

- ⦿ Ruggedized header with SLED rails for secure board mounting
- ⦿ Current Rating: up to 3.8ADC
- ⦿ Inductance Range: 9.4μH to 439μH
- ⦿ Operating Temperature: -40°C to +130°C
- ⦿ Lead Finish: Sn63/Pb37
- ⦿ Moisture Sensitivity Level: 1

Electrical Specifications @ 25°C

Part Number	Inductance @ Irated (μH)	Irated (A)	DCR (mΩ)		Inductance @ 0 ADC (μH)	ET REF ² (Volt-μsec)	100 Gauss ET100 (Volt-μsec)	1 Amp DC H1 (Orsted)
			TYP	MAX				
PL8500	9.4	3.80	27	32	10.4	15.2	2.65	11.95
PL8501	13.3	3.20	40	46	14.6	18.8	3.13	14.12
PL8502	23	2.40	65	74	25	24.3	4.10	18.46
PL8503	50	1.60	121	135	56	37.0	6.15	27.69
PL8504	75	1.30	181	220	83	44.3	7.47	33.67
PL8505	90	1.20	246	285	100	49.2	8.19	36.93
PL8506	137	1.00	387	425	152	59.4	10.12	45.61
PL8507	200	0.82	585	673	220	71.3	12.17	54.85
PL8508	305	0.66	845	972	331	85.8	14.94	67.34
PL8509	439	0.56	1322	1520	472	99.6	17.83	80.37

NOTES:

1. Add suffix "NL" for RoHS compliant version; i.e. PL8500 becomes **PL8500NL**. NL parts have 100% SN Lead Finish (MSL:4)
2. For Tape & Reel packaging, add "T" suffix at the end of the part number: i.e. **PL8500T**.
3. The reference inductance at rated DC current is a typical value.
4. The temperature rise is 50°C in a typical buck or boost circuits at 250kHz and with the reference ET applied to the inductor.
5. Total loss in the inductor is 380mW for 50°C temperature rise above ambient.

Estimated Temperature Rise:

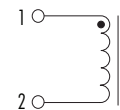
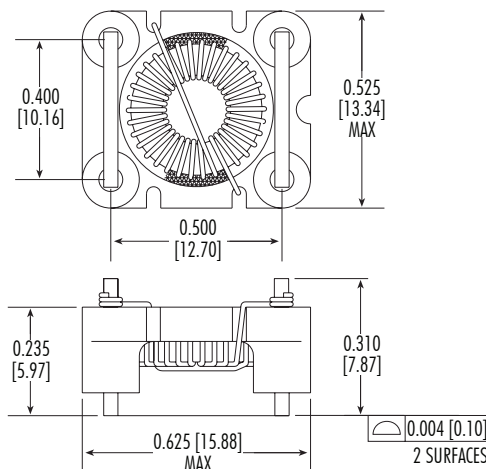
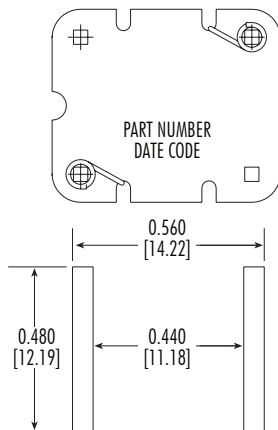
Trise = determine copper and core losses, divide by 380 and multiply by 50
 CopperLoss = $IDC^2 \times RN$
 CoreLoss = using frequency (f) and operating flux density (B), calculate $6.11 \times 10^{-18} \times B^{2.7} \times f^{2.04}$
 ΔB = calculate ET (V-μsec) for the application, divide by ET100 from the table, and multiply by 100.
 Limit the DC bias (H) to 46 orsted. Calculate H by multiplying H1 from the table by IDC of the application.

Mechanicals

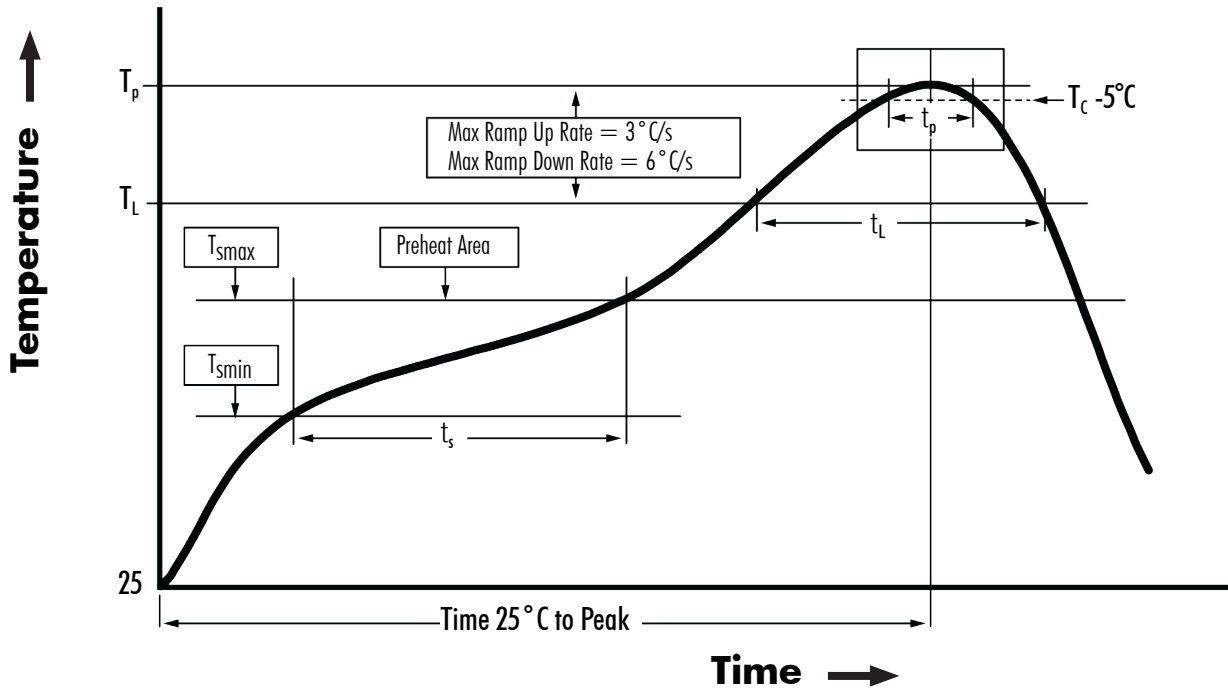
Electrical Schematics

PL85XX

Dimensions: inch [mm]
 Tolerance (unless otherwise specified): ±0.010 [0.25]



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



$T_{S_{MIN}}$ (°C)	$T_{S_{MAX}}$ (°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 number of reflow cycles not to exceed 2.

