SMT POWER INDUCTORS

Shielded Drum Core - PL89XX Series
Ruggedized

- Inductance Range: 0.8µH to 54.4µH
- Current Rating: up to 11A
- Height: 7.1mm Max
- Footprint: 10.5mm x 10.5mm Max
- Moisture Sensitivity Level: 1

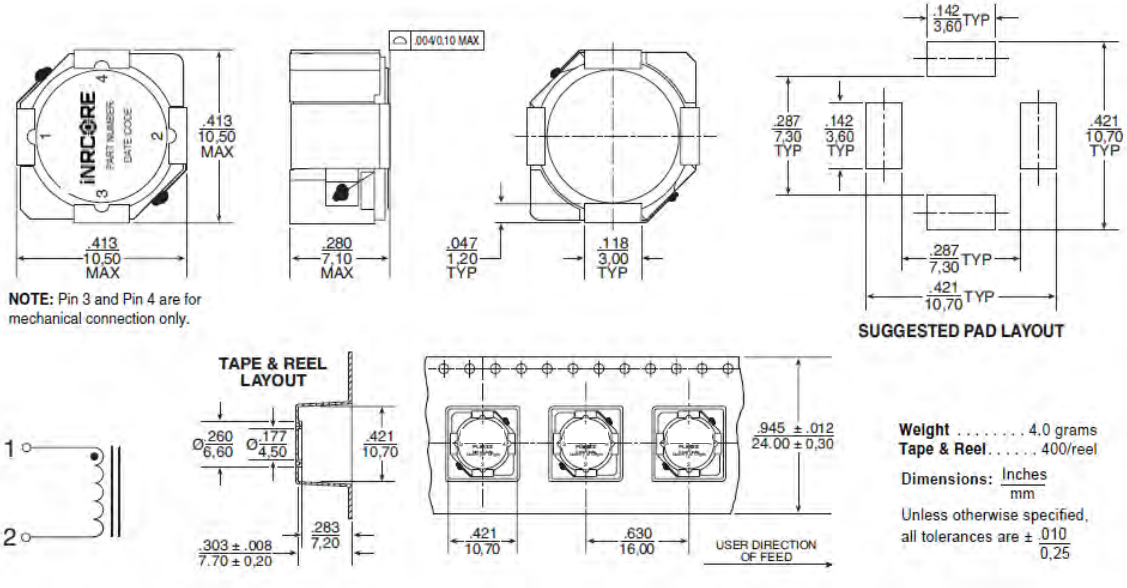
Electrical Specifications @ 25 °C – Operating Temperature – 40 °C to +130 °C

Part Numbers	Inductance @Irated (µH TYP)	Irated [2] (A)	DCR (mΩ) TYP	DCR (mΩ) MAX	Inductance @OA_{DC} (µH)	Saturation [3] Current (A) @25°C	Heating [4] Current (A)
PL8901	0.80	11	3.5	4.0	1.0*	14	11
PL8902	1.20	10	4.3	6.0	1.5*	13	10
PL8903	2.1	9.0	5.1	7.3	2.7*	11	9
PL8904	2.9	8.0	6.9	8.5	3.7*	9.2	8
PL8905	3.7	7.3	7.9	9.5	4.7*	8.2	7.3
PL8906	4.8	6.0	10.9	16.5	6.0*	6.9	6.0
PL8907	6	5.5	14.8	18.5	7.6*	6.2	5.5
PL8908	8	5.0	16.7	21.8	10	5.5	5.0
PL8909	9.6	4.5	18.1	29.0	12	5.1	4.5
PL8910	12	4.1	21.2	35.4	15	4.4	4.1
PL8911	14.4	4.0	27.9	37.0	18	4.3	4.0
PL8912	17.6	3.8	29.8	42.0	22	3.8	3.8
PL8913	21.6	3.4	40.9	45.9	27	3.4	3.4
PL8914	26.4	3.0	43.1	64.8	33	3.0	3.1
PL8915	31.2	2.7	60.8	81.5	39	2.8	2.7
PL8916	37.6	2.6	67.1	89.0	47	2.6	2.6
PL8917	54.4	2.1	103.6	135.0	68	2.1	2.1

*Inductance at OADC tolerance on indicated part numbers is ±30%; tolerance is ±20% on all other parts.
Optional Tape & Reel packaging can be ordered by adding a "**T**" suffix to the part number (i.e. PL8901 becomes **PL8901T**).

NOTES FROM TABLE: *(See back page)*

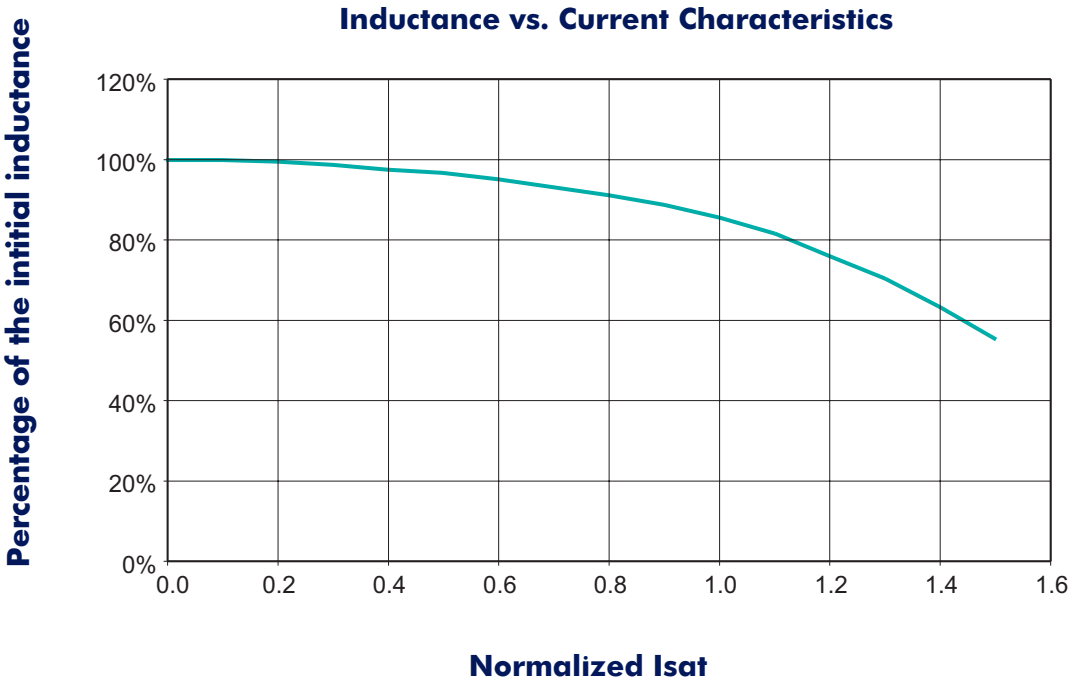
Mechanical



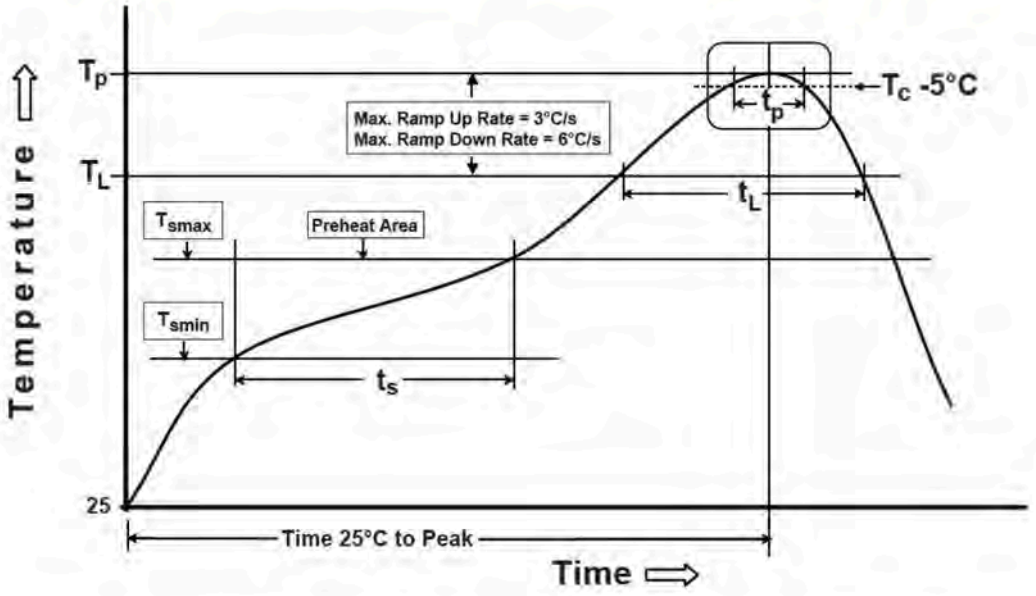
Electrical Schematic

Notes for tables:

1. Temperature of the component (ambient plus temperature rise) must be within specified operating temperature range.
2. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
3. The saturation current is the current which causes the inductance to drop to 75% of its initial inductance at zero bias. This current is determined by placing the component at room ambient (25°C), and applying a short duration pulse current (to eliminate self-heating effects) to the component.
4. The heating current is the DC current, which causes the temperature of the part to increase
   by approximately 40°C. This current is determined by extending the terminals of the component with 30mm length 28 gauge buss wires and applying the current to the device for 30 minutes. The temperature is measured by placing the thermo-couple between the winding and the shield.
5. 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 compo-nent. In order to determine the approximate total loss (or temperature rise) for a given application, both copper losses and core losses should be taken into account.



Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)



T_{SMIN} (°C)	T_{SMAX} (°C)	T_L (°C)	T_P (°C MAX)	t_S (s)	t_L (s)	t_P (s MAX)	Ramp-up rate (T_L to T_P)	Ramp-down rate (T_P to T_L)	Time 25°C to peak temperature (s MAX)
100	150	183	235	60-120	60-150	20	3°C/s MAX	6°C/s MAX	360

Notes:

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2.

For More Information

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