SMT Power Inductors

Shielded Shaped Core - Spyglass Coupled Inductors

- ***Height:*** *7.4mm Max*
- ***Footprint:*** *23.4mm x 20.1mm Max*
- ***Current Rating:*** *up to 30A*
- ***Inductance Range:*** *2μH to 5.8μH*

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

Part Number	Inductance @ Irated (μH ±12%)	Irated[2] (ADC)	Turns Ratio (Main Winding to Aux.)	DCR (mΩ MAX) Main Winding	DCR (mΩ MAX) Aux. Winding	Inductance @ 0ADC (μH ±12%)	Saturation Current[3] (A) 25°C	Saturation Current[3] (A) 100°C	Heating Current[4] (A)	Isolation (Vdc Basic) (Main Winding to Aux.)
PA0373NL	2.0	30	1:4	2.5	3850	2.1	44	35.2	34	1500
PA0533NL	2.0	21.5	1:3	1.9	2700	2.0	29	25	41	1500
PA0492NL	2.5	15	1:3	1.5	2650	3.0	18	16	41	1500
PA0519NL	3.3	17	1:4	2.5	3750	3.6	20	18	37	1500
PA0465NL	4.2	12.8	4:5	2.5	460	4.4	16	15	37	1500
PA0480NL	5.8	8.5	4:5	2.5	500	6.2	11	10	37	1500

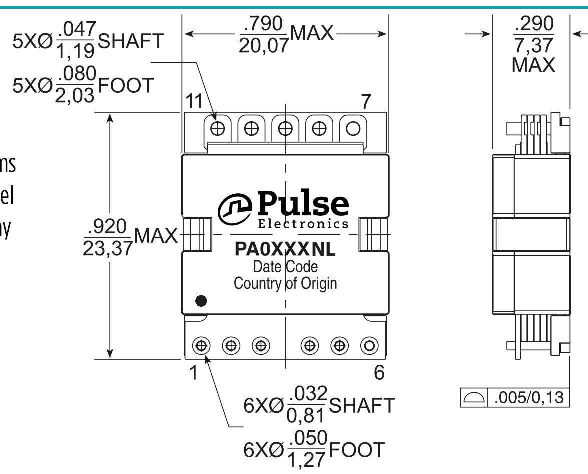
Mechanical

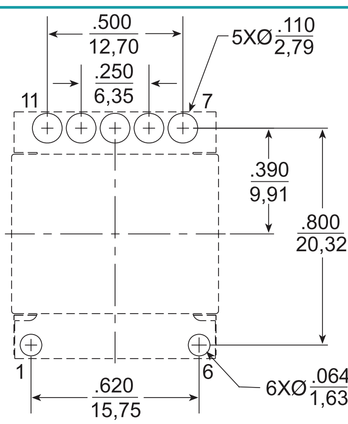
PA0XXXNL

Weight ....11.0 grams
Tape & Reel 180/reel
Tray 40/tray

Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25





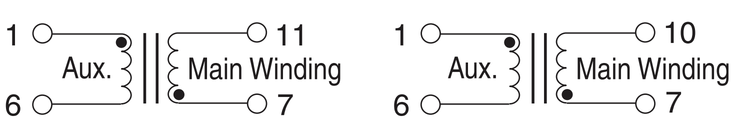
SUGGESTED PAD LAYOUT

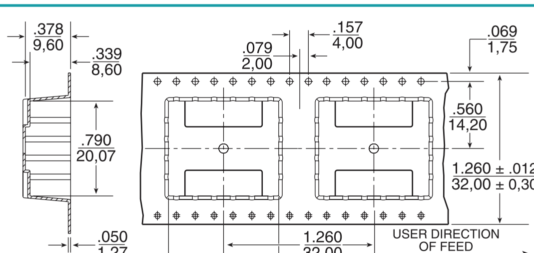
Note: The above suggested pad layout is for a component with all of the pins populated. For a given part number it is only necessary to provide pads for those pins that are populated as shown in the below schematics.

Schematic

PA0373NL / PA0465NL
PA0480NL / PA0519NL

PA0492NL / PA0533NL





TAPE & REEL LAYOUT

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Notes:

1. These high current coupled inductors were designed for (but not limited to) use with the Pulse planar transformer series for use in high density forward converter applications. The inductor provides the output filtering on the main winding, and at the same time provides output filtering on the main winding, and at the same time provides an efficient way to generate an isolated primary side voltage for powering the converter's switching regulator integrated circuit. The above inductors have been tested and approved by Pulse's IC partners and are cited 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 see the IC Cross Reference on the Pulse web page. Other inductance/current ratings and turns ratios may be available. Please contact Pulse Power Applications Engineering for more information.
2. The rated current as listed is either 85% of the saturation current or the heating current depending on which value is lower.
3. The saturation current is the current which causes the inductance to drop by 15% at the stated ambient temperatures (25°C, 100°C).
4. The heating current is the dc current which causes the temperatre of the part to increase by approximately 45C. This current is determined by mounting the component on a PCB with a .25" wide, 2oz. equivalent copper traces, and applying the current to the device for 30 minutes with no force air cooling.
5. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application both copper and core losses should be taken into account.

Total Copper Loss (Pcu_total(W)):

$Pcu(W) = .001*DCR(m\Omega) * (Irms^2)$

where:

$Irms = (Idc^2 + (\Delta I/2)^2)^{.5}$

ΔI = ripple current through inductor

Core Losses (Pcore(W)):

Use the inductor Voltage versus Core Loss table to determine the approximate core losses

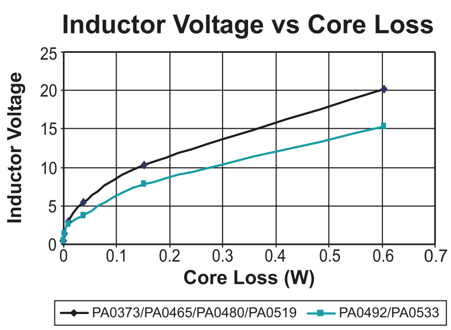
Total Losses:

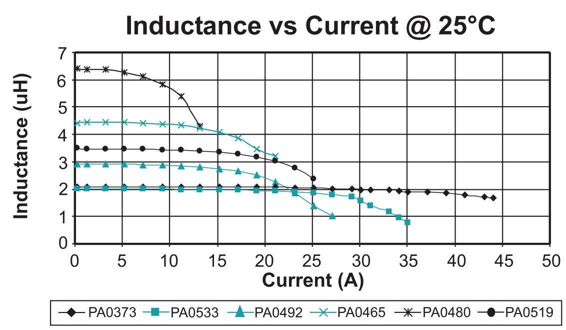
P total = Pcu total + CoreLoss

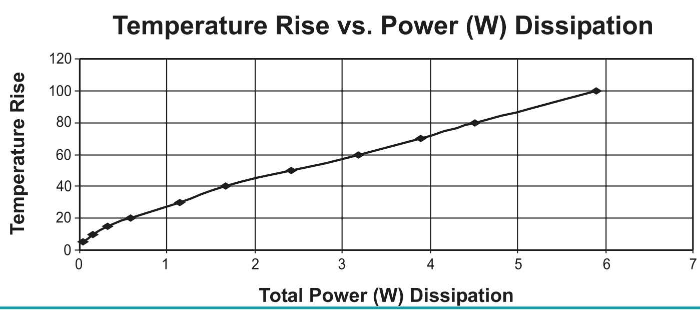
Temperature Rise:

The approximate temperature rise can be found by looking up the calculated total losses in the Temperature Rise vs. Power Dissipation curve.

* Contact Pulse for availability







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