

SMT Power Inductors

Wire Wound
Ruggedized



- R Ruggedized for the Military and Aerospace Industries
- R Height: 0.480" MAX
- R Footprint: 0.75" x 0.875"
- R Maximum Reflow Temperature: 235°C
- R Moisture Sensitivity Level: 1

Electrical Specifications @ 25°C - Operating Temperature -55°C to +125°C

Part Number ⁶	Inductance @0A _{DC} (μH ±10%)	Inductance @ I _{rated} (μH TYP)	I _{rated} ¹ (A _{DC})	DCR (mΩ±10%)	Saturation ² Current I _{sat} (A TYP)		Heating ³ Current I _{DC} (A TYP)	Core Loss Factor K ₂
					25°C	100°C		
PL2089	16.0	16.0	9.9	9.1	12	11	9.9	258
PL2131	41.00	40.00	6.0	23.10	7.3	6.0	6.2	413
PL2141	57.8	57.8	5.0	34.5	6.2	5	5.1	490

Notes

- The rated current as listed is either the saturation current or the heating current depending on which value is lower.
- The saturation current is the typical current which causes the inductance to drop by 20% 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.
- The heating current is the DC current which causes the part temperature to increase by approximately 40°C.
- 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. To determine the approximate total losses (or temperature rise) for a given application, the core loss and temperature rise formula can be used:

$$\Delta B \text{ (Gauss)} = K_2 * \Delta I$$

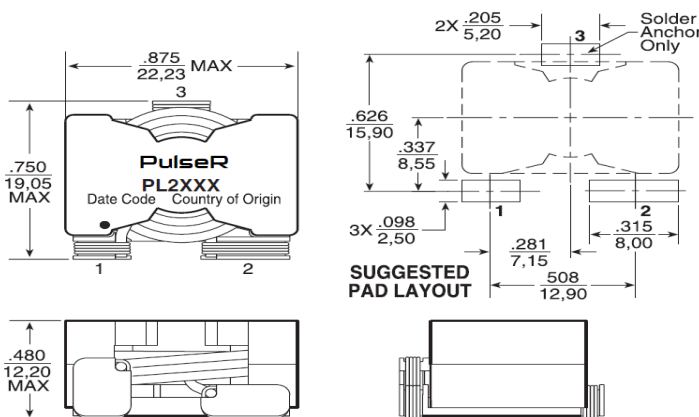
$$\text{Core Loss (W)} = 1.5E-13 * (\text{Freq_kHz})^{1.63} * \Delta B^{2.62}$$

- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- RoHS compliant version (100% pure Sn leads) available.

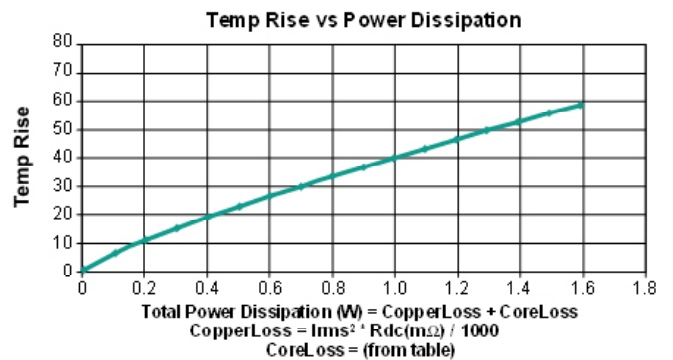
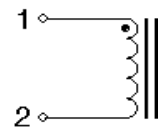
Mechanicals

Schematics

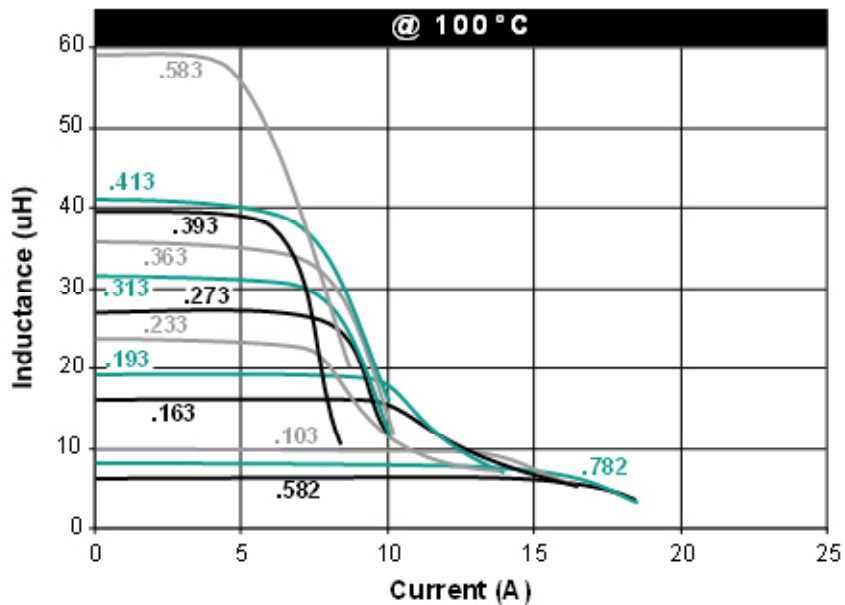
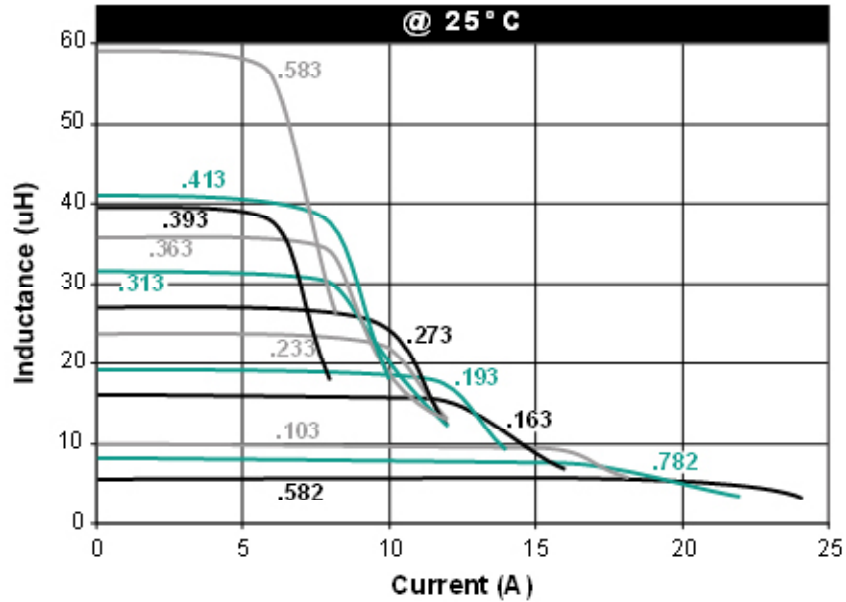
PL2085/PL2131/PL2141



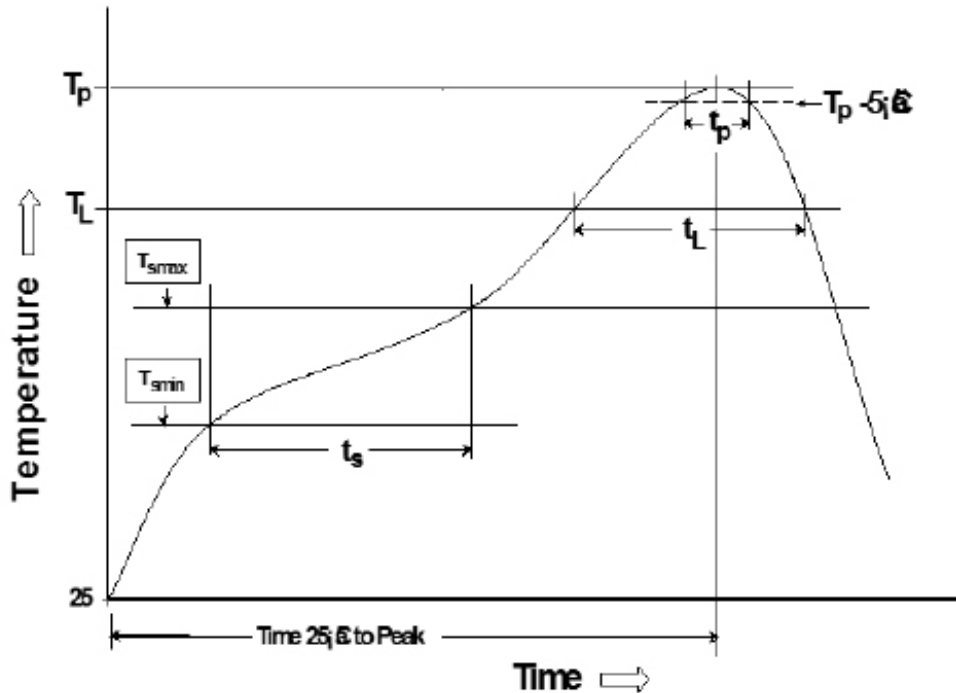
Lead Finish Sn63/Pb37
 Weight 13 grams
 PAN 70/tray
 Dimensions: Inches _____
 mm _____
 Unless otherwise specified, all tolerances are ± .010
 0,25



Inductance vs Current Characteristics



Transceiver 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	225	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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