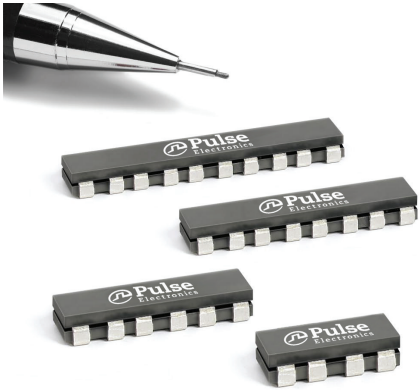


SMT Power Inductors

Power Beads - PA131xNL Series Coupled Inductors



- Ⓢ Gen 1.0 Coupled Inductors (2,3,4, and 5 phases)
- Ⓢ For use only with Volterra chipsets
- Ⓢ Coupled Inductors enabled:
 - Phase ripple current reduction due to AC magnetic field cancellation within the inductor core
 - Improved efficiency due to lower peak currents
 - Reduction in required output capacitance

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

Part Number	Number of Coupled Phases	Equivalent ¹ Transient Inductance per Phase (μH ±20%)	I _{rated} ² per Phase (Adc)	Open Circuit Ind. per Phase ³ μH ±20%, 0Adc					Open Circuit Ind. per Phase ³ μH MIN, 5Adc					DCR/Phase ⁴ (mΩ)	
				L1	L2	L3	L4	L5	L1	L2	L3	L4	L5	TYP	MAX
				(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)		
PA1312NL	2	50	40	310	310	-	-	-	240	-	-	-	-	0.425	0.5
PA1313NL	3	50	40	370	450	370	-	-	285	285	285	-	-		
PA1314NL	4	50	40	370	490	490	370	-	285	385	385	285	-		
PA1315NL	5	50	40	370	470	490	470	390	285	385	385	365	285		

Notes:

1. In a non-coupled multi-phase topology, the power supply sees the same inductance during transient and steady-state conditions. As a result, any attempt to lower the inductance to improve transient response has the negative result of increasing ripple and peak currents throughout the system during steady-state operation. However, in a coupled inductor multi-phase topology, the interaction of magnetic fields from each phase enables an overall reduction in ripple current during steady-state operation and a lower equivalent inductance during transient operation. The equivalent transient inductance per phase, as listed, represents the actual value of inductance that would be required in a non-coupled topology to realize the same transient performance. This value is achieved by core and winding geometry and is not directly measured by Pulse. For more information on the operation of the coupled inductor topology, please contact Volterra.
2. The rate current per phase is based on Volterra's testing of the Pulse coupled inductors.
3. The open-circuit inductance per phase is the measured inductance (at specified current) across each phase when all other phases are open-circuit. The open circuit inductance is equal to the magnetizing inductance per phase (L_m) plus the equivalent transient inductance (L_k).
4. The nominal value of DCR/phase is for reference only. For production testing, the maximum limit is used..

SMT Power Inductors

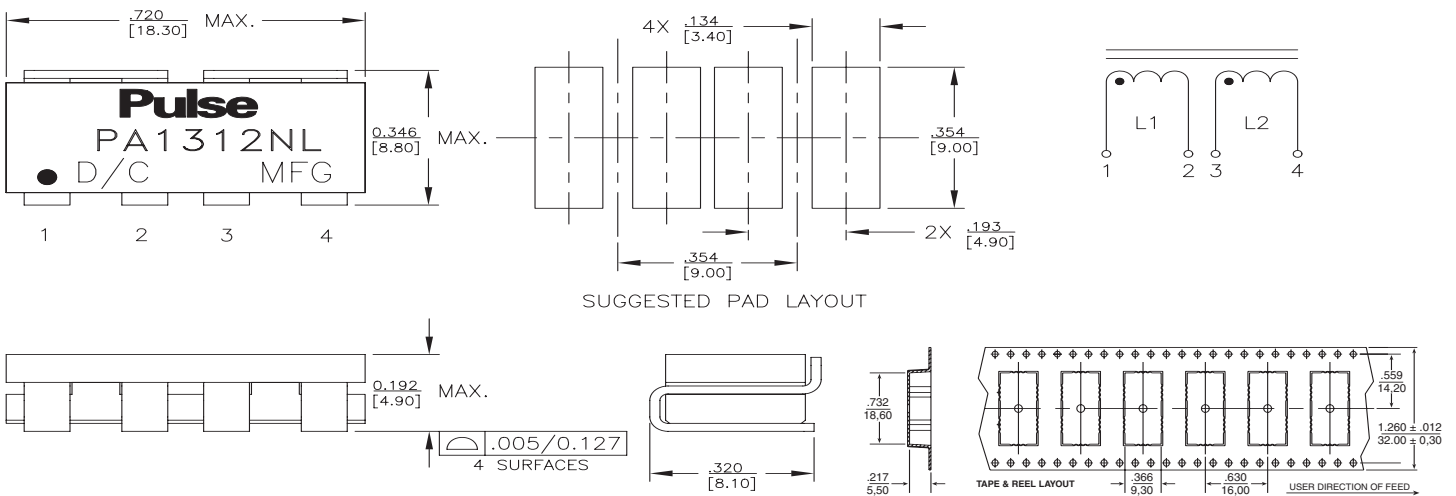
Power Beads - PA131xNL Series Coupled Inductors



Mechanical

Schematic

PA1312NL



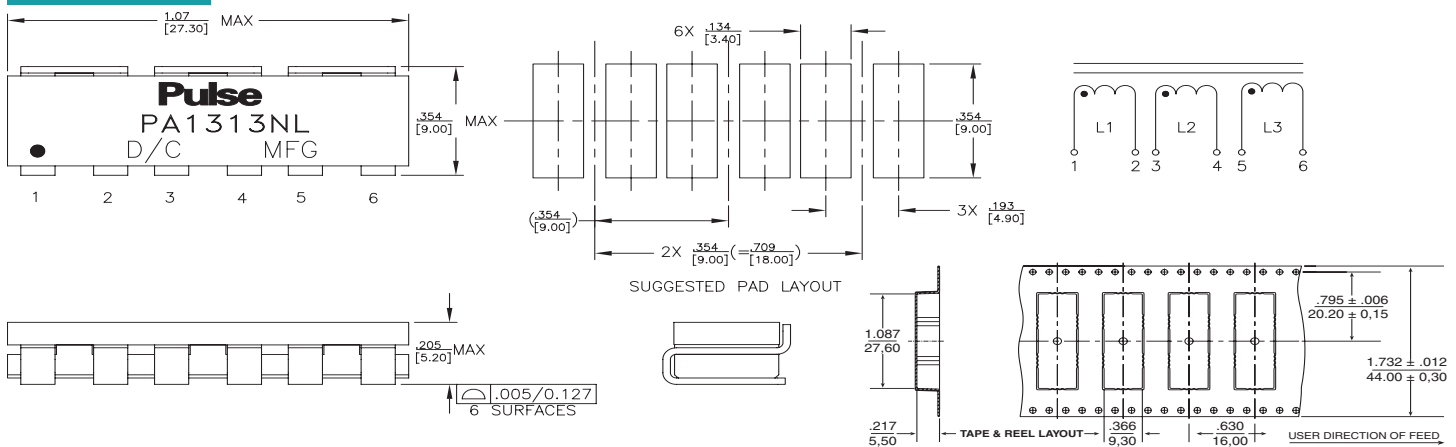
Weight 3.0 grams
Tape & Reel 650/reel
Tray 60/tray

Dimensions: Inches
 mm
 Unless otherwise specified,
 all tolerances are: ± 0.010
 ± 0.25

Mechanicals

Schematics

PA1313NL



Weight 4.5 grams
Tape & Reel 650/reel
Tray 45/tray

Dimensions: Inches
 mm
 Unless otherwise specified,
 all tolerances are: ± 0.010
 ± 0.25

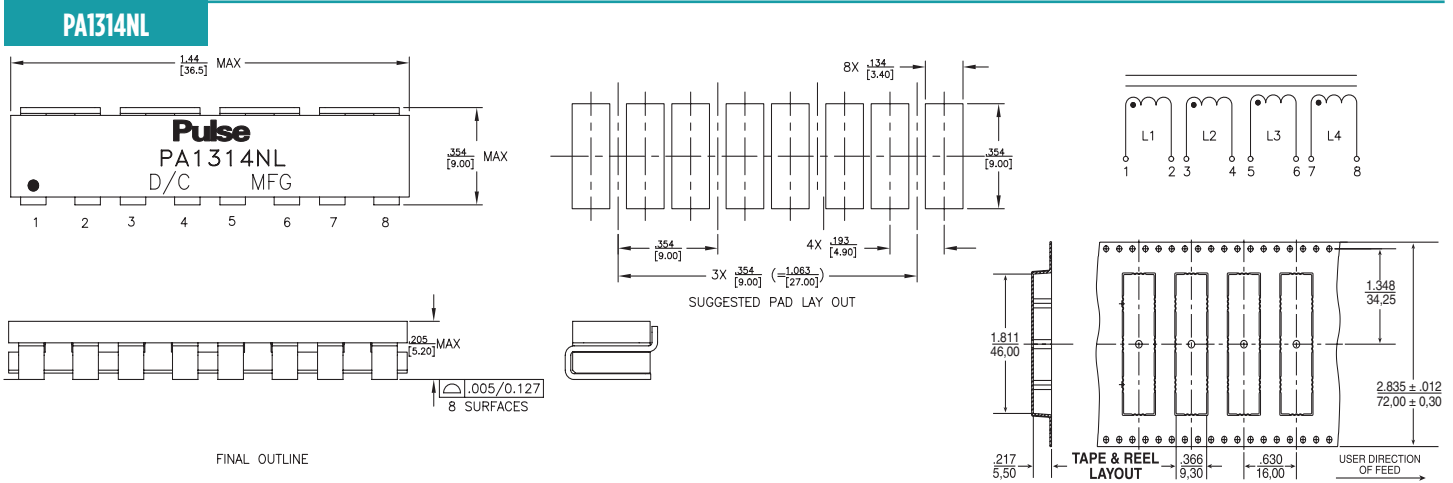
SMT Power Inductors

Power Beads - PA131xNL Series Coupled Inductors



Mechanicals (continued)

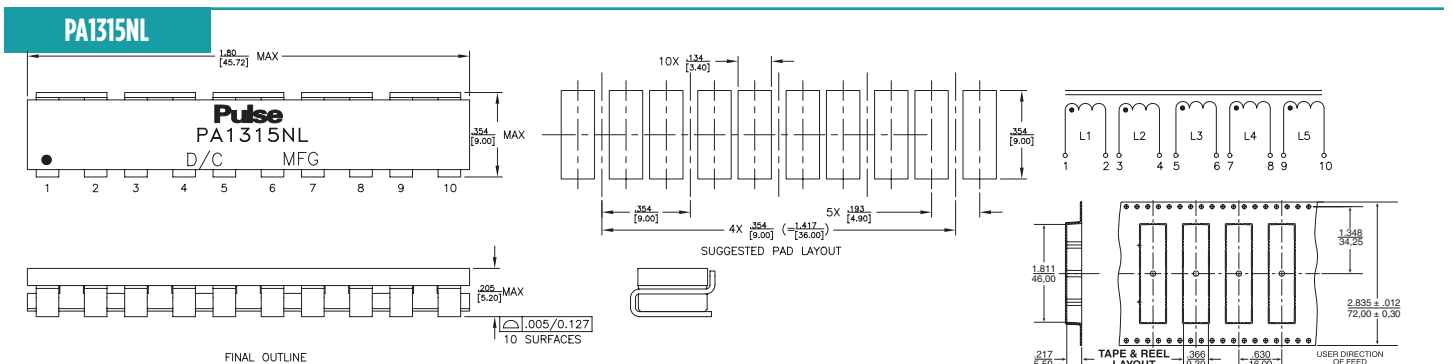
Schematics



Weight 4.5 grams
Tape & Reel550/reel
Tray30/tray
Dimensions: $\frac{\text{Inches}}{\text{mm}}$
 Unless otherwise specified,
 all tolerances are: $\pm \frac{.010}{0,25}$

Mechanicals

Schematics



Weight 7.5 grams
Tape & Reel500/reel
Tray30/tray
Dimensions: $\frac{\text{Inches}}{\text{mm}}$
 Unless otherwise specified,
 all tolerances are: $\pm \frac{.010}{0,25}$

For More Information

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