SMT POWER INDUCTORS
Toroid - POGO 40 Series
Ruggedized

iNRCORE FAMILY OF BRANDS

- Ruggedized header with POGO pins for secure board mounting
- Current Rating: up to 14.4ADC
- Inductance Range: up to 1.5μH to 139μH
- Operating Temperature: -40°C to +130°C
- Lead Finish: Sn63/Pb37
- Moisture Sensitivity Level: 1

Electrical Specifications @ 25°C

Part Number	Parallel Connection							Series Connection							Storage Capacity (μJoules)
	Inductance @ Irated (μH)	Irated (A)	DCR (mΩ) TYP	Inductance @ 0 ADC (μH)	ET REF [2] (Volt-μsec)	100 Gauss ET100 (Volt-μsec)	1 Amp DC H1 (Orsted)	Inductance @ Irated (μH)	Irated (A)	DCR (mΩ) TYP	Inductance @ 0 ADC (μH)	ET REF [2] (Volt-μsec)	100 Gauss ET100 (Volt-μsec)	1 Amp DC H1 (Orsted)	
POGO 40															
PL8700	1.5	14.40	4.41	2.2	4.80	1.71	3.77	6.1	7.20	17.60	9.0	9.60	3.42	7.53	159.01
PL8701	2.4	9.40	6.54	3.5	6.00	2.14	4.71	9.7	5.60	26.20	14.0	12.00	4.28	9.42	152.83
PL8702	4.2	8.10	10.47	5.9	7.85	2.78	6.12	17.0	4.10	41.90	23.7	15.70	5.56	12.24	142.57
PL8703	5.8	6.80	14.94	7.9	9.05	3.21	7.06	23.1	3.40	59.70	31.5	18.10	6.42	14.12	133.80
PL8704	7.6	5.70	20.99	10.1	10.25	3.64	8.00	30.6	2.85	84.00	40.5	20.50	7.27	16.01	124.18
PL8705	12.1	5.20	23.24	18.5	13.85	4.92	10.83	48.5	2.70	9300	71.1	27.70	9.84	21.66	176.62
PL8706	18.0	4.20	38.15	27.4	16.50	5.99	13.18	72.0	2.20	152.60	109.8	33.00	11.98	26.36	174.26
PL8707	27.0	3.30	53.21	40.5	20.50	7.27	16.01	108.0	1.77	212.80	161.8	41.00	14.55	32.01	169.14
PL8708	34.8	2.30	73.89	50.5	22.50	8.13	17.89	139.1	1.50	295.60	202.2	45.00	16.26	35.78	156.47

NOTES:

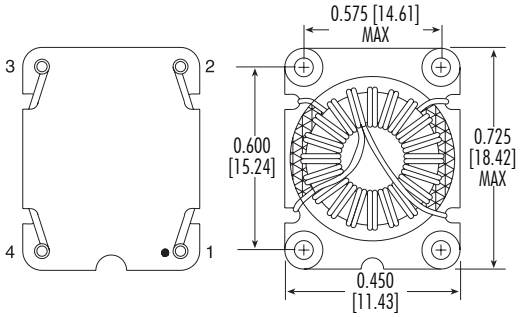
1. Add suffix "**NL**" for RoHS compliant version; i.e. PL8700 becomes **PL8700NL**. NL parts have 100% SN Lead Finish (MSL:4)
2. For Tape & Reel packaging, add "**T**" suffix at the end of the part number: i.e. **PL8700T.**
3. The reference inductance is a typical value at the AC and DC excitation listed.
4. Temperature rise is 55°C in typical buck or boost circuits at 100kHz and with the reference ET applied to the inductor.
5. Total loss in the inductor is 634mWatts for a 55°C temperature rise above ambient.
   Estimated Temperature Rise:
   Trise = determine copper and core losses, divide by 634 and multiply by 50.
   CopperLoss = IDC 2X RN
   CoreLoss = using frequency (f in Hertz) and operating flux density (B in Guass), calculate $2.24 \times 10^{-10} \times B^{2.11} \times f^{1.26}$
   ΔB = calculate ET (Volt-μsec) for the application, divite by ET100 from the table, and multiply by 100.

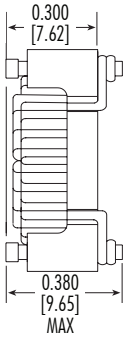
Mechanicals

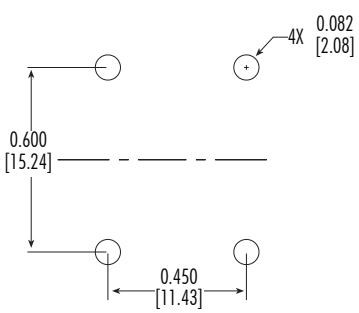
Electrical Schematics

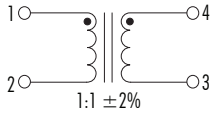
PL87XX

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









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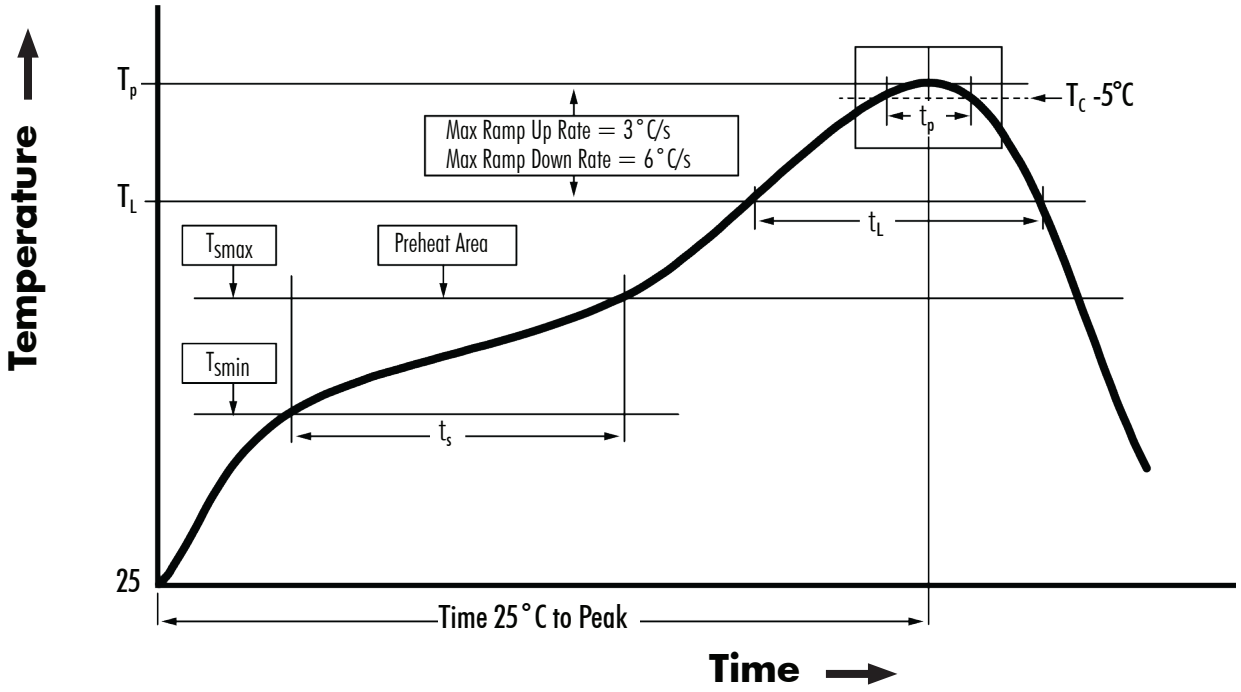
Recommended Reflow Profile (Based on J-STD-020D)



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 number of reflow cycles not to exceed 2.

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