SMT Power Inductors

Toroid - Ruggedized POGO Series
Ruggedized

- Ruggedized header with POGO pins for secure board mounting
- Current Rating: up to 14.4ADC
- Inductance Range: 1.5µH to 139µH.
- Moisture Sensitivity Level: 1

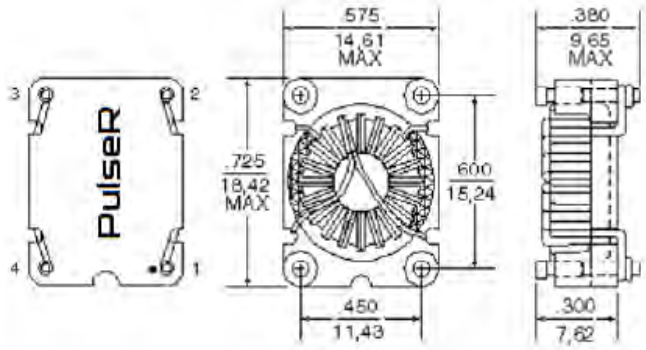
Electrical Specifications @ 25 °C – Operating Temperature – 40 °C to +130 °C

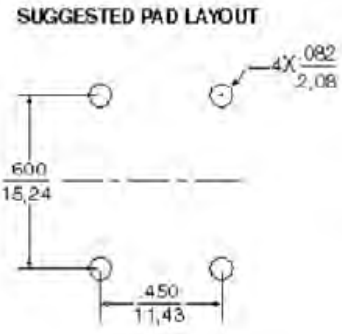
Part [8] Number	Inductance @ Irated (µH)	Irated (A)	DCR (TYP) (mΩ)	ET (V-µsec)	Storage Capacity (µJoules)	Inductance @ OA_{DC} (µH ±20%)	100 Gauss ET100 (V-µsec)	1 Amp DC H1 (Orsted)	Connection
PL8700	1.5	14.40	4.41	4.80	159.01	2.2	1.71	3.77	Parallel
	6.1	7.20	17.60	9.60	159.01	9.0	3.42	7.53	Series
PL8701	2.4	9.40	6.54	6.00	152.83	3.5	2.14	4.71	Parallel
	9.7	5.60	26.20	12.00	152.83	14.0	4.28	9.42	Series
PL8702	4.2	8.10	10.47	7.85	142.57	5.9	2.78	6.12	Parallel
	17.0	4.10	41.90	15.70	142.57	23.7	5.56	12.24	Series
PL8703	5.8	6.80	14.94	9.05	133.80	7.9	3.21	7.06	Parallel
	23.1	3.40	59.70	18.10	133.80	31.5	6.42	14.12	Series
PL8704	7.6	5.70	20.99	10.25	124.18	10.1	3.64	8.00	Parallel
	30.6	2.85	84.00	20.50	124.18	40.5	7.27	16.01	Series
PL8705	12.1	5.20	23.24	13.85	176.62	18.5	4.92	10.83	Parallel
	48.5	2.70	93.00	27.70	176.62	74.1	9.84	21.66	Series
PL8706	18.0	4.20	38.15	16.50	174.26	27.4	5.99	13.18	Parallel
	72.0	2.20	152.60	33.00	174.26	109.8	11.98	26.36	Series
PL8707	27.0	3.30	53.21	20.50	169.14	40.5	7.27	16.01	Parallel
	108.0	1.77	212.80	41.00	169.14	161.8	14.55	32.01	Series
PL8708	34.8	2.30	73.89	22.50	156.47	50.5	8.13	17.89	Parallel
	139.1	1.50	295.60	45.00	156.47	202.2	16.26	35.78	Series

NOTES:
1. The reference inductance is a typical value at the AC and DC excita-tion listed.
2. Temperature rise is 55°C in typical buck or boost circuits at 100kHz and with the reference ET applied to the inductor.
3. Total loss in the inductor is 634mWatts for a 55°C temperature rise above ambient.
4. To estimate temperature rise in a given application, determine cop-per and core losses, divide by 634 and multiply by 50.
5. For the copper loss, calculate IDC 2X RN.
6. For core loss (mW), using frequency (f in Hertz) and operating flux density (B in Gauss), calculate 2.24 x 10-10 x B2.11 x f1.26.
7. For flux density (B), calculate ET (V-µsec) for the application, divide by ET100 from the table, and multiply by 100.
8. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL8700 becomes **PL8700T)**.

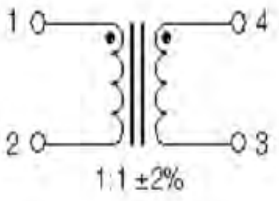
Mechanical

PL870X





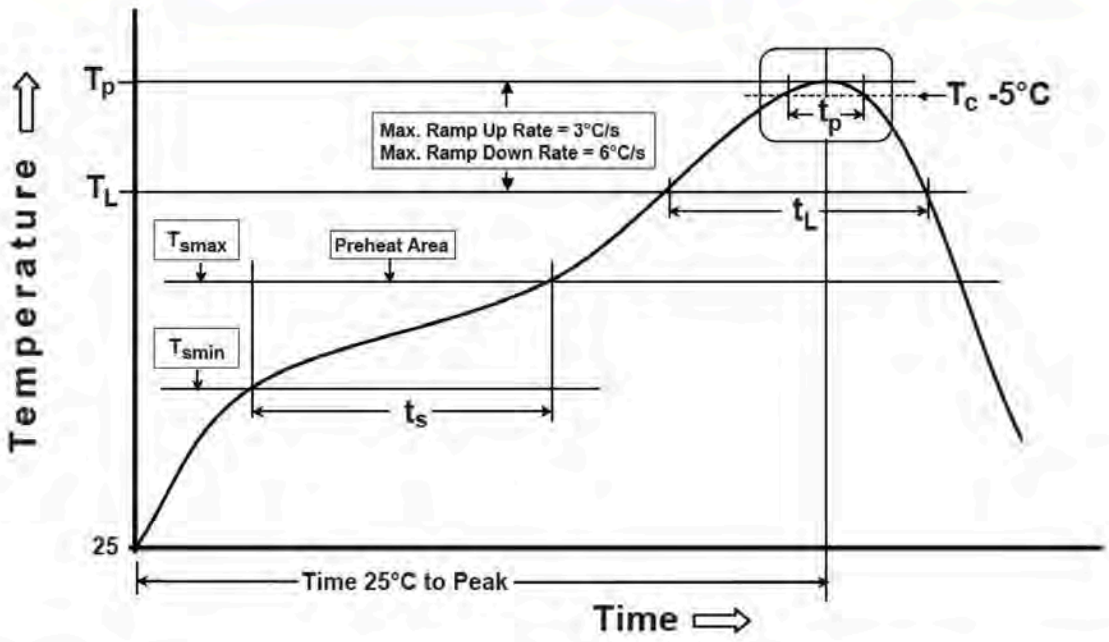
Electrical Schematic



Tube 30/tube
Tape & Reel 300/reel

Dimensions: Inches / mm
Unlessotherwisespecified,alltolerancesare±.010 / 0,25

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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