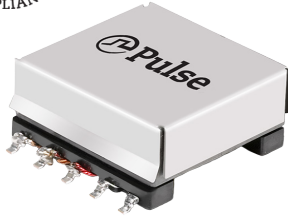


High Frequency Wire Wound Transformers

EFD20 Platforms – SMT



- Ⓢ **Power Range:** up to 95W
- Ⓢ **Height:** 11.4mm Max
- Ⓢ **Footprint:** 29.2mm x 21.8mm Max
- Ⓢ **Topology:** Forward and Flyback

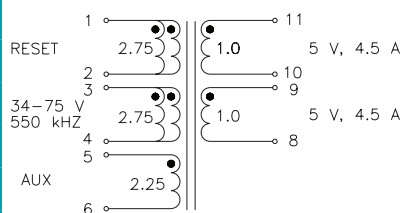
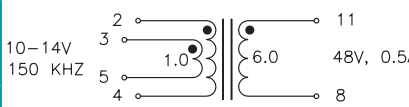
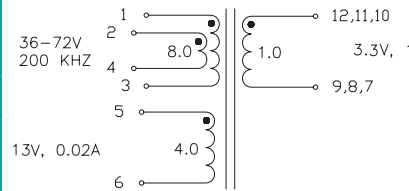
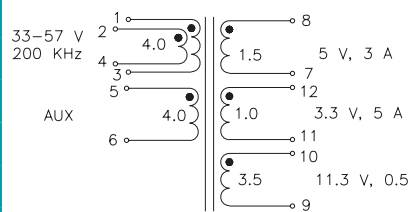
Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

PA0273NL	Pri. Inductance	(1, 2-3, 4)	307μH ±25%	FORWARD TRANSFORMER
	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	
		(5-6)	240mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
	K1 Factor	20.2		
PA0751NL	Pri. Inductance	(1, 2-3, 4)	110μH ±10%	FLYBACK TRANSFORMER
	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	
		(1-3)	300mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
	K1 Factor	1364.8		
PA0769NL	Pri. Inductance	(1, 2-5, 4)	89.2μH ±18%	FORWARD TRANSFORMER
	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	
		(5-6)	110mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vdc	
	K1 Factor	21.5		

High Frequency Wire Wound Transformers

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Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

PA1066NL	Pri. Inductance	(3-4)	137 μ H $\pm$ 32%	
	Lk. Inductance	(3-4) with (11, 10, 9, 8) shorted	1.0 μ H MAX	
	DCR	(3-4)	35m Ω MAX	
		(1-2)	199m Ω MAX	
		(5-6)	100m Ω MAX	
		(11-10)=(9-8)	17m Ω MAX	
	Hi-Pot	Pri-Sec	500Vrms	
	K1 Factor	29.3		FORWARD TRANSFORMER
PA1366NL	Pri. Inductance	(2, 3-4, 5)	10 μ H $\pm$ 10%	
	Lk. Inductance	(2, 3-4, 5) with (11, 8) shorted	0.3 μ H MAX	
	DCR	(2, 3-4, 5)	15.75m Ω MAX	
		(11-8)	560m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
	K1 Factor	322.6		FLYBACK TRANSFORMER
PA1477NL	Pri. Inductance	(1, 2-3, 4)	38.3 μ H $\pm$ 7%	
	Lk. Inductance	(1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted	1.0 μ H MAX	
	DCR	(1-3)	72m Ω MAX	
		(2-4)	85m Ω MAX	
		(12, 11, 10-9, 8, 7)	2.5m Ω MAX	
		(5-6)	230m Ω MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
	K1 Factor	772.2		FLYBACK TRANSFORMER
PA1558NL	Pri. Inductance	(1, 2-3, 4)	11.5 μ H $\pm$ 10%	
	Lk. Inductance	(1, 2-3, 4) with (12, 11, 10, 9, 8, 7) shorted	0.5 μ H MAX	
	DCR	(1, 2-3, 4)	28m Ω MAX	
		(8-7)	12m Ω MAX	
		(12-11)	5m Ω MAX	
		(10-9)	62m Ω MAX	
		(5-6)	190m Ω MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
		463.7		FLYBACK TRANSFORMER

High Frequency Wire Wound Transformers

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Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

PA1692NL	Pri. Inductance	(3, 4-5, 6)	73μH ±30%	
	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	
		(1-2)	115mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vdc	
	KI Factor	40.3		
				FORWARD TRANSFORMER
PA1735NL	Pri. Inductance	(1, 2-3, 4)	28.5μH ±5%	
	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	
		(5-6)	230mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
	KI Factor	574.6		
				FLYBACK TRANSFORMER
PA1736NL	Pri. Inductance	(1, 2-3, 4)	20.5μH ±5%	
	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	
		(5-6)	230mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vrms	
	KI Factor	413.3		
				FLYBACK TRANSFORMER
PA1835NL	Pri. Inductance	(1, 2-3, 4)	4.5μH ±5%	
	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	
		(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
	KI Factor	241.9		
				FLYBACK TRANSFORMER
PA1836NL	Pri. Inductance	(1, 2-3, 4)	4.5μH ±5%	
	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	
		(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
	KI Factor	241.9		
				FLYBACK TRANSFORMER

High Frequency Wire Wound Transformers

EFD20 Platforms – SMT



Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

PA1837NL	Pri. Inductance	(1, 2-3, 4)	4.5μH ±5%	FLYBACK TRANSFORMER
	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	
		(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vdc	
	KI Factor	241.9		
PA2047NL	Pri. Inductance	(1-3)	7.2μH ±5%	FLYBACK TRANSFORMER
	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	
	KI Factor	290.3		
PA2053NL	Pri. Inductance	(1, 2-5, 6)	292.0μH ±32%	FORWARD TRANSFORMER
	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	
	KI Factor	20.2		
PA2291NL	Pri. Inductance	(1-4)	57.6μH ±12%	FLYBACK TRANSFORMER
	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	1500Vdc	
	KI Factor	26.9		
PA2398NL	Pri. Inductance	(1,2-3,4)	100μH ±12%	FORWARD TRANSFORMER
	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	
	KI Factor	16.1		

High Frequency Wire Wound Transformers

EFD20 Platforms – SMT



Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

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				FORWARD TRANSFORMER
PB2089NL	Pri. Inductance	(5, 4-3, 2)	112.0μH MAX	
	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	1500Vdc	
K1 Factor 24.8				FORWARD TRANSFORMER

High Frequency Wire Wound Transformers

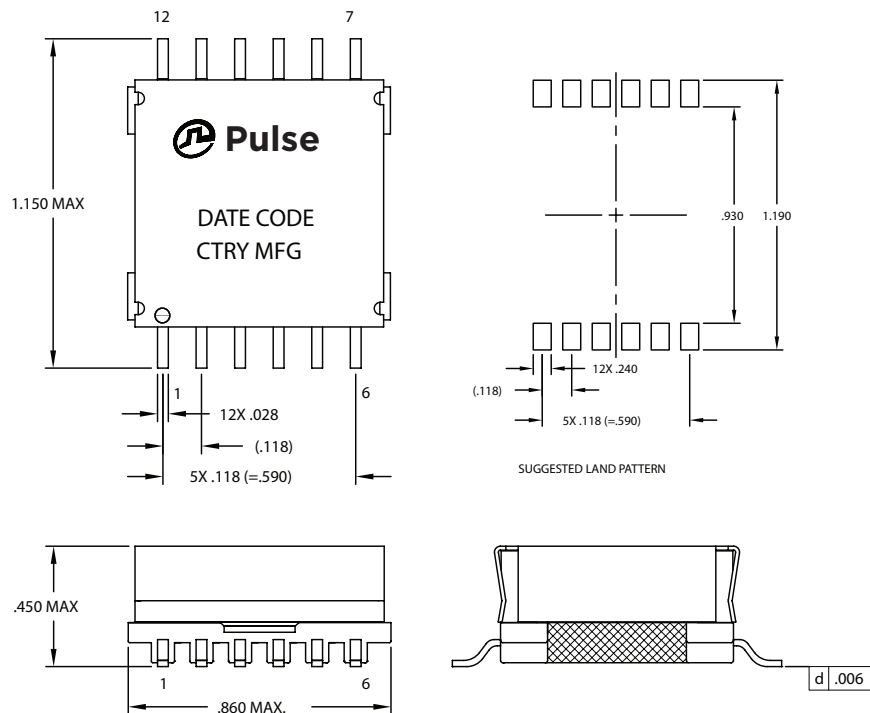
EFD20 Platforms – SMT

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 density, use the following formula:
$$B_{pk} \text{ (Gauss)} = K1_Factor * I_{pk} \text{ (A)}$$
4. In high volt-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: $\Delta B = K1_Factor * (A)$
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. 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) an 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

PAXXXXNL / PBXXXXNL



For More Information:

Americas - prodinfo_power@pulseelectronics.com | Europe - power-apps-europe@pulseelectronics.com | Asia - power-apps-asia@pulseelectronics.com

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