

High Frequency Wire Wound Transformers

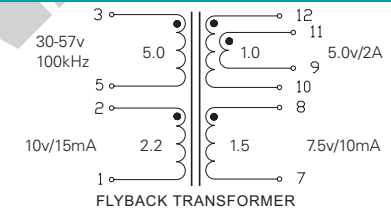
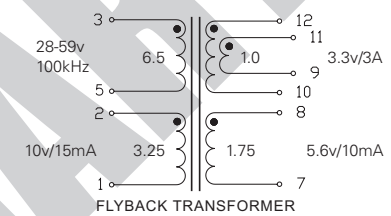
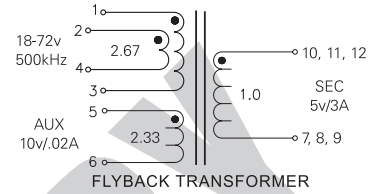
EFD15 Platforms - SMT



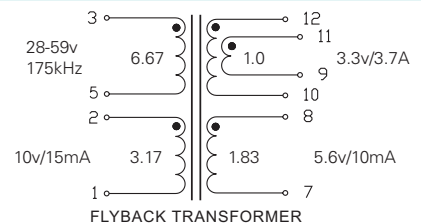
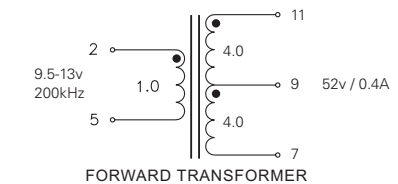
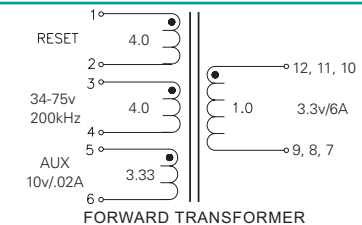
- Power Range:** Up to 40W
- Height:** 8.4mm Max
- Footprint:** 22.2mm x 17.2mm Max
- Topology:** Forward and Flyback

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C⁵

Part Number	Parameter	Value	Notes
PA0476NL	Pri. Inductance	(1,2-3,4)	9.85μH ±10%
	Lk. Inductance	(1,2-3,4) with (5,6,7,8,9,10,11,12) shorted	0.15μH MAX
	DCR	(1-3)	47mΩ MAX
		(2-4)	47mΩ MAX
		(5-6)	87mΩ MAX
		(12,11,10-7,8,9)	8mΩ MAX
Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor		820.8	
PA0691NL	Pri. Inductance	(3-5)	170.3μH ±12%
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	2.4μH MAX
	DCR	(3-5)	600mΩ MAX
		(2-1)	2000mΩ MAX
		(12,11-10,9)	20mΩ MAX
		(8-7)	720mΩ MAX
Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor		2183.3	
PA1039NL	Pri. Inductance	(3-5)	157.5μH ±10%
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	2μH MAX
	DCR	(3-5)	500mΩ MAX
		(2-1)	1300mΩ MAX
		(12,11-10,9)	25mΩ MAX
		(8-7)	760mΩ MAX
Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor		2100.0	
PA1067NL	Pri. Inductance	(3-4)	113μH ±30%
	Lk. Inductance	(3-4) with (12,11,10,9,8,7) shorted	1μH MAX
	DCR	(1-2)	70mΩ MAX
		(3-4)	70mΩ MAX
		(5-6)	70mΩ MAX
		(12,11,10-9,8,7)	6mΩ MAX
Hi-Pot	Pri-Sec	500Vrms	
K1 Factor		55.6	
PA1169NL	Pri. Inductance	(2-5)	38.2μH ±30%
	Lk. Inductance	(2-5) with (11,9,7) shorted	0.5μH MAX
	DCR	(2-5)	27mΩ MAX
		(11-7)	850mΩ MAX
	Hi-Pot	Pri-Sec	1500Vrms
K1 Factor		95.2	
PA1275NL	Pri. Inductance	(3-5)	100.7μH ±10%
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	2μH MAX
	DCR	(3-5)	485mΩ MAX
		(2-1)	1500mΩ MAX
		(12,11-10,9)	16mΩ MAX
		(8-7)	575mΩ MAX
Hi-Pot	Pri-Sec	1800Vdc	
K1 Factor		1678.3	



(Note: Height of PA1039NL is 8.9mm Max)



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PA1424NL	Pri. Inductance	(3-4)	62µH ±12%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(3-4) with (10,9,8,7) shorted	1µH MAX	
	DCR	(3-4)	250mΩ MAX	
		(10-9)	30mΩ MAX	
		(7-8)	20mΩ MAX	
		(2-1)	400mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	1878.8			
PA1627NL	Pri. Inductance	(3-5)	100.7µH ±12%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3µH MAX	
	DCR	(3-5)	485mΩ MAX	
		(2-1)	1850mΩ MAX	
		(12,11-10,9)	16mΩ MAX	
	Hi-Pot	Pri-Sec	2150Vdc	
K1 Factor	1678.3			
PA1646NL	Pri. Inductance	(3-5)	100.7µH ±5%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3µH MAX	
	DCR	(3-5)	485mΩ MAX	
		(2-1)	1150mΩ MAX	
		(12,11-10,9)	25mΩ MAX	
Hi-Pot	Pri-Sec	1500Vrms		
K1 Factor	1678.3			
PA1706NL	Pri. Inductance	(3-5)	170.1µH ±12%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(3-5) with (12,11,10,9,8,7) shorted	3.5µH MAX	
	DCR	(3-5)	643mΩ MAX	
		(12,11-10,9)	6mΩ MAX	
		(8-7)	60mΩ MAX	
		(2-1)	123mΩ MAX	
Hi-Pot	Pri-Sec	1500Vrms		
K1 Factor	2520.0			
PA1741NL	Pri. Inductance	(1-3)	144µH ±10%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(1-3) with (12,11,10,9,8,7) shorted	1µH MAX	
	DCR	(1-3)	150mΩ MAX	
		(12,11-10,9)	18mΩ MAX	
		(8-7)	60mΩ MAX	
Hi-Pot	Pri-Sec	1800Vrms		
K1 Factor	27.8			
PA1745NL	Pri. Inductance	(2-5)	37.1µH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(2-5) with (8,9,10,11) shorted	1µH MAX	
	DCR	(2-5)	78mΩ MAX	
		(11-10)	34mΩ MAX	
		(8-7)	38mΩ MAX	
Hi-Pot	Pri-Sec	600Vrms		
K1 Factor	1177.8			

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Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C⁵

Model	Parameter	Value	Diagram	
PA1994NL	Pri. Inductance	(3-5)		
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted		
	DCR	(3-5)		850mΩ MAX
		(2-1)		145mΩ MAX
		(12,11-10,9)		75mΩ MAX
		(8-7)		55mΩ MAX
	Hi-Pot	Pri-Sec		1500Vrms
K1 Factor	2520.0			
PA1995NL	Pri. Inductance	(3-5)		
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted		
	DCR	(3-5)		850mΩ MAX
		(2-1)		145mΩ MAX
		(12,11-10,9)		70mΩ MAX
		(8-7)		55mΩ MAX
	Hi-Pot	Pri-Sec		1500Vrms
K1 Factor	2520.0			
PA1996NL	Pri. Inductance	(3-5)		
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted		
	DCR	(3-5)		850mΩ MAX
		(2-1)		145mΩ MAX
		(12,11-10,9)		37mΩ MAX
		(8-7)		55mΩ MAX
	Hi-Pot	Pri-Sec		1500Vrms
K1 Factor	2520.0			
PA1997NL	Pri. Inductance	(3-5)		
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted		
	DCR	(3-5)		850mΩ MAX
		(2-1)		150mΩ MAX
		(12,11-10,9)		15mΩ MAX
		(8-7)		65mΩ MAX
	Hi-Pot	Pri-Sec		1500Vrms
K1 Factor	2520.0			
PA2026NL	Pri. Inductance	(3-5)		
	Lk. Inductance	(3-5) with (7,9,10,12) shorted		
	DCR	(3-5)		150mΩ MAX
		(12-10)		26mΩ MAX
		(9-7)		28mΩ MAX
		(2-1)		245mΩ MAX
	Hi-Pot	Pri-Sec		1500Vrms
K1 Factor	840.0			

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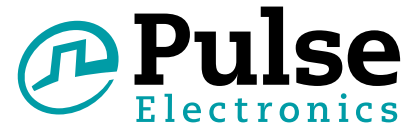
Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C⁵

Part Number	Parameter	Winding Configuration	Value	Transformer Diagram
PA2069NL	Pri. Inductance	(1,2-3,4)	40μH ±13%	
	Lk. Inductance	(1,2-3,4) with (5,6,7,8,9,10,11,12) shorted	0.825μH MAX	
	DCR	(1,2-3,4)	130mΩ MAX	
		(5-6)	315mΩ MAX	
		(12,11,10-9,8,7)	3.5mΩ MAX	
	Hi-Pot	Pri-Sec	1650Vrms	
K1 Factor		1111.1		
PA2196NL	Pri. Inductance	(3-5)	70μH ±10%	
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	1.2μH MAX	
	DCR	(3-5)	183mΩ MAX	
		(2-1)	1100mΩ MAX	
		(12,11-10,9)	14mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor		1555.6		
PA2265NL	Pri. Inductance	(1,2-12,11)	122.5μH ±10%	
	Lk. Inductance	(1,2-12,11) with (5,6,8,7,3,10) shorted	2μH MAX	
	DCR	(1,2-12,11)	270mΩ MAX	
		(7,8,9-10,11,12)	63mΩ MAX	
		(5,6-8,7)	310mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor		2333.3		

PRELIMINARY

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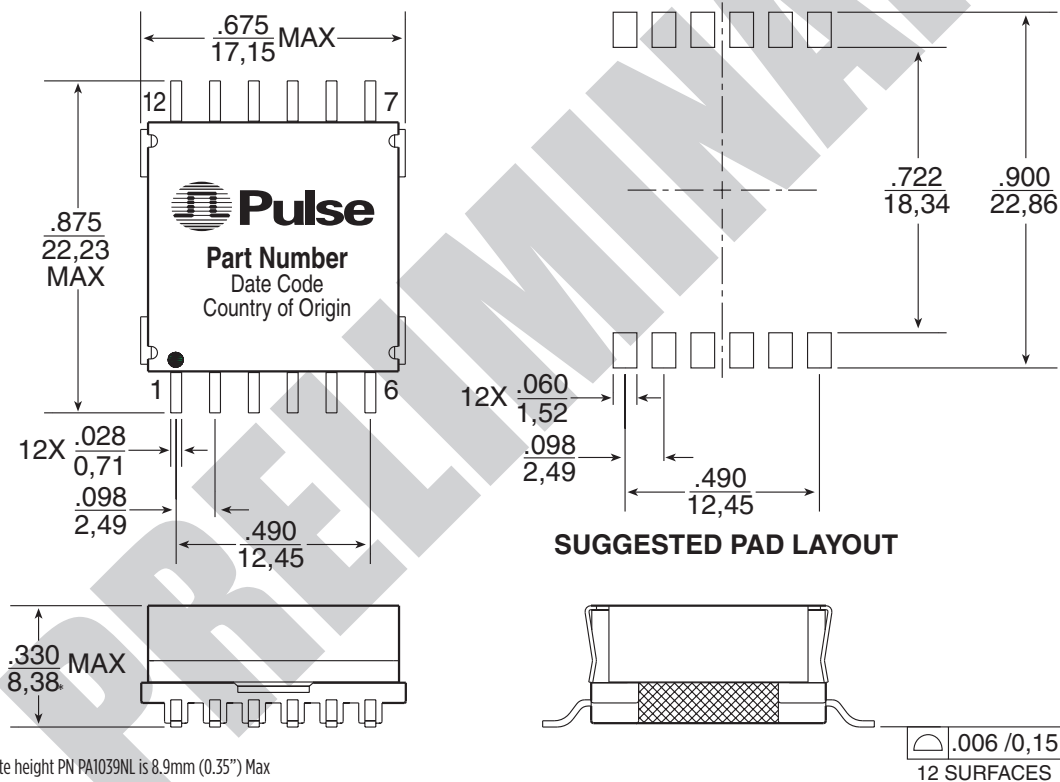
Notes

- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- 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.
- 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:

$$\text{Bpk (Gauss)} = K1_Factor * Ipk(A)$$
- In high volt- μ sec applications, it is important to calculate the core loss of the transformer. Approximate transformer core loss can be calculated as:

$$\text{CoreLoss (W)} = 4.6E-14 * (\text{Freq_kHz})^{1.63} * (\Delta B_Gauss)^{2.63}$$
 where ΔB can be calculated as:
 For Flyback Topology: $\Delta B = K1_Factor * \Delta(A)$
 For Forward Topology: $\Delta B = K1_Factor * \text{Volt-}\mu\text{sec}$
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA0476NL becomes PA0476NLT). 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) and depth (Ko=11.78mm).
- 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



* Please note height PN PA1039NL is 8.9mm (0.35") Max

For More Information

Pulse Worldwide Headquarters

12220 World Trade Drive
San Diego, CA 92128
U.S.A.

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe

Zeppelinstrasse 15
71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 12

Pulse China Headquarters

B402, Shenzhen Academy of
Aerospace Technology Bldg.
10th Kejinan Road
High-Tech Zone
Nanshan District
Shenzhen, PR China 518057

Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China

Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Road West
Shanghai 200336
China

Tel: 86 21 62787060
Fax: 86 2162786973

Pulse South Asia

135 Joo Seng Road
#03-02
PM Industrial Bldg.
Singapore 368363

Tel: 65 6287 8998
Fax: 65 6287 8998

Pulse North Asia

3F No. 198, Zhongyuan Road
Zhongli City
Taoyuan County (32068)
Taiwan

Tel: 886 3 4356768
Fax: 886 3 4356823

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