

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

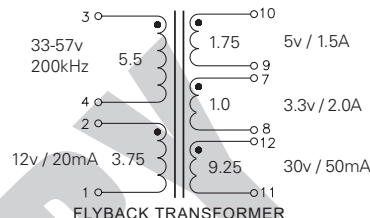
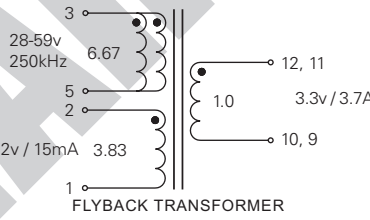
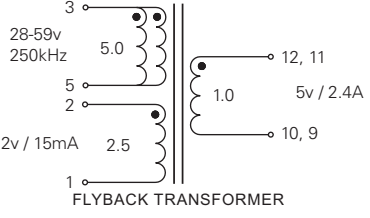
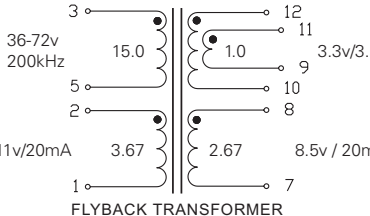
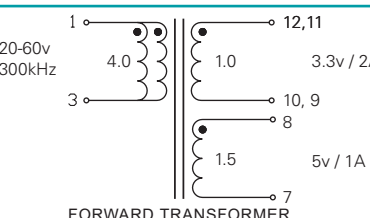
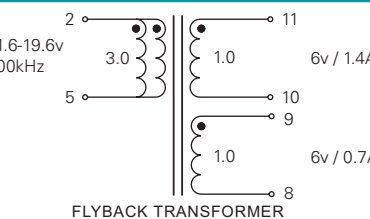
PA0476NL	Pri. Inductance	(1,2-3,4)	9.85μH ±10%	FLYBACK TRANSFORMER
	Lk. Inductance	(1,2-3,4) with (5,6,7,8,9,10,11,12) shorted	0.15μH MAX	
	DCR	(1-3)	47mΩ MAX	
		(2-4)	47mΩ MAX	
		(5-6)	87mΩ MAX	
		(12,11,10-7,8,9)	8mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
PA0691NL	Pri. Inductance	(3-5)	170.3μH ±12%	FLYBACK TRANSFORMER
	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	
PA1039NL	Pri. Inductance	(3-5)	157.5μH ±10%	FLYBACK TRANSFORMER (Note: Height of PA1039NL is 8.9mm Max)
	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	
PA1067NL	Pri. Inductance	(3-4)	113μH ±30%	FORWARD TRANSFORMER
	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	
PA1169NL	Pri. Inductance	(2-5)	38.2μH ±30%	FORWARD TRANSFORMER
	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	
PA1275NL	Pri. Inductance	(3-5)	100.7μH ±10%	FLYBACK TRANSFORMER
	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	

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PA1424NL	Pri. Inductance	(3-4)	62μH ±12%	
	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	
		(12-11)	2400mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
KI Factor	1878.8			
PA1627NL	Pri. Inductance	(3-5)	100.7μH ±12%	
	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	
KI Factor	1678.3			
PA1646NL	Pri. Inductance	(3-5)	100.7μH ±5%	
	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	
KI Factor	1678.3			
PA1706NL	Pri. Inductance	(3-5)	170.1μH ±12%	
	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	
KI Factor	2520.0			
PA1741NL	Pri. Inductance	(1-3)	144μH ±10%	
	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	
KI Factor	27.8			
PA1745NL	Pri. Inductance	(2-5)	37.1μH ±10%	
	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	
KI Factor	1177.8			

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PA1994NL	Pri. Inductance	(3-5)	170.1 μ H $\pm$ 12%	
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3.5 μ H MAX	
	DCR	(3-5)	850m Ω MAX	
		(2-1)	145m Ω MAX	
		(12,11-10,9)	75m Ω MAX	
		(8-7)	55m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	2520.0			
PA1995NL	Pri. Inductance	(3-5)	170.1 μ H $\pm$ 12%	
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3.5 μ H MAX	
	DCR	(3-5)	850m Ω MAX	
		(2-1)	145m Ω MAX	
		(12,11-10,9)	70m Ω MAX	
		(8-7)	55m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	2520.0			
PA1996NL	Pri. Inductance	(3-5)	170.1 μ H $\pm$ 12%	
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3.5 μ H MAX	
	DCR	(3-5)	850m Ω MAX	
		(2-1)	145m Ω MAX	
		(12,11-10,9)	37m Ω MAX	
		(8-7)	55m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	2520.0			
PA1997NL	Pri. Inductance	(3-5)	170.1 μ H $\pm$ 12%	
	Lk. Inductance	(3-5) with (7,8,9,10,11,12) shorted	3.5 μ H MAX	
	DCR	(3-5)	850m Ω MAX	
		(2-1)	150m Ω MAX	
		(12,11-10,9)	15m Ω MAX	
		(8-7)	65m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	2520.0			
PA2026NL	Pri. Inductance	(3-5)	25.2 μ H $\pm$ 12%	
	Lk. Inductance	(3-5) with (7,9,10,12) shorted	1 μ H MAX	
	DCR	(3-5)	150m Ω MAX	
		(12-10)	26m Ω MAX	
		(9-7)	28m Ω MAX	
		(2-1)	245m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	840.0			

High Frequency Wire Wound Transf

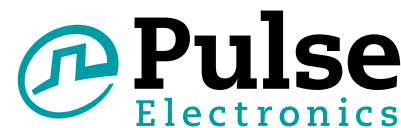
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Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C⁵

PA2069NL	Pri. Inductance	(1,2-3,4)	40μH ±13%	FLYBACK TRANSFORMER
	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%	FLYBACK TRANSFORMER
	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%	FLYBACK TRANSFORMER
	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		

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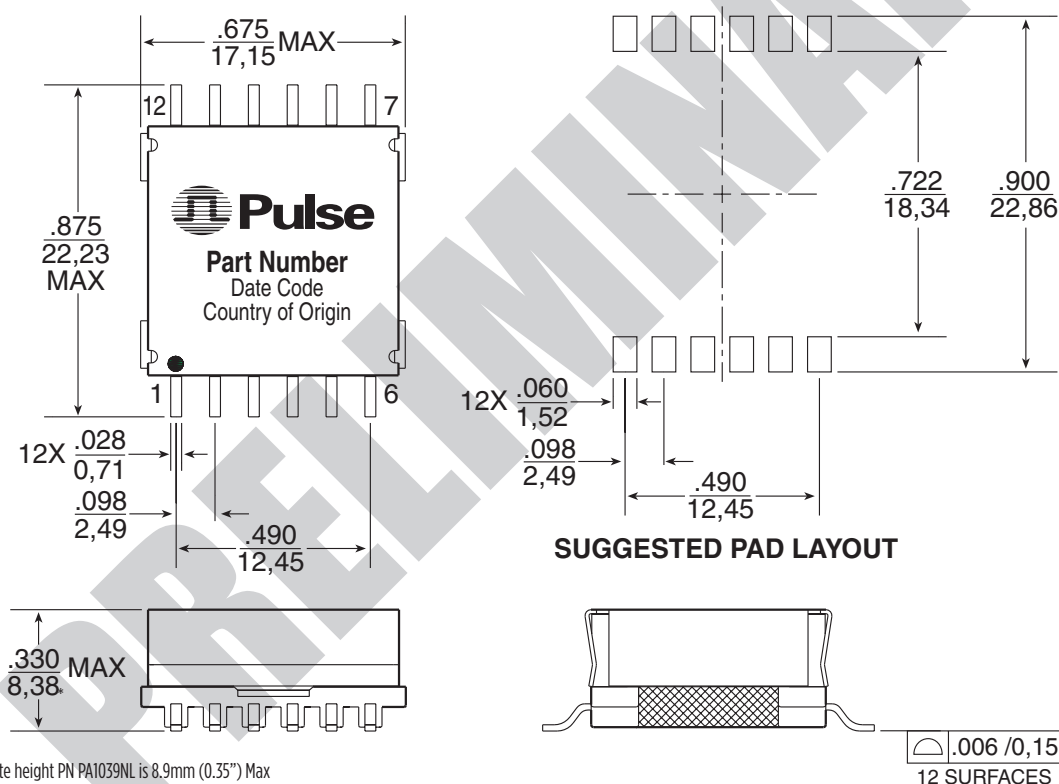
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Notes

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:
$$B_{pk} \text{ (Gauss)} = K1_Factor * I_{pk}(A)$$
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:
$$CoreLoss (W) = 4.6E-14 * (Freq_kHz)^{1.63} * (\Delta B_Gauss)^{2.63}$$
where ΔB can be calculated as:
For Flyback Topology: $\Delta B = K1_Factor * \Delta(A)$
For Forward Topology: $\Delta B = K1_Factor * Volt\text{-}\mu sec$
5. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA0476NL becomes PA0476NL_T). 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).
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



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