## HIGH FREQUENCY WIRE WOUND TRANSFORMERS EFD20 Platforms - THT





- Power Range: Up to120W
- Height: 13.0mm Max
- Footprint: 22.4mm x 21.0mm Max
- Topology: Forward and Flyback

|          | Electi          | rical Specifications @ 25°C — Ope | erating Temperature | e -40°C to 130°C <sup>5</sup>   |  |
|----------|-----------------|-----------------------------------|---------------------|---|--|
| PA1040NL | Pri. Inductance | (2-3)                             | 222µH ±30%          |   |  |
|          | Lk. Inductance  | (2-3) with (5,6,7,8) shorted      | 2µH MAX             | 30-57V 20 10 10V 50   |  |
|          | DCR             | (2-3)                             | 45mΩ MAX            | 250 KHZ 2.0 2 1.0 + 12V, 5A   |  |
|          |                 | (5-6)                             | 15mΩ MAX            |   |  |
|          |                 | (7-8)                             | 24mΩ MAX            |   |  |
|          |                 | (1-4)                             | 80mΩ MAX            | 12V, 0.1A 1.0 - 12V, 1.6A   |  |
|          | Hi-Pot          | Pri-Sec                           | 1500 Vdc            | 4 • 8   |  |
|          | K1 Factor       | 23                                |                     | FOWARD TRANSFORMER  |  |
| PA1425NL | Pri. Inductance | (1,2-3,4)                         | 110µH ±30%          |   |  |
|          | Lk. Inductance  | (1,2-3,4) with (5,6,7,8) shorted  | 2µH MAX             |   |  |
|          | DCR             | (2-3)                             | 82mΩ MAX            |   |  |
|          |                 | (1-4)                             | 102mΩ MAX           | 34–80V 2.0  |  |
|          |                 | (7,8-5,6)                         | 7.5mΩ MAX           |   |  |
|          | Hi-Pot          | Pri-Sec                           | 1500 Vrms           |   |  |
|          | K1 Factor       | 23                                |                     | FOWARD TRANSFORMER  |  |
| PA1426NL | Pri. Inductance | (7,8-5,6)                         | 10.6µH ±7%          |   |  |
|          | Lk. Inductance  | (7,8-5,6) with (2-3) shorted      | 1.5µH MAX           | 2 ~ 7,8   |  |
|          | DCR             | (7,8-5,6)                         | 13mΩ MAX            | 10µH, 20mA 1.0 ↓ 1.0 10µH, 10A  |  |
|          |                 | (2-3)                             | 480mΩ MAX           | $\prec$   |  |
|          | Hi-Pot          | Pri-Sec                           | 1500 Vrms           | 3 ~ 5,6   |  |
|          | K1 Factor       | 263                               |                     | OUTPUT INDUCTOR   |  |
| PA1522NL | Pri. Inductance | (1,2-3,4)                         | 160.2µH ±33%        |   |  |
|          | Lk. Inductance  | (1,2-3,4) with (5,6,7,8) shorted  | 1.5µH MAX           | 1 • • 8,7   |  |
|          | DCR             | (1-3)                             | 60mΩ MAX            | $\begin{array}{c} 2 & 2 & 0 & 0 \\ 36-72 & V & 0.0 \\ 200 & \text{KHz} & 0.0 \\ \end{array} \xrightarrow{\begin{array}{c} 1 & 0 \\ 0.0 \\$ |  |
|          |                 | (2-4)                             | $72m\Omega$ MAX     | 36—72 V 6.0 → →   |  |
|          |                 | (8,7-6,5)                         | 2.5mΩ MAX           |   |  |
|          |                 | Pri-Sec                           | 1800 Vdc            | 3 <u> </u>  |  |
|          |                 | 26.9                              |                     | FOWARD TRANSFORMER  |  |
| PA2583NL | Pri. Inductance | (1-2)                             | 40µH ±10%           | 1 •• 5  |  |
|          | Lk. Inductance  | (1-2) with (5,6,7,8) shorted      | 0.33µH MAX          | 00 75 V   |  |
|          | DCR             | (1-2)                             | 18mΩ MAX            | 32—75 V 1.0<br>250 KHz 1.0<br>250  |  |
|          |                 | (3-4)                             | 61mΩ MAX            |   |  |
|          |                 | (5-6)                             | 24mΩ MAX            |   |  |
|          |                 | (7-8)                             | 62mΩ MAX            | 8 V, 20 mA 0.4 → - 0.4 8 V, 20 mA   |  |
|          | Hi-Pot          | Pri-Sec                           | 1500 Vrms           |   |  |
|          | K1 Factor       | 32.3                              |                     | FOWARD TRANSFORMER  |  |

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### 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 flux density use the following formula:

Bpk (Gauss) = K1\_Factor \* lpk(A)

4. 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 (W) = 1.32E-13 \* (Freq\_kHz)<sup>1.63</sup> \* ( $\Delta$ B\_Gauss)<sup>2.63</sup>

#### where $\Delta B$ can be calculated as:

For Flyback Topology:  $\Delta B = K1_Factor * \Delta(A)$ For Forward Topology:  $\Delta B = K1_Factor * Volt-\mu sec$   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.

#### 8-PIN THT 826 20,98 MAX <u>.512</u> 13,00 MAX Pin 4 Pin 4 Pin 8 Pin 1 8X Ø<u>.031</u> 197 5.00591 ± .006 Pulse .882 $15.01 \pm 0.15$ 22,40 Part Number Date Code Country of Origin MAX 689 ± .006 $17,50 \pm 0,15$ SUGGESTED PAD LAYOUT

Mechanical

### **For More Information:**

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