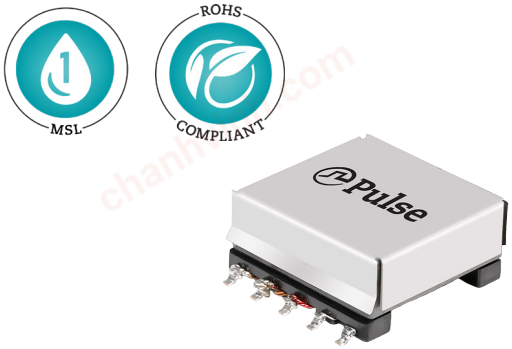
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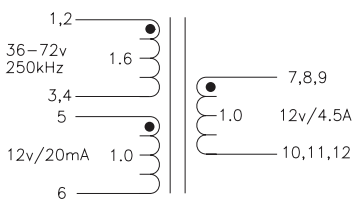
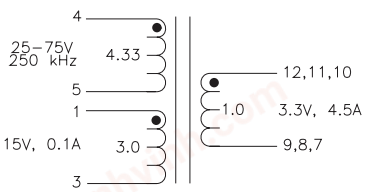
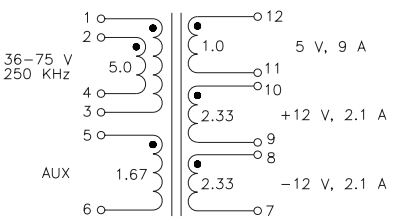
High Frequency Wire Wound Transformers

EFD20 Platforms – SMT

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

Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C				
PA0273NL	Pri. Inductance	(1, 2-3, 4)	307µH ±25%	
	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%	
	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%	
	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		

FORWARD TRANSFORMER

FLYBACK TRANSFORMER

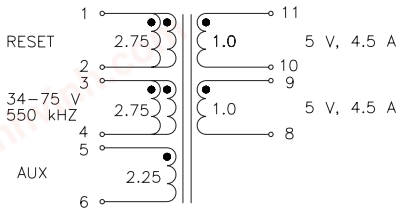
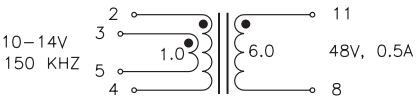
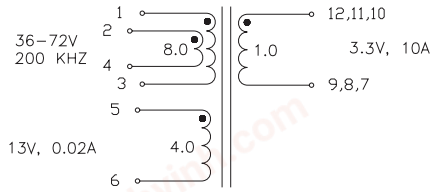
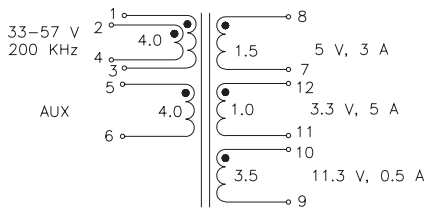
FORWARD TRANSFORMER

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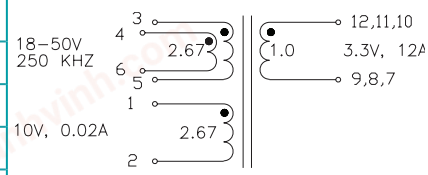
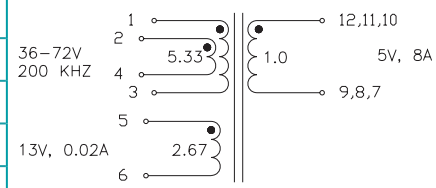
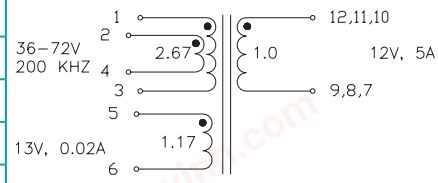
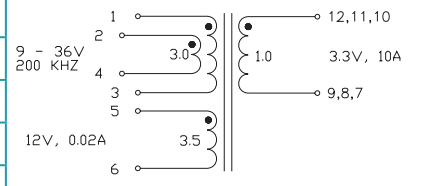
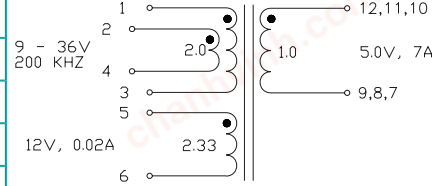
Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C				
PA1066NL	Pri. Inductance	(3-4)	137µH ±32%	 FORWARD TRANSFORMER
	Lk. Inductance	(3-4) with (11, 10, 9, 8) shorted	1.0µH MAX	
	DCR	(3-4)	35mΩ MAX	
		(1-2)	199mΩ MAX	
		(5-6)	100mΩ MAX	
		(11-10)=(9-8)	17mΩ MAX	
	Hi-Pot	Pri-Sec	500Vrms	
	K1 Factor	29.3		
PA1366NL	Pri. Inductance	(2, 3-4, 5)	10µH ±10%	 FLYBACK TRANSFORMER
	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		
PA1477NL	Pri. Inductance	(1, 2-3, 4)	38.3µH ±7%	 FLYBACK TRANSFORMER
	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%	 FLYBACK TRANSFORMER
	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	
		463.7		

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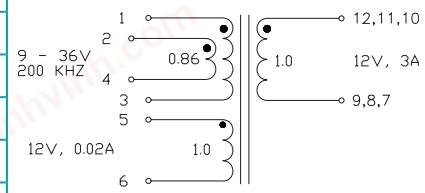
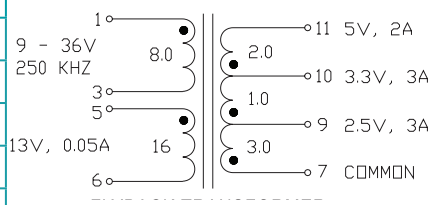
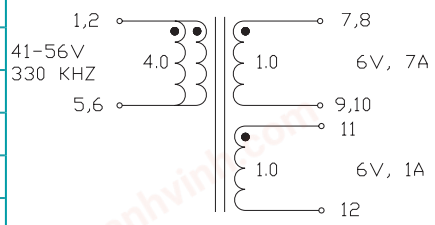
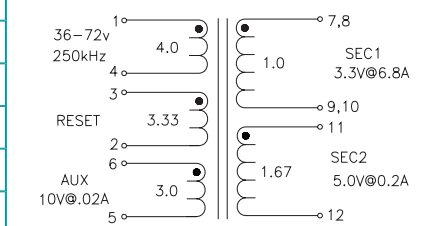
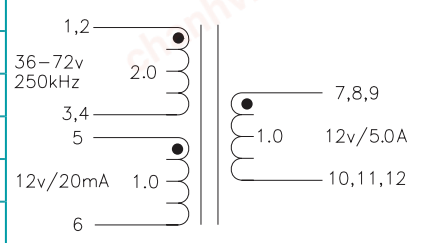
Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C				
PA1692NL	Pri. Inductance	(3, 4-5, 6)	73µH ±30%	 FORWARD TRANSFORMER
	Lk. Inductance	(3, 4-5, 6) with (12, 11, 10, 9, 8, 7) shorted	1.0µH MAX	
	DCR	(3, 4-5, 6)	10.2mΩ MAX	
		(12, 11, 10-9, 8, 7)	5mΩ MAX	
		(1-2)	115mΩ MAX	
	Hi-Pot	Pri-Sec	1500Vdc	
	K1 Factor	40.3		
PA1735NL	Pri. Inductance	(1, 2-3, 4)	28.5µH ±5%	 FLYBACK TRANSFORMER
	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	
	K1 Factor	574.6		
PA1736NL	Pri. Inductance	(1, 2-3, 4)	20.5µH ±5%	 FLYBACK TRANSFORMER
	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	
	K1 Factor	413.3		
PA1835NL	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	0.25µH 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	
	K1 Factor	241.9		
PA1836NL	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)	5mΩ MAX	
		(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vrms	
	K1 Factor	241.9		

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Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C				
PA1837NL	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)	23mΩ MAX	
		(5-6)	130mΩ MAX	
	Hi-Pot	Pri-Sec	1800Vdc	
	K1 Factor	241.9		
PA2047NL	Pri. Inductance	(1-3)	7.2µH ±5%	
	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%	
	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		
PA2291NL	Pri. Inductance	(1-4)	57.6µH ±12%	
	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	
	K1 Factor	26.9		
PA2398NL	Pri. Inductance	(1,2-3.4)	100µH ±12%	
	Lk. Inductance	(1, 2-3, 4) with (5, 6, 9,1 0) 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	
		16.1		

FLYBACK TRANSFORMER

FLYBACK TRANSFORMER

FORWARD TRANSFORMER

FLYBACK TRANSFORMER

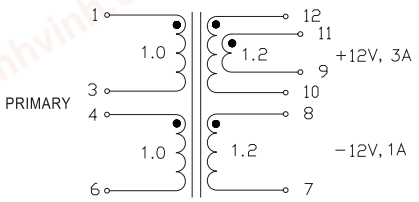
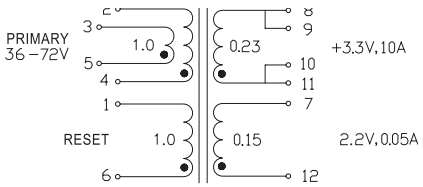
FORWARD TRANSFORMER

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Electrical Specifications @ 25°C – Operating Temperature -40°C to +125°C				
PB2041NL	Pri. Inductance	(1-6) with (3-4) shorted	491µH ±35%	 FORWARD TRANSFORMER
	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 MAX	 FORWARD TRANSFORMER
	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		

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High Frequency Wire Wound Transformers

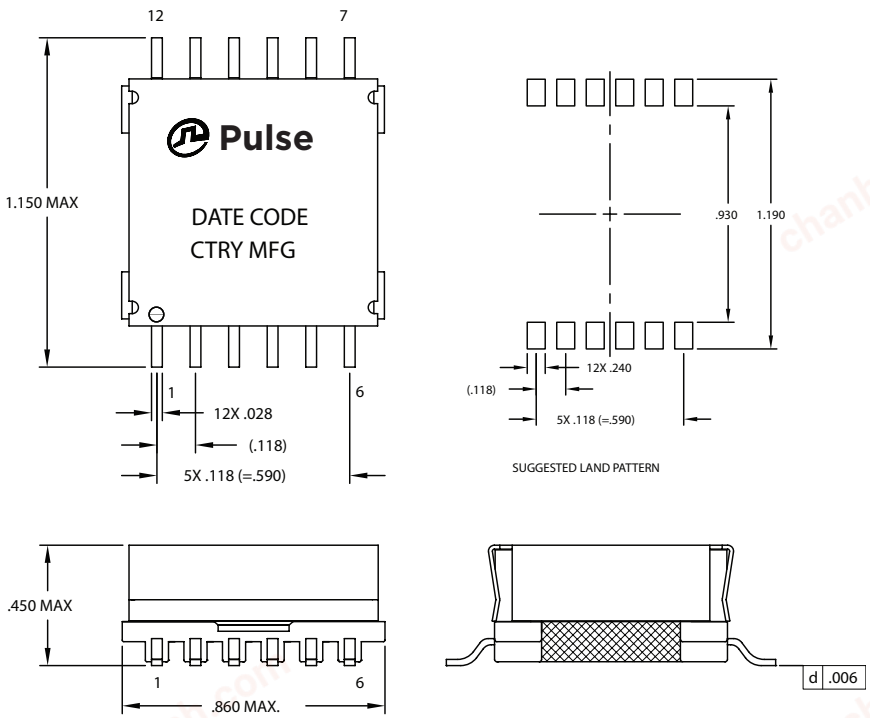
EFD20 Platforms – SMT

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:
   Bpk (Gauss) = K1_Factor * Ipk (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:
   $CoreLoss\ (W) = 1.32E\text{-}13 * (Freq_kHz)^{1.63} * (\Delta B_Gauss)^{2.63}$
   where ΔB can be calculated as:
   For Flyback Topology: ΔB = K1_Factor * (A)
   For Forward Topology: ΔB = K1_Factor * Volt-µsec
5. Optional Tape & Reel packaging can be ordered by adding a "**T**" suffix to the part number (i.e. PA0273NL becomes PA0273NL**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) 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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