

# High Frequency Wire Wound Transformers

EP7+ Platforms - SMT - PA5099.XXXNL AND PA5100.XXXNL



- Ⓢ Industry standard footprint, 2X more power handling
- Ⓢ **Power Range:** PA5099.XXXNL up to 17W;  
PA5100.XXXNL up to 27W
- Ⓢ **Height:** 15.5mm Max
- Ⓢ **Footprint:** 13.6mm x 11.0mm Max
- Ⓢ **Topology:** Forward and Flyback

Pulse PN	Electrical Specifications @25°C – Operating Temperature -40°C to 125°C <sup>1</sup>				Schematic
PA5099.001NL	Pri. Inductance	(1-2)	80	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	1.5	uH Max	
	DCR	(1-2)	180	mΩ Max	
		(3-4)	130		
		(8-5)	12		
		(7-6)	12		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	1563				
PA5099.002NL	Pri. Inductance	(1-2)	80	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	1.5	uH Max	
	DCR	(1-2)	180	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	1563				
PA5099.003NL	Pri. Inductance	(1-2)	80	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	1.5	uH Max	
	DCR	(1-2)	180	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	1563				
PA5099.004NL	Pri. Inductance	(1-2)	15	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	55	mΩ Max	
		(3-4)	1300		
		(8-5)	12		
		(7-6)	12		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	586				

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Pulse PN	Electrical Specifications @25°C – Operating Temperature -40°C to 125°C †				Schematic
PA5099.005NL	Pri. Inductance	(1-2)	15	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	55	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	586				
PA5099.006NL	Pri. Inductance	(1-2)	15	uH ± 10%	<p>Flyback Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	55	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	586				
PA5100.001NL	Pri. Inductance	(1-2)	180	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	60	mΩ Max	
		(3-4)	130		
		(8-5)	12		
		(7-6)	12		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	33				
PA5100.002NL	Pri. Inductance	(1-2)	180	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	60	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	33				
PA5100.003NL	Pri. Inductance	(1-2)	180	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	60	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor	33				

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Pulse PN	Electrical Specifications @25°C – Operating Temperature -40°C to 125°C <sup>1</sup>				Schematic
PA5100.004NL	Pri. Inductance	(1-2)	11	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.15	uH Max	
	DCR	(1-2)	17	mΩ Max	
		(3-4)	130		
		(8-5)	12		
		(7-6)	12		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor		130			
PA5100.005NL	Pri. Inductance	(1-2)	11	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.15	uH Max	
	DCR	(1-2)	17	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor		130			
PA5100.006NL	Pri. Inductance	(1-2)	11	uH Min	<p>Forward Transformer</p>
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.15	uH Max	
	DCR	(1-2)	17	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
K1 Factor		130			

## Notes:

- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- 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:  
 $B_{pk} \text{ (Gauss)} = K1\_Factor * I_{pk} \text{ (A)}$
- In high volt-μsec applications, it is important to calculate the core loss of the transformer. Approximate transformer core loss can be calculated as:

$$\text{CoreLoss (W)} = 5.42E-14 * (\text{Freq\_kHz})^{1.63} * (\Delta B\_Gauss)^{2.65}$$

where ΔB can be calculated as:

For Flyback Topology:  $\Delta B = K1\_Factor * \Delta I \text{ (A)}$

For Forward Topology:  $\Delta B = K1\_Factor * \text{Volt-}\mu\text{sec}$

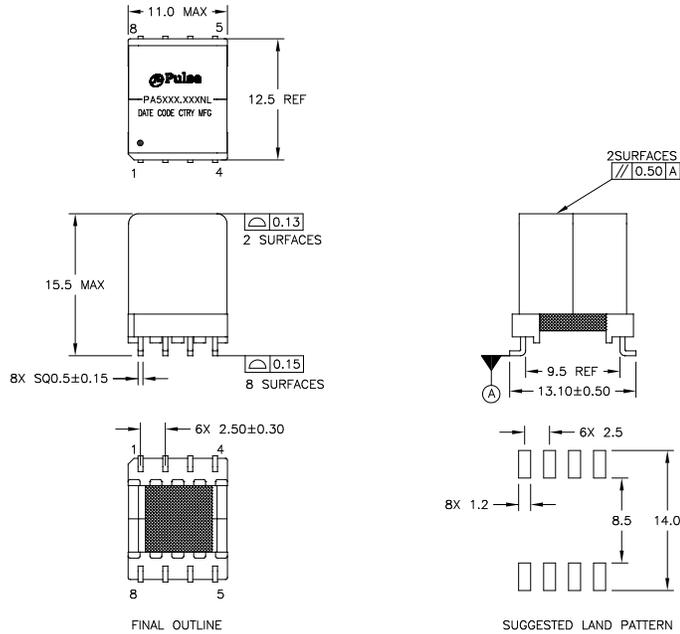
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PA5099.001NL becomes PA5099.001NLT). Pulse complies with industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=32mm), pitch (P<sub>1</sub>=24mm) and depth (K<sub>0</sub>=15.8mm).

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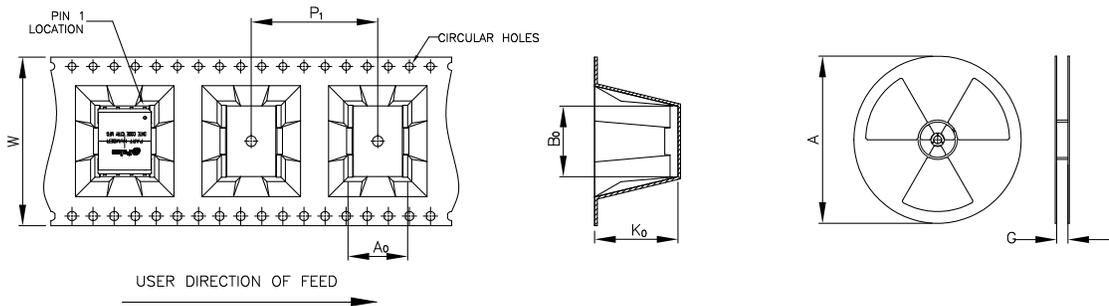
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## Mechanical

### PA5099.XXXNL/ PA5100.XXXNL



### TAPE & REEL INFO



#### SURFACE MOUNTING TYPE, REEL/TAPE LIST

PART NUMBER	REEL SIZE (mm)		TAPE SIZE (mm)					QTY
	A	G	W	P <sub>1</sub>	A <sub>0</sub>	B <sub>0</sub>	K <sub>0</sub>	PCS/REEL
PA5099.XXXNL/ PA5100.XXXNL	Ø330	24.4	32	24	10.6	13.6	15.8	125

### For More Information:

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