SMT Power Inductors

Toroid - Bobcat Series

- ***Height:*** *5.5mm Max*
- ***Footprint:*** *12.7mm x 12.7mm Max*
- ***Current Rating:*** *up to 3.8A*
- ***Inductance Range:*** *9.4µH to 439µH*

Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C[11]								
Part Number	**Inductance @ Irated** (µH)	**Irated** (A)	**DCR (m Ω)**		**ET** (V-µsec)	**Inductance @ 0ADC** (µH ±20%)	**100 Gauss ET_{100}** (V-µsec)	**1 Amp DC H_1** (Orsted)
			TYP	**MAX**				
P0144NL	9.4	3.80	27	31	15.2	10.4	2.65	11.95
P0145NL	13.3	3.13	40	46	18.8	14.6	3.13	14.12
P0146NL	23	2.43	65	75	24.3	25	4.10	18.46
P0147NL	50	1.65	121	139	37.0	56	6.15	27.69
P0148NL	75	1.35	181	208	44.3	83	7.47	33.67
P0149NL	90	1.23	246	283	49.2	100	8.19	36.93
P0150NL	137	0.99	387	445	59.4	152	10.12	45.61
P0151NL	200	0.81	585	673	71.3	220	12.17	54.85
P0152NL	305	0.65	845	972	85.8	331	14.94	67.34
P0153NL	439	0.53	1322	1520	99.6	472	17.83	80.37

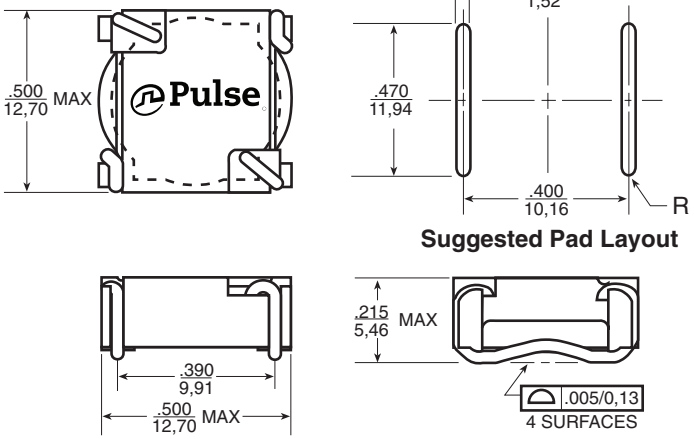
Notes:

1. Temperature rise is 50°C in typical buck or boost circuits at 250kHz and with the reference ET applieed to the inductor.
2. Total loss in the inductor is 380mW for 50°C temperature rise above ambient.
3. To estimate temperature rise in a given applicatoin, determine copper and core losses, divide by 380 and multiply by 50.
4. For the copper loss (mW), calculate $IDC^2 * RN$.
5. For core loss (mW), using frequency (f in Hertz) and operating flux density (B in Gauss), calculate $6.11 * 10^{-18} * B^{2.7} * f^{2.04}$
6. For flux density (B in Gauss), calculate ET (V-sec) for the application, divide by ET_{100} from the table, and multiply by 100.Limit the DC bias (H) to 46 orsteds. Calculate H by multiplying H1 from the table IDC of the application.
7. Limit the DC bias (H) to 46 orsteds. Calculate H by multiplying H_1 from the table by I_{DC} of the application.
8. Optional Tape & Reel application packaging can be ordered by adding a "**T**" suffix to the part number (i.e. P0144NL becomes P0144NL**T**). Pulse complies to industry standard tape and reel specification EIA481.
9. 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.
10. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

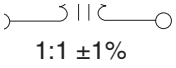
Mechanical

Schematic

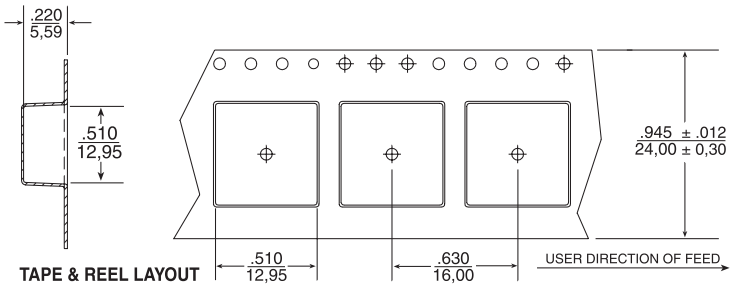
PXXXXXNL



Suggested Pad Layout



Weight 1.5grams
Tape & Reel 500/reel
Tube 40/tube
Dimensions: Inches / mm
Unless otherwise specified, all tolerances are: ±.010 / 0,25



TAPE & REEL LAYOUT

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Pulse:

P0144T P0146T P0147T P0151T P0145NL P0146NLT P0149NLT P0150NL P0153NL P0151NL P0144NLT P0145NLT P0151NLT P0148NLT P0148NL P0144NL P0146NL P0149NL P0147NL P0147NLT P0153NLT