




LOW PROFILE SELF-LEADED SMT DUAL INDUCTORS



-  Materials meet UL 94V-0 rating
-  Frequency range of up to 1 MHz
-  Can be used as a simple inductor, 1:1 coupled inductor, or 1:1 transformer

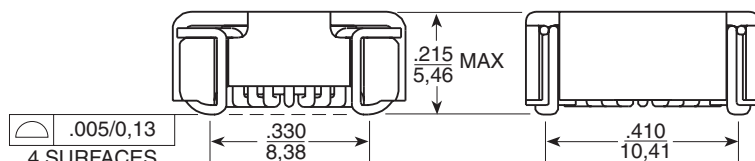
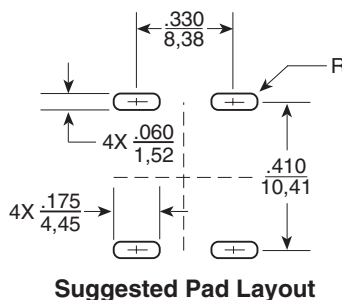
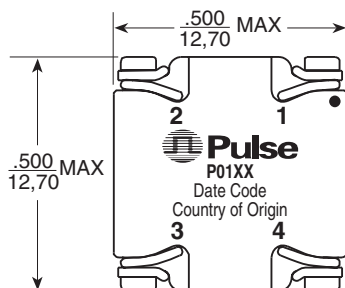
Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

| ID | | Reference Values | | | Control Values | | Calculation Data | |
|-------------|----------|---------------------|-----------------------------|-------------|-----------------------------------|----------------|--------------------------------------|----------------------------------|
| Part Number | Hookup | I _{DC} (A) | L @ DC L _{DC} (μH) | ET (V-μsec) | L w/o DC L ₀ ±20% (μH) | DCR (MAX) (mΩ) | 100 Gauss ET ₁₀₀ (V-μsec) | 1 Amp DC H ₁ (Orsted) |
| P0183 | Series | 0.61 | 336.7 | 92.43 | 364.0 | 1295 | 15.66 | 70.59 |
| P0182 | Series | 0.74 | 245.3 | 81.70 | 270.2 | 897 | 13.50 | 60.82 |
| P0181 | Series | 0.90 | 170.3 | 68.99 | 190.3 | 603 | 11.33 | 51.05 |
| P0180 | Series | 1.08 | 117.3 | 57.00 | 131.0 | 424 | 9.40 | 42.36 |
| P0183 | Parallel | 1.22 | 84.2 | 46.22 | 91.0 | 324 | 7.83 | 35.30 |
| P0179 | Series | 1.32 | 79.0 | 46.90 | 88.2 | 265 | 7.71 | 34.75 |
| P0182 | Parallel | 1.48 | 61.3 | 40.85 | 67.5 | 224 | 6.75 | 30.41 |
| P0178 | Series | 1.56 | 56.2 | 39.46 | 62.8 | 181 | 6.51 | 29.32 |
| P0181 | Parallel | 1.80 | 42.6 | 34.49 | 47.6 | 151 | 5.66 | 25.52 |
| P0177 | Series | 1.92 | 37.3 | 32.25 | 41.7 | 119 | 5.30 | 23.89 |
| P0180 | Parallel | 2.16 | 29.3 | 28.50 | 32.8 | 106 | 4.70 | 21.18 |
| P0176 | Series | 2.60 | 20.0 | 23.43 | 22.1 | 76.0 | 3.86 | 17.38 |
| P0179 | Parallel | 2.64 | 19.7 | 23.45 | 22.1 | 66.3 | 3.86 | 17.38 |
| P0178 | Parallel | 3.12 | 14.1 | 19.73 | 15.7 | 45.3 | 3.25 | 14.66 |
| P0175 | Series | 3.60 | 9.6 | 15.62 | 10.4 | 43.6 | 2.65 | 11.95 |
| P0177 | Parallel | 3.84 | 9.3 | 16.12 | 10.4 | 29.8 | 2.65 | 11.95 |
| P0174 | Series | 4.15 | 7.8 | 14.61 | 8.6 | 30.3 | 2.41 | 10.86 |
| P0176 | Parallel | 5.20 | 5.0 | 11.72 | 5.5 | 19.0 | 1.93 | 8.69 |
| P0175 | Parallel | 7.20 | 2.4 | 7.81 | 2.6 | 10.9 | 1.33 | 5.97 |
| P0174 | Parallel | 8.30 | 2.0 | 7.31 | 2.2 | 7.6 | 1.20 | 5.43 |

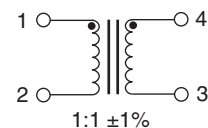
NOTES:

- The reference inductance at rated DC current is a typical value.
- Temperature rise is 50°C in typical buck or boost circuits at 250 KHz and with the reference ET applied to the inductor.
- Total loss in the inductor is 380 mWatts for a 50°C temperature rise above ambient.
- To estimate temperature rise in a given application, determine copper and core losses, divide by 380 and multiply by 50.
- For the copper loss, calculate I_{DC}² X R_N.
- For core loss, using frequency (f) and operating flux density (B), calculate $6.11 \times 10^{-19} \times B^{2.7} \times f^{2.04}$.
- For flux density (B), calculate ET (V-μsec) for the application, divide by ET₁₀₀ from the table, and multiply by 100.
- Limit the DC bias (H) to 46 orstedts. Calculate H by multiplying H₁ from the table by I_{DC} of the application.
- The maximum DCR listed is approximately 17% over the nominal DCR.
- Add suffix "T" to part number for tape and reel package (i.e. P0183T).

Mechanical



Schematic



Weight 1.5 grams
Tape & Reel 500/reel
Tube 40/tube

Dimensions: Inches
mm
Unless otherwise specified,
all tolerances are ± .010
0,25