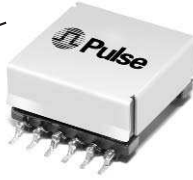






HIGH FREQUENCY WIRE WOUND TRANSFORMERS

EFD20 Platforms - SMT



-  **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 130°C⁵

PA0273NL	Pri. Inductance	(1,2-3,4)	307μH ±25%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (5,6,9,10) shorted	0.35μH MAX	
	DCR	(1,2-3,4)	65mΩ MAX	
		(7,8,9-10,11,12)	27mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vdc	
K1 Factor	20.2			
PA0751NL	Pri. Inductance	(1,2-3,4)	110μH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (12,11,10,9,8,7) shorted	2μH MAX	
	DCR	(4-5)	85mΩ MAX	
		(12,11,10-9,8,7)	12mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	1364.8			
PA0763NL	Pri. Inductance	(3,4-5,6)	114μH ±10%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(3,4-5,6) with (12,11,10,9,8,7) shorted	0.5μH MAX	
	DCR	(3,4-5,6)	20mΩ MAX	
		(12,11-10-9)	12mΩ MAX	
		(7-8)	32mΩ MAX	
Hi-Pot	Pri-Sec	700Vrms		
K1 Factor	32.3			
PA0769NL	Pri. Inductance	(1,2-3,4)	89.2μH ±18%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (12,11,10,9,8,7) shorted	1.5μH MAX	
	DCR	(1,2-3,4)	50mΩ MAX	
		(12-11)	3.8mΩ MAX	
		(10-9)=(8-7)	35mΩ MAX	
Hi-Pot	Pri-Sec	1500Vdc		
K1 Factor	21.5			
PA1066NL	Pri. Inductance	(3-4)	137μH ±32%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(3-4) with (11,10,9,8) shorted	1.0μH MAX	
	DCR	(3-4)	35mΩ MAX	
		(1-2)	199mΩ MAX	
		(5-6)	100mΩ MAX	
Hi-Pot	Pri-Sec	500Vrms		
K1 Factor	29.3			
PA1103NL	Pri. Inductance	(1-3)	55μH ±12%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1-3) with (4,5,11,10,9,8) shorted	2μH MAX	
	DCR	(1-3)	55mΩ MAX	
		(11,10-9,8)	6mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	1108.9			

HIGH FREQUENCY WIRE WOUND TRANSFORMERS

EFD20 Platforms - SMT



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

PA1366NL	Pri. Inductance	(2,3-4,5)	10μH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(2,3-4,5) with (11,8) shorted	0.3μH MAX	
	DCR	(2,3-4,5)	15.75mΩ MAX	
		(11-8)	560mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	322.6			
PA1442NL	Pri. Inductance	(2-5)	40.9μH ±32%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(2-5) with (12,11,10,9,8,7) shorted	1.0μH MAX	
	DCR	(2-5)	40mΩ MAX	
		(12-11)	4mΩ MAX	
		(10-9)	27mΩ MAX	
		(8-7)	19mΩ MAX	
Hi-Pot	Pri-Sec	1500Vrms		
K1 Factor	824.6			
PA1477NL	Pri. Inductance	(1,2-3,4)	38.3μH ±7%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (12,11,10,9,8,7) shorted	1.0μH MAX	
	DCR	(1-3)	72mΩ MAX	
		(2-4)	85mΩ MAX	
		(12,11,10-9,8,7)	2.5mΩ MAX	
		(5-6)	230mΩ MAX	
Hi-Pot	Pri-Sec	1800Vrms		
K1 Factor	772.2			
PA1558NL	Pri. Inductance	(1,2-3,4)	11.5μH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (12,11,10,9,8,7) shorted	0.5μH MAX	
	DCR	(1,2-3,4)	28mΩ MAX	
		(8-7)	12mΩ MAX	
		(12-11)	5mΩ MAX	
		(10-9)	62mΩ MAX	
(5-6)	190mΩ MAX			
Hi-Pot	Pri-Sec	1500Vrms		
K1 Factor	463.7			
PA1559NL	Pri. Inductance	(3,4-5,6)	66.1μH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(3,4-5,6) with (12,11,10,9,8,7) shorted	1.0μH MAX	
	DCR	(3,4-5,6)	82mΩ MAX	
		(12,11-10,9)	12mΩ MAX	
		(8-7)	97mΩ MAX	
		(1-2)	178mΩ MAX	
Hi-Pot	Pri-Sec	1500Vrms		
K1 Factor	1015.4			
PA1672NL	Pri. Inductance	(1-3)	7.75μH ±10%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1-3) with (12-7) shorted	0.5μH MAX	
	DCR	(1-3)	14mΩ MAX	
		(12-7)	154mΩ MAX	
	Hi-Pot	Pri-Sec	600Vrms	
K1 Factor	416.7			

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EFD20 Platforms - SMT



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

PA1692NL	Pri. Inductance	(3,4-5,6)	73μH ±30%	<p>FORWARD TRANSFORMER</p>
	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	
	Hi-Pot	(1-2)	115mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	40.3			
PA1735NL	Pri. Inductance	(1,2-3,4)	28.5μH ±5%	<p>FLYBACK TRANSFORMER</p>
	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	
	Hi-Pot	(5-6)	230mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
K1 Factor	574.6			
PA1736NL	Pri. Inductance	(1,2-3,4)	20.5μH ±5%	<p>FLYBACK TRANSFORMER</p>
	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	
	Hi-Pot	(5-6)	230mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
K1 Factor	413.3			
PA1835NL	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	0.25μH MAX	
	DCR	(1,2-3,4)	9.5mΩ MAX	
		(12,11,10-9,8,7)	3mΩ MAX	
	Hi-Pot	(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
K1 Factor	241.9			
PA1836NL	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)	5mΩ MAX	
	Hi-Pot	(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
K1 Factor	241.9			
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	
	Hi-Pot	(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
K1 Factor	241.9			

HIGH FREQUENCY WIRE WOUND TRANSFORMERS

EFD20 Platforms - SMT



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

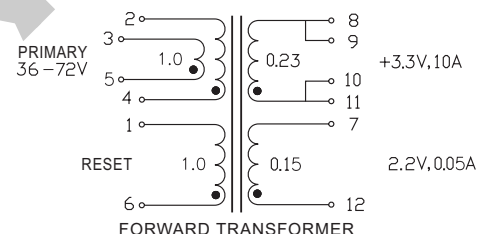
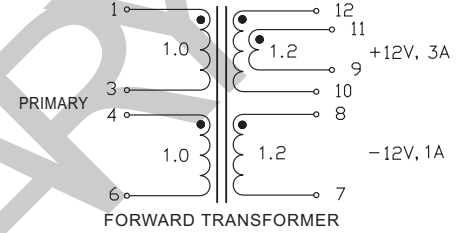
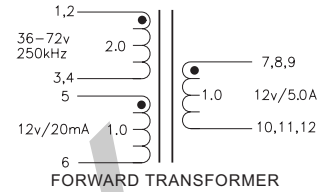
PA1877NL	Pri. Inductance	(1-3)	34.0μH ±5%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1-3) with (11,10-9,8) shorted	2μH MAX	
	DCR	(1-3)	180mΩ MAX	
		(11,10-9,8)	25mΩ MAX	
		(5-6)	400mΩ MAX	
	Hi-Pot	Pri-Sec	2000Vrms	
K1 Factor	522.3			
PA2046NL	Pri. Inductance	(1-3)	44.4μH ±5%	<p>FLYBACK TRANSFORMER</p>
	Lk. Inductance	(1-3) with (11,10-9,7) shorted	1μH MAX	
	DCR	(1-3)	130mΩ MAX	
		(11,10-9,7)	12mΩ MAX	
		(5-6)	240mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	716.1			
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	
K1 Factor	290.3			
PA2053NL	Pri. Inductance	(1,2-5,6)	292.0μH ±32%	<p>FORWARD 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	
K1 Factor	20.2			
PA2122NL	Pri. Inductance	(1,2-3,4)	48.4μH ±15%	<p>FORWARD TRANSFORMER</p>
	Lk. Inductance	(1,2-3,4) with (12,11,10,9,8,7) shorted	2μH MAX	
	DCR	(1,2-3,4)	80mΩ MAX	
		(8-7)	30mΩ MAX	
		(12-11)	4mΩ MAX	
		(10-9)	30mΩ MAX	
		(5-6)	135mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
K1 Factor	21.5			
PA2291NL	Pri. Inductance	(1-4)	57.6μH ±12%	<p>FORWARD 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	1500Vrms	
K1 Factor	26.9			

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Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C ⁵			
PA2398NL	Pri. Inductance	(1,2-3,4)	100μH ±12%
	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
K1 Factor	16.1		
PB2041NL	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		
PB2089NL	Pri. Inductance	(5,4-3,2)	112.0μH MIN
	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	1500Vrms
K1 Factor	24.8		



PRELIMINARY

HIGH FREQUENCY WIRE WOUND TRANSFORMERS

EFD20 Platforms - SMT



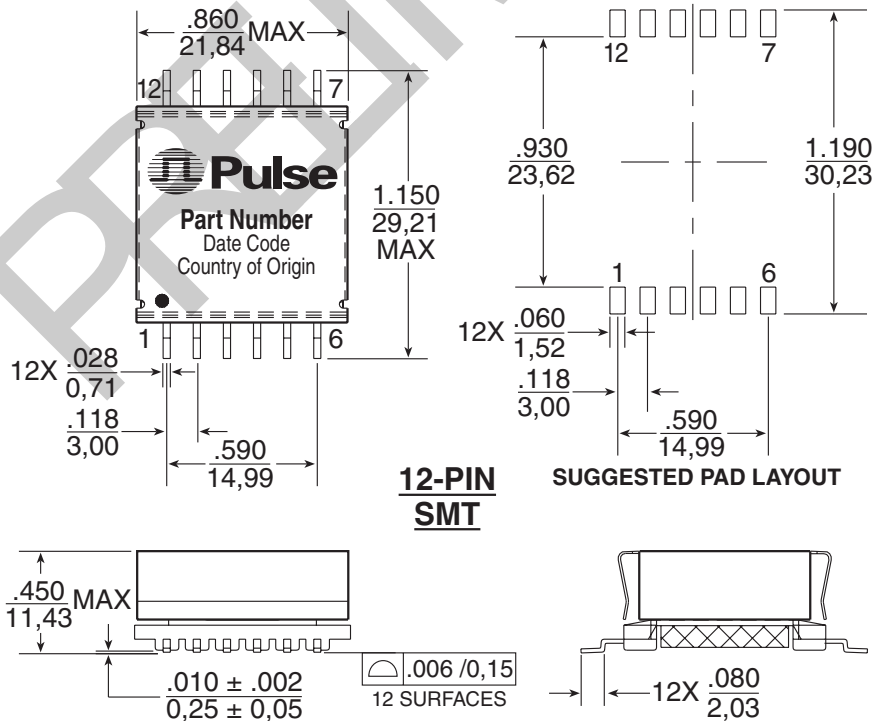
Notes

- 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:

$$Bpk \text{ (Gauss)} = K1_Factor * Ipk(A)$$
- 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:

$$CoreLoss \text{ (W)} = 1.32E-13 * (Freq_kHz)^{1.63} * (\Delta B_Gauss)^{2.63}$$
 where ΔB can be calculated as:
 For Flyback Topology: $\Delta B = K1_Factor * \Delta(A)$
 For Forward Topology: $\Delta B = K1_Factor * Volt\text{-}\mu\text{sec}$
- 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) 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



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