SMT POWER INDUCTORS

Toroid - Military/Aerospace POGO Series
Ruggedized

- Ruggedized header with POGO pins for secure board mounting
- Current Rating: up to 8.3ADC
- Inductance Range: 2.0µH to 336µH
- Moisture Sensitivity Level: 1

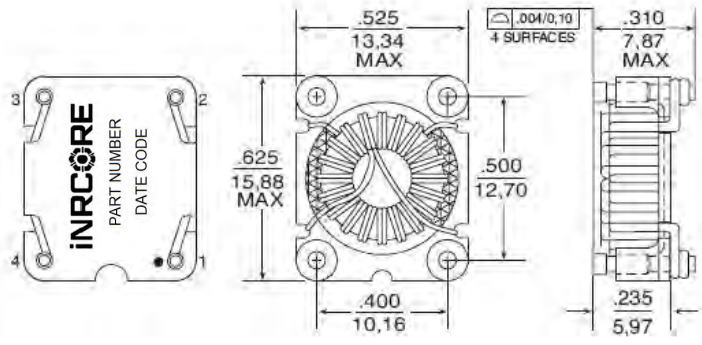
Electrical Specifications @ 25 °C – Operating Temperature – 40 °C to +130 °C

[9] Part Number	Inductance @ Irated (µH MIN)	Irated (A)	DCR (MAX) (mΩ)	ET (V-µsec)	Inductance @0ADC (µH ±10%)	100 Gauss ET100 (V-µsec)	1 Amp DC H1 (Orsted)	Connection
POGO 25								
PL8600	2.0	8.30	8.0	7.31	2.2	1.20	5.43	Parallel
PL8601	2.4	7.20	10.9	7.81	2.6	1.33	5.97	Parallel
PL8602	5.0	5.20	19.0	11.72	5.5	1.93	8.69	Parallel
PL8600	7.0	4.16	16.0	14.61	8.75	2.41	10.86	Series
PL8603	9.3	3.80	30	16.12	10.4	2.65	11.95	Parallel
PL8601	8.4	3.78	21.8	15.62	10.4	2.65	11.95	Series
PL8604	14.1	3.10	45.5	19.73	15.7	3.25	14.66	Parallel
PL8605	19.8	2.60	66.5	23.45	22.1	3.86	17.38	Parallel
PL8602	17.9	2.60	38.0	23.43	22.45	3.86	17.38	Series
PL8606	29.3	2.20	101	28.50	32.8	4.70	21.18	Parallel
PL8603	33.8	1.89	60	32.25	41.7	5.30	23.89	Series
PL8607	42.6	1.80	151	34.49	47.6	5.66	25.52	Parallel
PL8604	50.9	1.54	91	39.46	62.8	6.51	29.32	Series
PL8608	61.3	1.50	222	40.85	67.5	6.75	30.41	Parallel
PL8605	71.5	1.30	133	46.90	88.2	7.71	34.75	Series
PL8609	84.2	1.20	318	46.22	91.0	7.83	35.30	Parallel
PL8606	106.1	1.07	202	57.00	131.0	9.40	42.36	Series
PL8607	154.2	0.89	302	68.99	190.3	11.33	51.05	Series
PL8608	218.9	0.74	444	81.70	270.2	13.50	60.82	Series
PL8609	295.0	0.64	636	92.43	364.0	15.66	70.59	Series

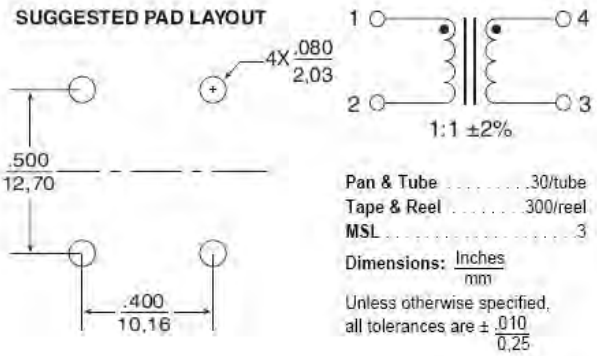
NOTES:

1. Temperature rise is 50°C in typical buck or boost circuits at 250kHz and with the reference ET applied to the inductor.
2. Total loss in the inductor is 380mWatts for a 50°C temperature rise above ambient.
3. To estimate temperature rise in a given application, determine copper and core losses, divide by 380 and multiply by 50.
4. For the copper loss, calculate IDC^2 X RN.
5. For core loss, using frequency (f) and operating flux density (B), calculate $6.11 \times 10^{-18} \times B^{2.7} \times f^{2.04}$.
6. For flux density (B), calculate ET (V-µsec) for the application, divide by ET100 from the table, and multiply by 100.
7. Limit the DC bias (H) to 46 orsteds. Calculate H by multiplying H1 from the table by IDC of the application.
8. The maximum DCR listed is approximately 17% over the nominal DCR.
9. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL8600 becomes **PL8600T**).

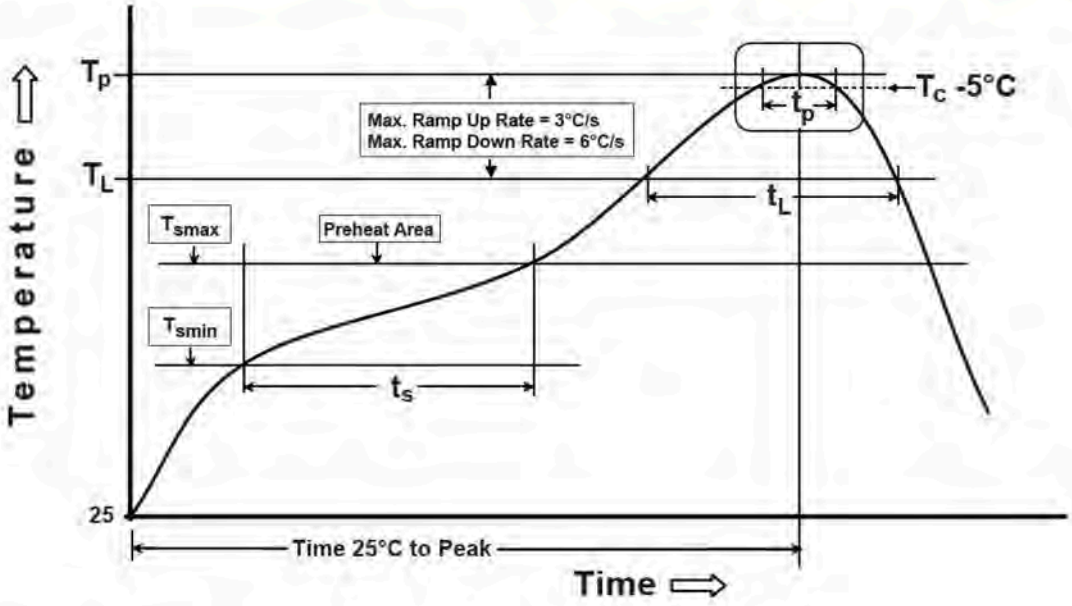
Mechanical



Electrical Schematic



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

iNRCORE,LLC
311 Sinclair Road Bristol,
PA 19007-6812 U.S.A
Tel: + 1.215.781.6400
Fax: +1.215.7816430

Global Sales Representatives and Locations:
http://www.inrcore.com

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