

# SMT POWER INDUCTORS

## Toroid - Military/Aerospace POGO Series



- Ruggedized header with POGO pins for secure board mounting
- Current Rating:** up to 14.4ADC
- Inductance Range:** 1.5 $\mu$ H to 139 $\mu$ H

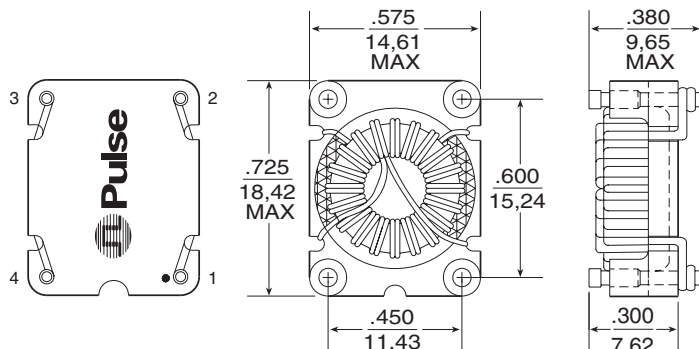
### Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Part Number <sup>8,9</sup>	Inductance @ I <sub>rated</sub> ( $\mu$ H)	I <sub>rated</sub> (A)	DCR (TYP) (m $\Omega$ )	ET (V- $\mu$ sec)	Storage Capacity ( $\mu$ Joules)	Inductance @ 0ADC ( $\mu$ H $\pm$ 20%)	100 Gauss ET <sub>100</sub> (V- $\mu$ sec)	1 Amp DC H <sub>1</sub> (Orsted)	Connection
<b>POGO 40</b>									
PL8700	1.5	14.40	4.41	4.80	159.01	2.2	1.71	3.77	Parallel
PL8701	2.4	9.40	6.54	6.00	152.83	3.5	2.14	4.71	Parallel
PL8702	4.2	8.10	10.47	7.85	142.57	5.9	2.78	6.12	Parallel
PL8703	5.8	6.80	14.94	9.05	133.80	7.9	3.21	7.06	Parallel
PL8700	6.1	7.20	17.60	9.60	159.01	9.0	3.42	7.53	Series
PL8704	7.6	5.70	20.99	10.25	124.18	10.1	3.64	8.00	Parallel
PL8701	9.7	5.60	26.20	12.00	152.83	14.0	4.28	9.42	Series
PL8705	12.1	5.20	23.24	13.85	176.62	18.5	4.92	10.83	Parallel
PL8702	17.0	4.10	41.90	15.70	142.57	23.7	5.56	12.24	Series
PL8706	18.0	4.20	38.15	16.50	174.26	27.4	5.99	13.18	Parallel
PL8703	23.1	3.40	59.70	18.10	133.80	31.5	6.42	14.12	Series
PL8707	27.0	3.30	53.21	20.50	169.14	40.5	7.27	16.01	Parallel
PL8704	30.6	2.85	84.00	20.50	124.18	40.5	7.27	16.01	Series
PL8708	34.8	2.30	73.89	22.50	156.47	50.5	8.13	17.89	Parallel
PL8705	48.5	2.70	93.00	27.70	176.62	74.1	9.84	21.66	Series
PL8706	72.0	2.20	152.60	33.00	174.26	109.8	11.98	26.36	Series
PL8708	139.1	1.50	295.60	45.00	156.47	202.2	16.26	35.78	Series
PL8707	108.0	1.77	212.80	41.00	169.14	161.8	14.55	32.01	Series

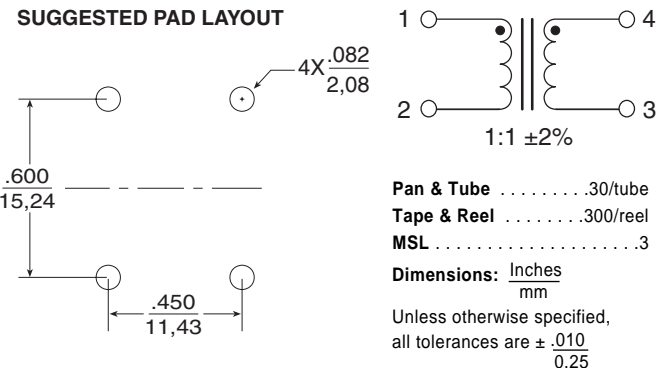
#### NOTES:

- 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 634mWatts 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, calculate  $I_{bc}^2 X R_n$ .
- 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), calculate ET (V- $\mu$ sec) for the application, divide by ET<sub>100</sub> 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. PL8700 becomes PL8700T). Pulse complies to industry standard tape and reel specification EIA481.

### Mechanical



### Schematic



### For More Information:

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