

SMT POWER INDUCTORS

Toroid - Tomcat Series



- Height:** 7.6mm Max
- Footprint:** 18.2mm x 15.0mm Max
- Current Rating:** up to 14.4A
- Inductance Range:** 1.5μH to 139μH

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C¹⁰

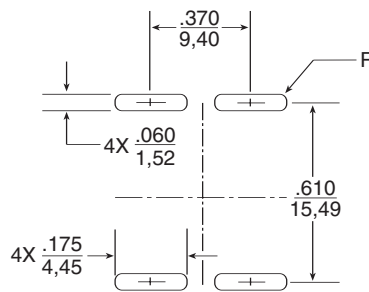
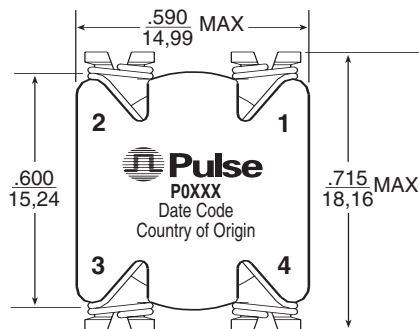
| Part Number ^{8,9} | Inductance @ I _{rated} (μH) | I _{rated} (A) | DCR (TYP) (mΩ) | ET (V-μsec) | Storage Capacity (μJoules) | Inductance @ 0A _{dc} (μH ±20%) | 100 Gauss ET ₁₀₀ (V-μsec) | 1 Amp DC H ₁ (Orsted) | Connection |
|----------------------------|--------------------------------------|------------------------|----------------|-------------|----------------------------|---|--------------------------------------|----------------------------------|------------|
| P0395NL | 1.5 | 14.40 | 4.41 | 4.80 | 159.01 | 2.2 | 1.71 | 3.77 | Parallel |
| P0396NL | 2.4 | 11.20 | 6.54 | 6.00 | 152.83 | 3.5 | 2.14 | 4.71 | Parallel |
| P0397NL | 4.2 | 8.20 | 10.47 | 7.85 | 142.57 | 5.9 | 2.78 | 6.12 | Parallel |
| P0398NL | 5.8 | 6.80 | 14.94 | 9.05 | 133.80 | 7.9 | 3.21 | 7.06 | Parallel |
| P0395NL | 6.1 | 7.20 | 17.60 | 9.60 | 159.01 | 9.0 | 3.42 | 7.53 | Series |
| P0399NL | 7.6 | 5.70 | 20.99 | 10.25 | 124.18 | 10.1 | 3.64 | 8.00 | Parallel |
| P0396NL | 9.7 | 5.60 | 26.20 | 12.00 | 152.83 | 14.0 | 4.28 | 9.42 | Series |
| P0400NL | 12.1 | 5.40 | 23.24 | 13.85 | 176.62 | 18.5 | 4.92 | 10.83 | Parallel |
| P0397NL | 17.0 | 4.10 | 41.90 | 15.70 | 142.57 | 23.7 | 5.56 | 12.24 | Series |
| P0401NL | 18.0 | 4.40 | 38.15 | 16.50 | 174.26 | 27.4 | 5.99 | 13.18 | Parallel |
| P0398NL | 23.1 | 3.40 | 59.70 | 18.10 | 133.80 | 31.5 | 6.42 | 14.12 | Series |
| P0402NL | 27.0 | 3.54 | 53.21 | 20.50 | 169.14 | 40.5 | 7.27 | 16.01 | Parallel |
| P0399NL | 30.6 | 2.85 | 84.00 | 20.50 | 124.18 | 40.5 | 7.27 | 16.01 | Series |
| P0403NL | 34.8 | 3.00 | 73.89 | 22.50 | 156.47 | 50.5 | 8.13 | 17.89 | Parallel |
| P0400NL | 48.5 | 2.70 | 93.00 | 27.70 | 176.62 | 74.1 | 9.84 | 21.66 | Series |
| P0401NL | 72.0 | 2.20 | 152.60 | 33.00 | 174.26 | 109.8 | 11.98 | 26.36 | Series |
| P0403NL | 139.1 | 1.50 | 295.60 | 45.00 | 156.47 | 202.2 | 16.26 | 35.78 | Series |
| P0402NL | 108.0 | 1.77 | 212.80 | 41.00 | 169.14 | 161.8 | 14.55 | 32.01 | Series |

NOTES:

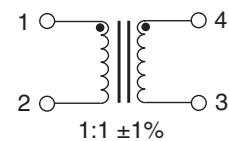
- The reference inductance is a typical value at the AC and DC excitation listed.
- Temperature rise is 55°C in typical buck or boost circuits at 100kHz and with the reference ET applied to the inductor.
- Total loss in the inductor is 634mW for a 55°C temperature rise above ambient.
- To estimate temperature rise in a given application, determine copper and core losses, divide by 634 and multiply by 50.
- For the copper loss (mW), calculate $I_{oc}^2 \times R_N$.
- For core loss (mW), using frequency (f in Hertz) and operating flux density (B in Gauss), calculate $2.24 \times 10^{-10} \times B^{2.11} \times f^{1.26}$.
- For flux density (B in Gauss), calculate ET (V-μsec) for the application, divide by ET₁₀₀ from the table, and multiply by 100.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. P0395NL becomes P0395NLT). Pulse complies to industry standard tape and reel specification EIA481.
- 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.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

Mechanical

Schematic



Suggested Pad Layout



Weight 4.2 grams
Tape & Reel 300/reel
Tube 35/tube

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0.25}$

