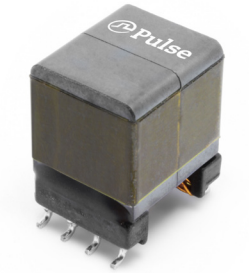
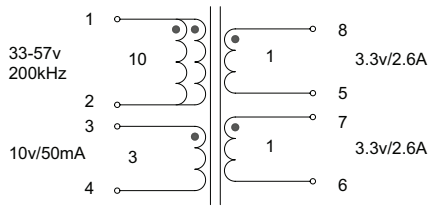
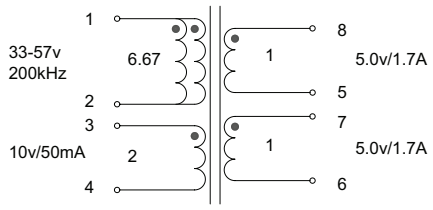
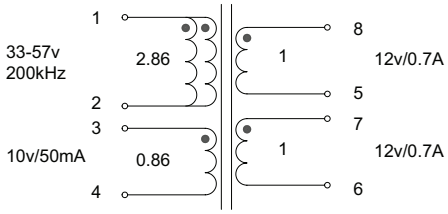
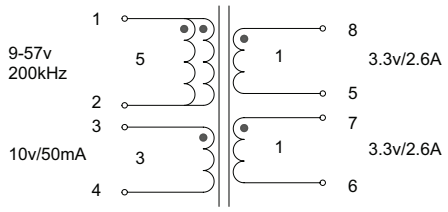
High Frequency Wire Wound Transformers

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

Pulse
a YAGEO company



- *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 [1]				Schematic
PA5099.001NL	Pri. Inductance	(1-2)	80	uH ± 10%	 Flyback Transformer
	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%	 Flyback Transformer
	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%	 Flyback Transformer
	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%	 Flyback Transformer
	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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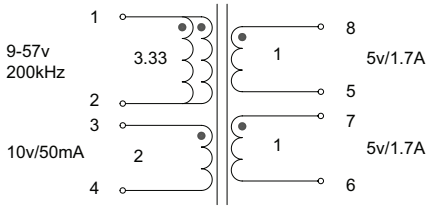
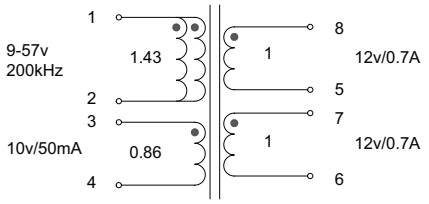
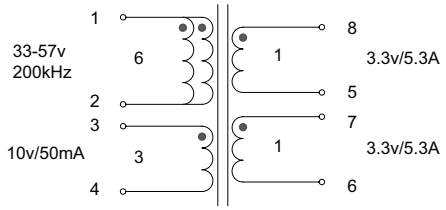
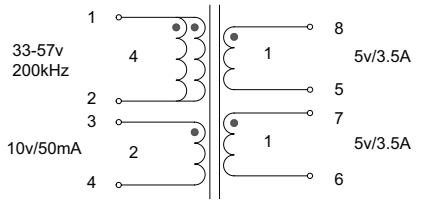
Pulse PN	Electrical Specifications @25°C – Operating Temperature -40°C to 125°C [1]				Schematic
PA5099.005NL	Pri. Inductance	(1-2)	15	uH ± 10%	 Flyback Transformer
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	55	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		586		
PA5099.006NL	Pri. Inductance	(1-2)	15	uH ± 10%	 Flyback Transformer
	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	 Forward Transformer
	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	 Forward Transformer
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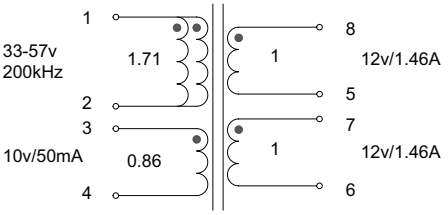
	DCR	(1-2)	60	mΩ Max	
		(3-4)	130		
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		33		
PA5100.003NL	Pri. Inductance	(1-2)	180	uH Min	 Forward Transformer
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.7	uH Max	
	DCR	(1-2)	60	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		33		

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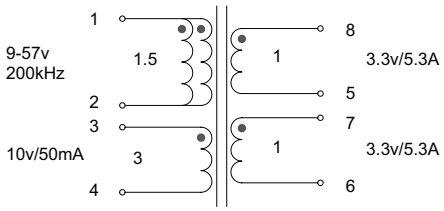
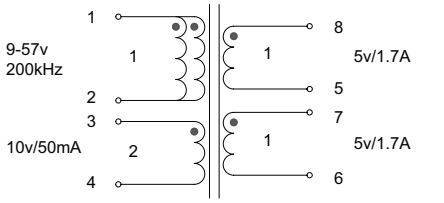
PA5100.004NL	Pri. Inductance	(1-2)	11	uH Min	
	Lk. Inductance	(1-2) w/ (5,6,7,8) shorted	0.15	uH Max	
	DCR	(1-2)	17	mΩ Max	
		(3-4)	130		
		(8-5)	12		
		(7-6)	12		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		130		Forward Transformer
PA5100.005NL	Pri. Inductance	(1-2)	11	uH Min	
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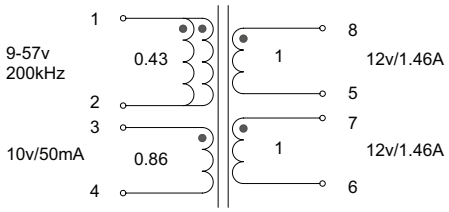
		(8-5)	24		
		(7-6)	24		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		130		Forward Transformer
PA5100.006NL	Pri. Inductance	(1-2)	11	uH Min	
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	DCR	(1-2)	17	mΩ Max	
		(3-4)	130		
		(8-5)	100		
		(7-6)	100		
	Hi-Pot	Pri-Sec	2250	Vdc	
	K1 Factor		130		Forward Transformer

Notes:

1. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
2. 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 (Gauss) = K1_Factor * Ipk(A)
3. 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) = 5.42E-14 * (Freq_kHz)$^{1.63}$ * (ΔB_Gauss)$^{2.63}$
   where ΔB can be calculated as:
   For Flyback Topology: ΔB = K1_Factor * ΔI(A)
   For Forward Topology: ΔB = K1_Factor * Volt-µsec
4. 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_1=24mm) and depth (K_0=15.8mm).

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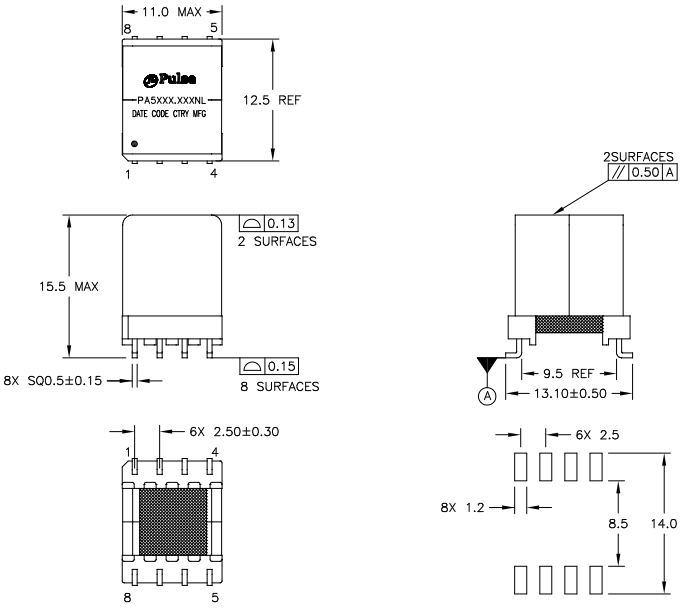
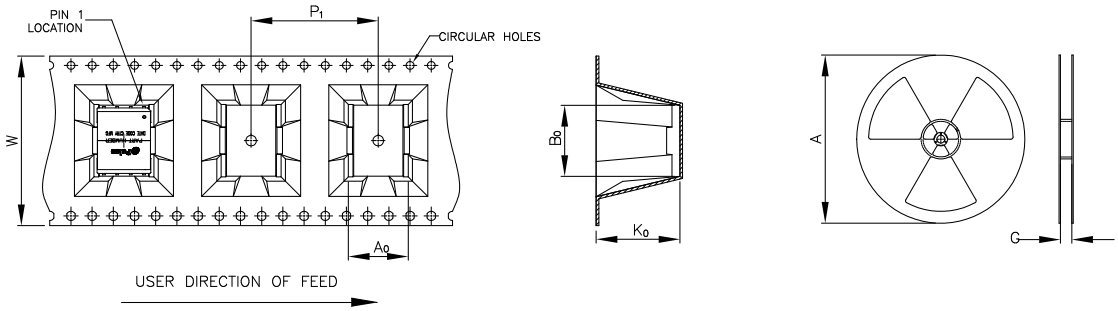
Mechanical

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_1	A_0	B_0	K_0	PCS/REEL
PA5099.XXXNL/ PA5100.XXXNL	Ø330	24.4	32	24	10.6	13.6	15.8	125

For More Information:

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

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