH Max   |                            |        |
|              | DCR  | (1-3)                           | 62           |                            | mΩ Max |
|              |  | (9-6)                           | 6.5          |                            |        |
|              |  | (10-7)                          | 6.5          |                            |        |
|              |  | (4-5)                           | 120          |                            |        |
| Hi-Pot       | Pri-Sec  | 2250 Vdc                        |              |                            |        |
| K1 Factor    | 1125.0   |                                 |              |                            |        |
| PA3855.002NL | Pri. Inductance  | (1-3)                           | 48uH +/- 10% | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/ (10,9,6,7,4,5) shorted | 0.67uH Max   |                            |        |
|              | DCR  | (1-3)                           | 62           |                            | mΩ Max |
|              |  | (9-6)                           | 10           |                            |        |
|              |  | (10-7)                          | 10           |                            |        |
|              |  | (4-5)                           | 120          |                            |        |
| Hi-Pot       | Pri-Sec  | 2250 Vdc                        |              |                            |        |
| K1 Factor    | 1000.0   |                                 |              |                            |        |
| PA3855.003NL | Pri. Inductance  | (1-3)                           | 41uH +/- 10% | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/ (10,9,6,7,4,5) shorted | 0.67uH Max   |                            |        |
|              | DCR  | (1-3)                           | 62           |                            | mΩ Max |
|              |  | (9-6)                           | 20           |                            |        |
|              |  | (10-7)                          | 23           |                            |        |
|              |  | (4-5)                           | 120          |                            |        |
| Hi-Pot       | Pri-Sec  | 2250 Vdc                        |              |                            |        |
| K1 Factor    | 854.2  |                                 |              |                            |        |
| PA3855.004NL | Pri. Inductance  | (1-3)                           | 21uH +/- 10% | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/ (10,9,6,7,4,5) shorted | 0.3uH Max    |                            |        |
|              | DCR  | (1-3)                           | 31           |                            | mΩ Max |
|              |  | (9-6)                           | 10           |                            |        |
|              |  | (10-7)                          | 10           |                            |        |
|              |  | (4-5)                           | 180          |                            |        |
| Hi-Pot       | Pri-Sec  | 2250 Vdc                        |              |                            |        |
| K1 Factor    | 538.5  |                                 |              |                            |        |

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| Pulse PN     | Electrical Specifications @25C – Operating Temperature -40C to 130C <sup>1</sup> |                                    |                | Schematic                  |        |
|--------------|--|------------------------------------|----------------|----------------------------|--------|
| PA3855.005NL | Pri. Inductance  | (1-3)                              | 21uH +/- 10%   | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.3uH Max      |                            |        |
|              | DCR  | (1-3)                              | 31             |                            | mΩ Max |
|              |  | (9-6)                              | 14             |                            |        |
|              |  | (10-7)                             | 14             |                            |        |
|              |  | (4-5)                              | 180            |                            |        |
| Hi-Pot       | Pri-Sec  | 2250                               | Vdc            |                            |        |
| K1 Factor    | 583.3  |                                    |                |                            |        |
| PA3855.006NL | Pri. Inductance  | (1-3)                              | 21uH +/- 10%   | <p>Flyback Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.3uH Max      |                            |        |
|              | DCR  | (1-3)                              | 31             |                            | mΩ Max |
|              |  | (9-6)                              | 58             |                            |        |
|              |  | (10-7)                             | 58             |                            |        |
|              |  | (4-5)                              | 180            |                            |        |
| Hi-Pot       | Pri-Sec  | 2250                               | Vdc            |                            |        |
| K1 Factor    | 583.3  |                                    |                |                            |        |
| PA3856.001NL | Pri. Inductance  | (1-3)                              | 100 uH +/- 15% | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.4uH Max      |                            |        |
|              | DCR  | (1-3)                              | 29.4           |                            | mΩ Max |
|              |  | (9-6)                              | 6.5            |                            |        |
|              |  | (10-7)                             | 6.5            |                            |        |
|              |  | (4-5)                              | 120            |                            |        |
| Hi-Pot       | Pri-Sec  | 2250                               | Vdc            |                            |        |
| K1 Factor    | 27.8   |                                    |                |                            |        |
| PA3856.002NL | Pri. Inductance  | (1-3)                              | 100uH +/- 15%  | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.4uH Max      |                            |        |
|              | DCR  | (1-3)                              | 29.4           |                            | mΩ Max |
|              |  | (9-6)                              | 10             |                            |        |
|              |  | (10-7)                             | 10             |                            |        |
|              |  | (4-5)                              | 120            |                            |        |
| Hi-Pot       | Pri-Sec  | 2250                               | Vdc            |                            |        |
| K1 Factor    | 27.8   |                                    |                |                            |        |
| PA3856.003NL | Pri. Inductance  | (1-3)                              | 100uH +/- 15%  | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.4uH Max      |                            |        |
|              | DCR  | (1-3)                              | 29.4           |                            | mΩ Max |
|              |  | (9-6)                              | 31.6           |                            |        |
|              |  | (10-7)                             | 36             |                            |        |
|              |  | (4-5)                              | 120            |                            |        |
| Hi-Pot       | Pri-Sec  | 2250                               | Vdc            |                            |        |
| K1 Factor    | 27.8   |                                    |                |                            |        |

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EP13Plus Platforms - SMT



| Pulse PN     | Electrical Specifications @25C – Operating Temperature -40C to 130C <sup>1</sup> |                                    |               | Schematic                  |        |
|--------------|--|------------------------------------|---------------|----------------------------|--------|
| PA3856.004NL | Pri. Inductance  | (1-3)                              | 128uH +/- 25% | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.15uH Max    |                            |        |
|              | DCR  | (1-3)                              | 17.6          |                            | mΩ Max |
|              |  | (9-6)                              | 14.4          |                            |        |
|              |  | (10-7)                             | 17            |                            |        |
|              |  | (4-5)                              | 410           |                            |        |
|              | Hi-Pot   | Pri-Sec                            | 2250          |                            | Vdc    |
| K1 Factor    | 41.7   |                                    |               |                            |        |
| PA3856.005NL | Pri. Inductance  | (1-3)                              | 128uH +/- 15% | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.15uH Max    |                            |        |
|              | DCR  | (1-3)                              | 17.6          |                            | mΩ Max |
|              |  | (9-6)                              | 31.6          |                            |        |
|              |  | (10-7)                             | 36            |                            |        |
|              |  | (4-5)                              | 410           |                            |        |
|              | Hi-Pot   | Pri-Sec                            | 2250          |                            | Vdc    |
| K1 Factor    | 41.7   |                                    |               |                            |        |
| PA3856.006NL | Pri. Inductance  | (1-3)                              | 128uH +/- 15% | <p>Forward Transformer</p> |        |
|              | Lk. Inductance   | (1-3) w/<br>(10,9,6,7,4,5) shorted | 0.15uH Max    |                            |        |
|              | DCR  | (1-3)                              | 17.6          |                            | mΩ Max |
|              |  | (9-6)                              | 105.6         |                            |        |
|              |  | (10-7)                             | 122           |                            |        |
|              |  | (4-5)                              | 426           |                            |        |
|              | Hi-Pot   | Pri-Sec                            | 2250          |                            | Vdc    |
| K1 Factor    | 41.7   |                                    |               |                            |        |

- Notes:**
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
  - 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 flux density use the following formula:  

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

$$CoreLoss \text{ (W)} = 3.84E-14 * (Freq\_kHz)^{1.65} * (\Delta B\_Gauss)^{2.65}$$
 where ΔB can be calculated as:  
 For Flyback Topology:  $\Delta B = K1\_Factor * \Delta I(A)$   
 For Forward Topology:  $\Delta B = K1\_Factor * Volt\text{-}\mu sec$
  - 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.
  - Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA3855.001NL becomes PA3855.001NLT). Pulse complies with industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=32mm), pitch (Po=24mm) and depth (Ko=13.2mm).

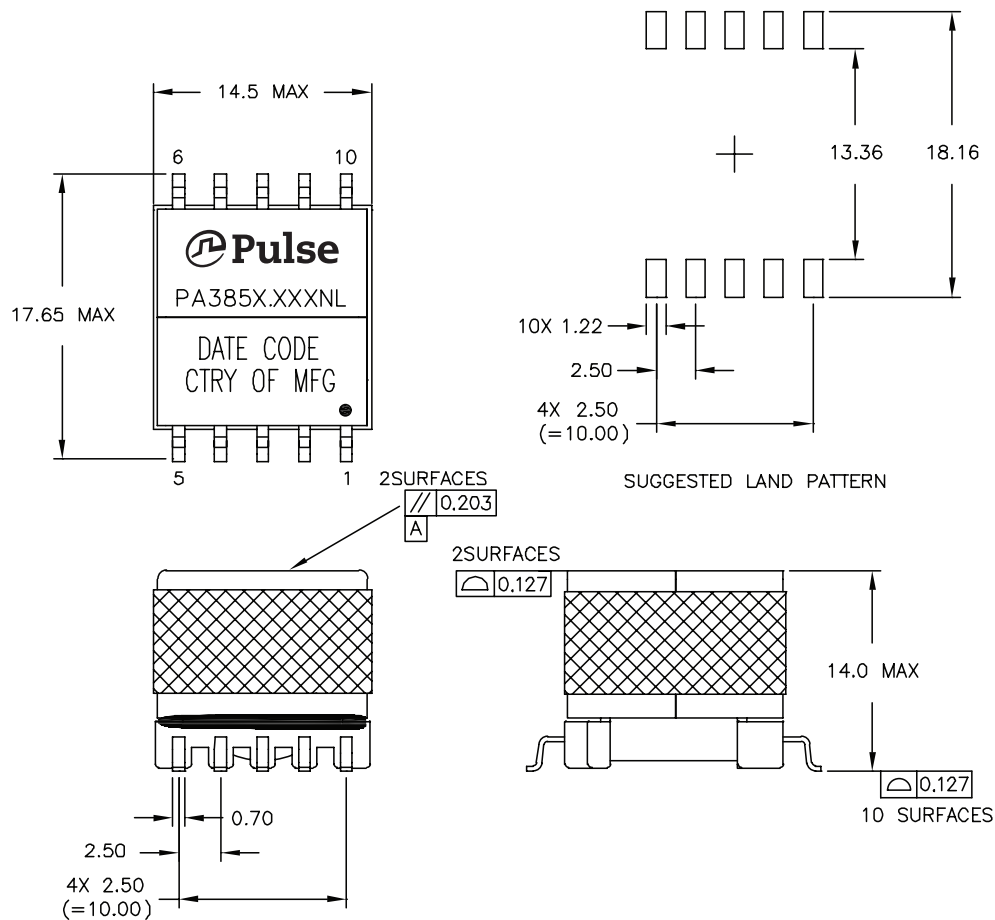
# High Frequency Wire Wound Transformers

EP13Plus Platforms - SMT



## Mechanical

### PA3855.XXNL/ PA3856.XXNL



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