

SMT POWER INDUCTORS

Toroid - Military/Aerospace POGO Series



- Ruggedized header with POGO pins for secure board mounting
- Current Rating:** up to 23.8Adc
- Frequency Range:** up to 1MHz

Electrical Specifications @ 25°C — Operating Temperature -55°C to +130°C

Pulse 4,5 Part Number	Inductance @ Irated (μH)	Irated (A)	DCR (mΩ)		Inductance @ 0Adc (μH)	Reference ET (Volt-μsec)	Flux Density Factor (K1)	Core Loss Factor (K2)	Temp. Rise Factor (K3)	Connection
			TYP	MAX						
POGO 40										
PL8400	43.6	1.1	247.2	309	77	7.83	0.295	1.87E-10	114.23	Single
POGO 50										
PL8401	21.9	2.7	72.4	90.5	39.5	6.9	0.297	3.35E-10	85.71	Single
PL8402	4.025	6.4	18.4	23	6.575	3.135	0.638	4.52E-10	67.89	Single
PL8403	0.53	23.8	1.0	3	0.88	1	2.020	3.35E-10	85.71	Parallel
PL8404	1.1	21	1.7	2.5	2.1	1.75	1.116	4.52E-10	67.89	Parallel
POGO 60										
PL8405	2.1	22.4	2.5	3.4	4	3.25	0.559	9.58E-10	44.56	Parallel

NOTES:

- Reference values are for an inductor with a 55°C temperature rise. The core loss is 10% of the copper loss at the ET listed and 500kHz.
- Core does not saturate abruptly. The ET and DC current are limited by the desired inductance and temperature rise.
- In high volt-time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application, both copper and core losses should be taken into account.

Estimated Temperature Rise:

$$\text{Trise} = K3 * (\text{Coreloss}(W) + \text{Copperloss}(W))^{.833} (C)$$

$$\text{CopperLoss} = \text{Irms}^2 * \text{DCR_Typical} (m\Omega) / 1000$$

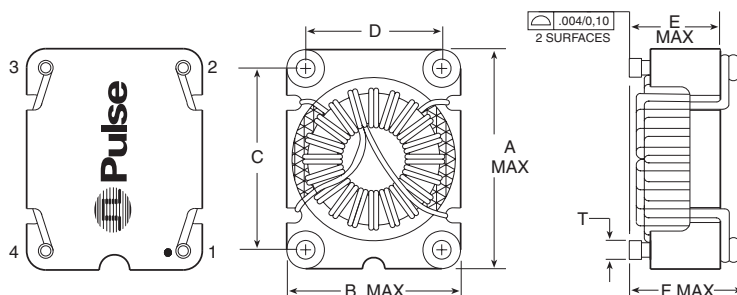
$$\text{CoreLoss} = K2 * (\text{Freq_kHz})^{1.26} * (\Delta B)^{2.11}$$

$$\Delta B = K1 * \text{Volt-}\mu\text{sec} * 100$$

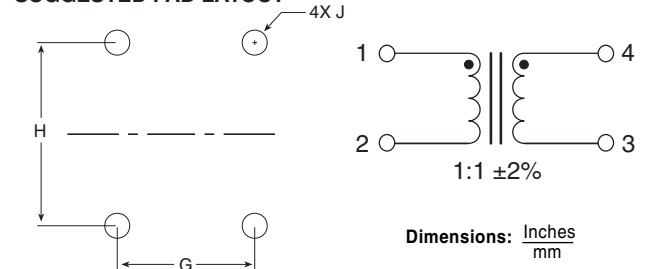
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL8400 becomes PL8400T). Pulse complies to industry standard tape and reel specification EIA481.

Mechanical

Schematic



SUGGESTED PAD LAYOUT



PKG	A	B	C	D	E	F	G	H	J	T	Weight (MAX)	Tube	Reel
POGO 40	.725	.575	.600	.450	.310	.380	.450	.600	.082	.062	3.5 grams	30	300
	18,42	14,61	15,24	11,43	7,87	9,65	11,43	15,24	2,08	1,57			
POGO 50	.910	.700	.730	.520	.400	.510	.520	.730	.145	.125	8.2 grams	35	200
	23,11	17,78	18,54	13,21	10,16	12,95	13,21	18,54	3,68	3,18			
POGO 60	1.280	1.070	1.100	.890	.400	.510	.890	1.100	.145	.125	14.2 grams	15	100
	32,51	27,18	27,94	22,61	10,16	12,95	22,61	27,94	3,68	3,18			

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