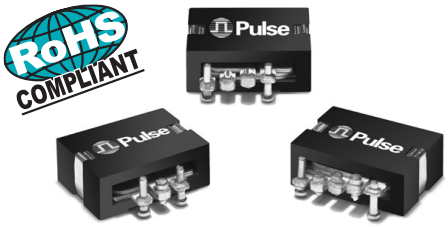
SMT POWER INDUCTORS

Military/Aerospace Grade

Pulse Electronics



- ***Height:*** *7.4mm Max*
- ***Footprint:*** *19.8mm x 19.6mm Max*
- ***Current Rating:*** *up to 73A*
- ***Inductance Range:*** *.405µH to 6.2µH*

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [8]

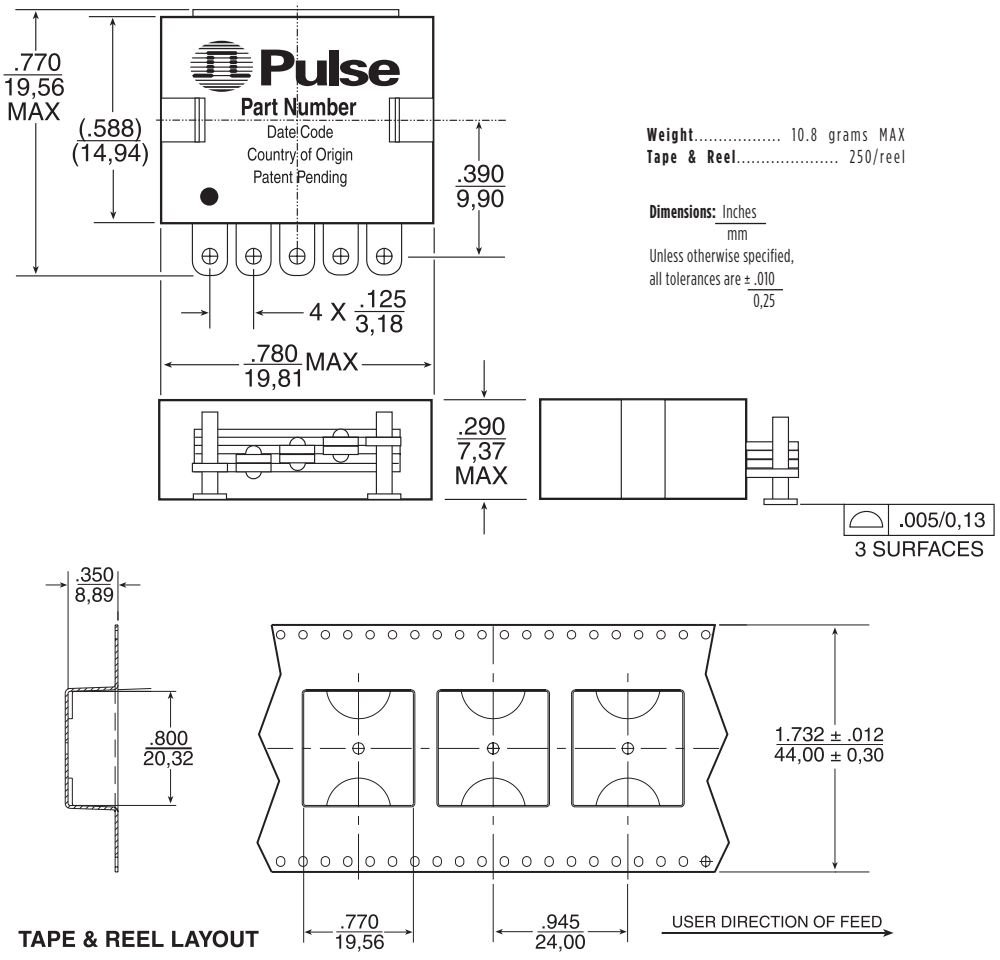
Part Number [5,7]	Inductance @ Irated (µH ±15%)	Irated [1] (ADC)	DCR (mΩ)		Inductance @ 0 ADC (µH ±15%)	Saturation Current [2]		Heating [3] Current (A)
			TYP	MAX		25°C	100°C	
2-Turn (Low - Loss) Series								
PL10100	0.45	73	.38	.48	0.45	95	80	73
PL10101	0.63	54	.38	.48	0.65	63	53	73
PL10102	0.85	39	.38	.48	0.91	46	37	73
PL10103	1.05	30	.38	.48	1.10	35	30	73
PL10104	1.25	25	.38	.48	1.30	29	26	73
PL10105	1.45	21	.38	.48	1.50	24	22	73
2-Turn Series								
PL10106	0.45	52	.78	.98	0.45	95	80	52
PL10107	0.63	52	.78	.98	0.65	63	53	52
PL10108	0.85	39	.78	.98	0.91	46	37	52
PL10109	1.05	30	.78	.98	1.10	35	30	52
PL10110	1.25	25	.78	.98	1.30	29	26	52
PL10111	1.45	21	.78	.98	1.50	24	22	52
3-Turn Series								
PL10112	0.95	42	1.15	1.43	1.0	68	54	42
PL10113	1.40	36	1.15	1.43	1.5	43	35	42
PL10114	1.90	25	1.15	1.43	2.0	29	25	42
PL10115	2.40	20	1.15	1.43	2.5	23	21	42
PL10116	2.80	15	1.15	1.43	3.0	18	16	42
PL10117	3.40	12	1.15	1.43	3.5	15	13	42
4-Turn Series								
PL10118	1.60	37	1.44	1.80	1.60	55	43	37
PL10119	2.40	30	1.44	1.80	2.42	35	27	37
PL10120	3.30	17	1.44	1.80	3.60	20	18	37
PL10121	4.00	14	1.44	1.80	4.40	16	15	37
PL10122	4.90	11	1.44	1.80	5.34	13	12	37
PL10123	5.80	9	1.44	1.80	6.20	11	10	37

NOTES:

1. The rated current as listed is either 85% of the saturation current or the heating current, depending on which value is lower.
2. The saturation current is the current which causes the inductance to drop by 15% at the stated ambient temperatures (25°C and 100°C). This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
3. The heating current is the DC current which causes the temperature of the part to increase by approximately 45°C. This current is determined by mounting the component on a PCB with .25" wide, 2 oz. equivalent copper traces, and applying the current to the device for 30 minutes with no forced air cooling.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may neccessitate 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, the total copper and core losses should be taken into account. For approximate value of core losses, in a given application, use the core loss graph on page 24.
5. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL10118 becomes PL10118T). Pulse complies to industry standard tape and reel specification EIA481.
6. Meets solderability test per IPC/EIA J-STD-002B using flux type ORL0.
7. The temperature of the component (ambient plus temperature rise) must be within the stated opeating temperature range.

Mechanical

PL101XX

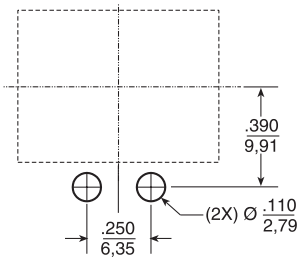


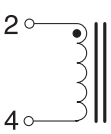
TAPE & REEL LAYOUT

Suggested Pad Layouts and Schematics

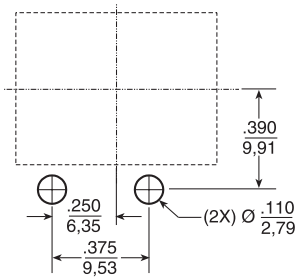
PL101XX

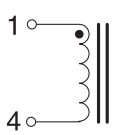
PL10100 - PL10111
.405 to 1.50 µH
21 to 73 Adc



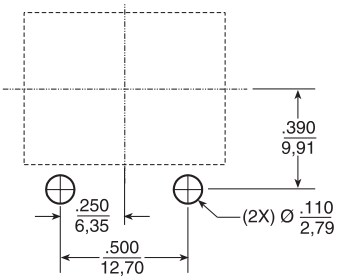


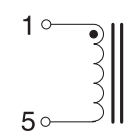
PL10112 - PL10117
1.00 to 3.40 µH
12 to 42 Adc





PL10118 - PL10123
1.60 to 6.20 µH
9 to 37 Adc

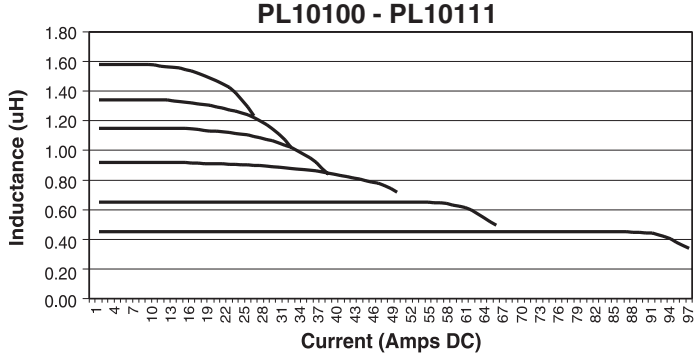




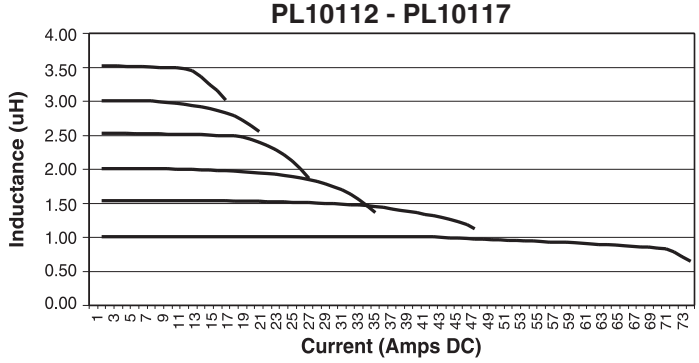
Inductance vs. Current Characteristics (25°C)

PL101XX

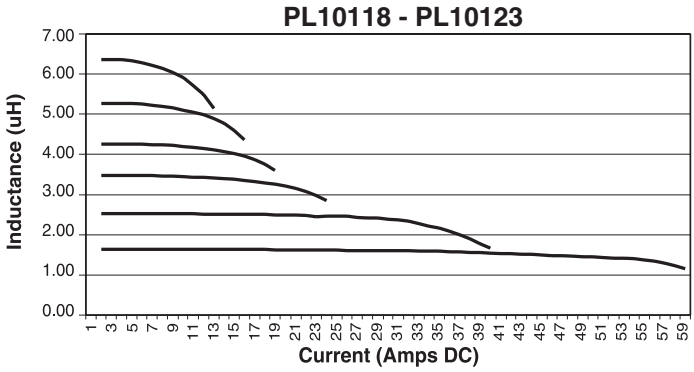
PL10100 - PL10111



PL10112 - PL10117



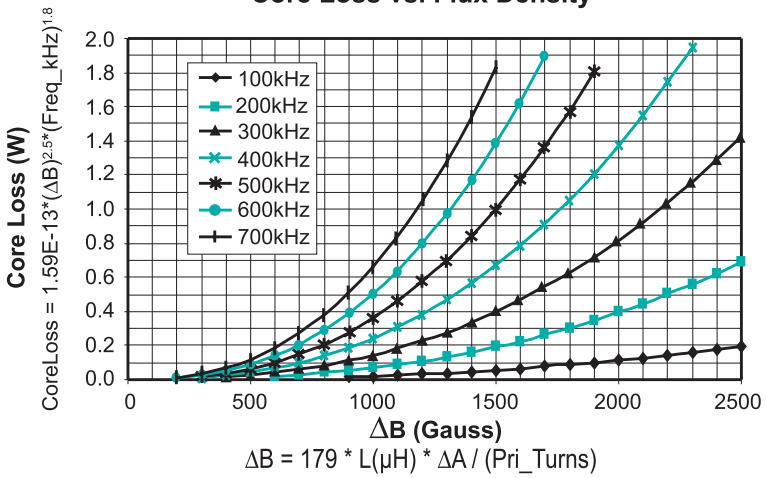
PL10118 - PL10123



Measurements Charts

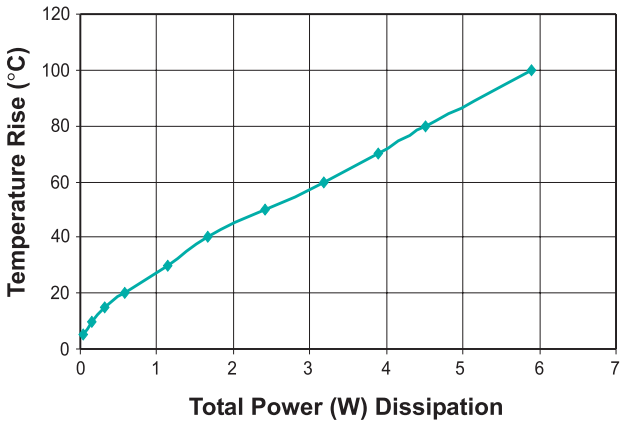
PL101XX

Core Loss vs. Flux Density



ΔB = 179 * L(µH) * ΔA / (Pri_Turns)

Temperature Rise vs. Power (W) Dissipation



Total Power Dissipation = Copper Loss (W) + Core Loss (W)

Copper Loss (W) = Current (rms)^2 * DCR (mΩ) / 1000 Core Loss (W) = per table

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