




# LOW PROFILE SELF-LEADED SMD 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

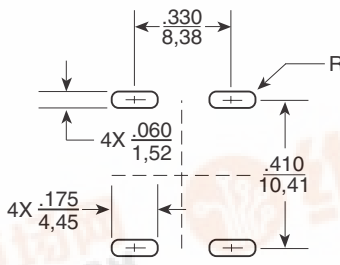
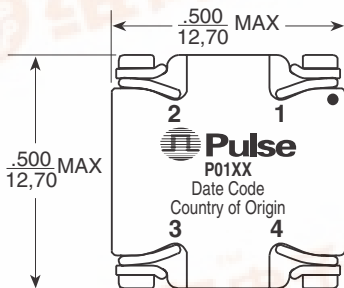
ID		Reference Values			Control Values		Calculation Data	
Part Number	Hookup	I <sub>DC</sub> (A)	L @ DC L <sub>DC</sub> (μH)	ET (V-μsec)	L w/o DC L <sub>0</sub> ±20% (μH)	DCR (MAX) (mΩ)	100 Gauss ET <sub>100</sub> (V-μsec)	1 Amp DC H <sub>1</sub> (Orsted)
P0183	Series	0.61	336.7	92.43	364.0	1295	15.66	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:

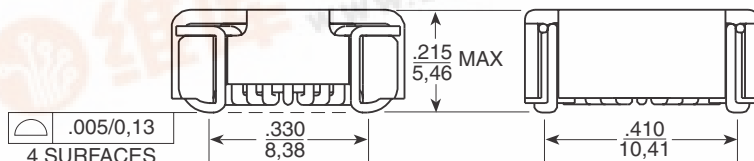
- The reference inductance at rated DC current is a typical value.
- Temperature rise is 50°C in typical buck or boost circuits at 250 KHz and with the reference ET applied to the inductor.
- Total loss in the inductor is 380 mWatts for a 50°C temperature rise above ambient.
- To estimate temperature rise in a given application, determine copper and core losses, divide by 380 and multiply by 50.
- For the copper loss, calculate I<sub>DC</sub><sup>2</sup> X R<sub>N</sub>.

- 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 ET<sub>100</sub> from the table, and multiply by 100.
- Limit the DC bias (H) to 46 orstedts. Calculate H by multiplying H<sub>1</sub> from the table by I<sub>DC</sub> 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).

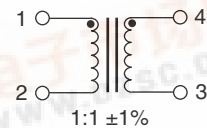
### Mechanical



Suggested Pad Layout



### Schematic



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

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