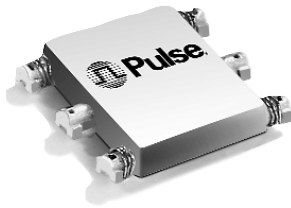






# LOW PROFILE SELF-LEADED POWER INDUCTORS

## Designed for PCMCIA Applications



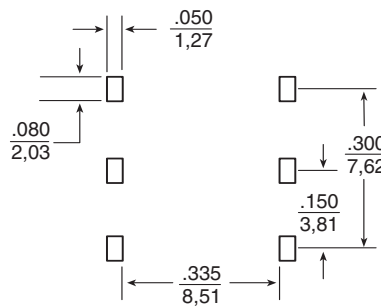
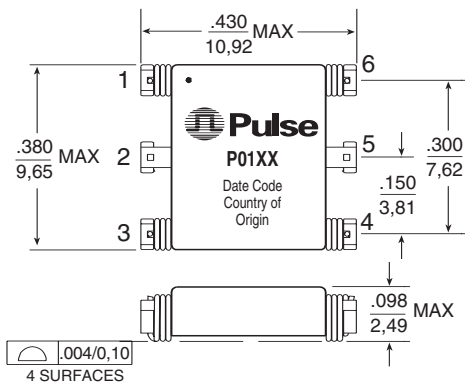
-  Small PCMCIA size (.38" X .43" X .098")
-  Frequency range: 100 kHz to 1 MHz
-  Up to 3 amps rated DC current
-  Surface mount, pick and placeable

### 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> (amp)	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)
P0108	Series	0.27	122.6	16.55	137.8	1545	2.77	102.50
P0107	Series	0.33	88.5	14.60	100.5	1068	2.37	87.55
P0106	Series	0.40	60.1	12.03	69.1	720	1.96	72.60
P0116	Series	0.44	43.6	9.59	46.9	692	1.62	59.79
P0108	Parallel	0.54	30.7	8.28	34.4	382	1.38	51.25
P0105	Series	0.62	20.1	6.22	21.6	325	1.10	40.57
P0107	Parallel	0.66	22.1	7.30	25.1	267	1.18	43.77
P0104	Series	0.73	15.7	5.74	17.3	236	0.98	36.30
P0106	Parallel	0.80	15.0	6.01	17.3	180	0.98	36.30
P0103	Series	0.86	12.1	5.21	13.5	170	0.87	32.03
P0116	Parallel	0.88	10.9	4.80	11.7	173	0.81	29.89
P0102	Series	1.03	9.0	4.63	10.1	121	0.75	27.76
P0101	Series	1.23	6.4	3.92	7.2	86	0.63	23.49
P0105	Parallel	1.24	5.0	3.11	5.4	81	0.55	20.29
P0100	Series	1.41	5.2	3.67	6.0	66	0.58	21.35
P0104	Parallel	1.46	3.9	2.87	4.3	59	0.49	18.15
P0103	Parallel	1.72	3.0	2.60	3.4	42	0.43	16.01
P0102	Parallel	2.06	2.2	2.32	2.5	30	0.38	13.88
P0101	Parallel	2.46	1.6	1.96	1.8	22	0.32	11.74
P0100	Parallel	2.82	1.3	1.83	1.5	16	0.29	10.68

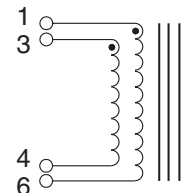
- NOTES:**
- The reference inductance at rated DC current is a typical value.
  - Temperature rise is 50°C in typical buck or boost circuits at 500 kHz and with the reference ET applied to the inductor.
  - Total loss in the inductor is 95 mWatts for 50°C temperature rise above ambient.
  - To estimate temperature rise in a given application, determine copper and core losses, divide by 95 and multiply by 50.
  - For the copper loss, calculate  $I_{DC}^2 \times R_N$ .
  - For  $R_N$ , multiply  $DCR_{MAX}$  by 0.85.
  - For core loss, using frequency (f) and operating flux density (B), calculate  $747 \times 10^{-31} \times B^{2.7} \times f^{2.04}$ .
  - For flux density (B), calculate ET (V-μsec) for the application, divide by  $ET_{100}$  from the table, and multiply by 100.
  - Limit the DC bias (H) to 31 orstedts. Calculate H by multiplying  $H_1$  from the table by  $I_{DC}$  of the application.
  - Add suffix "T" to part number for tape and reel package (i.e. P0100T).

### Mechanical



SUGGESTED PAD LAYOUT

### Schematic



Weight .....0.25 grams  
Tape & Reel .....1250/reel  
Tube .....55/tube


Dimensions: Inches  
mm

Unless otherwise specified,  
all tolerances are ± .010  
0.25

### For More Information :

UNITED STATES (Worldwide)	UNITED KINGDOM (Northern Europe)	FRANCE (Southern Europe)	SINGAPORE (Southern Asia)	TAIWAN, R.O.C. (Northern Asia)	HONG KONG (China/Hong Kong)	DISTRIBUTOR
12220 World Trade Drive San Diego, CA 92128 U.S.A. http://www.pulseeng.com TEL: 858 674 8100 FAX: 858 674 8262	1 & 2 Huxley Road The Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	3F-4, No. 81, Sec. 1 HsinTai Wu Road Hsi-Chih, Taipei Hsien Taiwan, R.O.C. Tel: 886 2 2698 0228 FAX: 886 2 2698 0948	9/F, Phase 2, Tai Sang Shatin Warehouse Centre 6 Wong Chuk Young Street Fotan, Shatin, Hong Kong TEL: 852 2788 6588 FAX: 852 2776 1055	

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners.

 Printed on recycled paper. ©2003, Pulse Engineering, Inc.

**P597.A (5/03)**