SMT POWER INDUCTORS
Toroid – POGO Series
Ruggedized

- Ruggedized header with POGO pins for secure board mounting
- Current Rating:up to 23.8ADC
- Frequency Range:up to 1MHz
- Moisture Sensitivity Level: 3

Electrical Specifications @ 25 °C – Operating Temperature – 55 °C to +130 °C

Part [4,5] Number	Inductance @ Irated (µH)	Irated (A)	DCR (mΩ) TYP	DCR (mΩ) MAX	Inductance @ 0ADC (µH)	Reference ET (Volt-µsec)	Flux Density Factor (K1)	Core Loss Factor (K2)	Temp. Rise Factor (K3)	Connection
POGO 40										
PL8400	43.6	1.1	247.2	309	77	7.83	0.295	1.87E-10	114.23	Single
POGO 50										
PL8401	21.9	2.7	72.4	90.5	39.5	6.9	0.297	3.35E-10	85.71	Single
PL8402	4.025	6.4	18.4	23	6.575	3.135	0.638	4.52E-10	67.89	Single
PL8403	0.53	23.8	1.0	3	0.88	1	2.020	3.35E-10	85.71	Parallel
PL8404	1.1	21	1.7	2.5	2.1	1.75	1.116	4.52E-10	67.89	Parallel
POGO 60										
PL8405	2.1	22.4	2.5	3.4	4	3.25	0.559	9.58E-10	44.56	Parallel

NOTES:

1. Reference values are for an inductor with a 55°C temperature rise.
   The core loss is 10% of the copper loss at the ET listed and 500kHz.
2. Core does not saturate abruptly. The ET and DC current are limited by the desired inductance and temperature rise.
3. 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. In order to determine the approximate total losses (or temperature rise) for a given application, both copper and core losses should be taken into account.

Estimated Temperature Rise:

$$Trise = K3 * (Coreloss(W) + Copperloss(W))^{.833} \ (C)$$

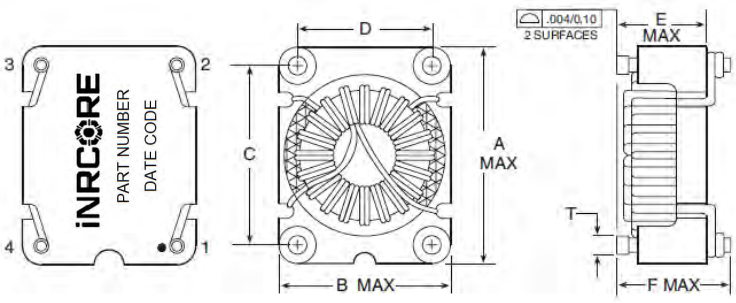
$$CopperLoss = Irms^2 * DCR\_Typical\ (m\Omega) / 1000$$

$$CoreLoss = K2 * (Freq\_kHz)^{1.26} * (æB)^{2.11}$$

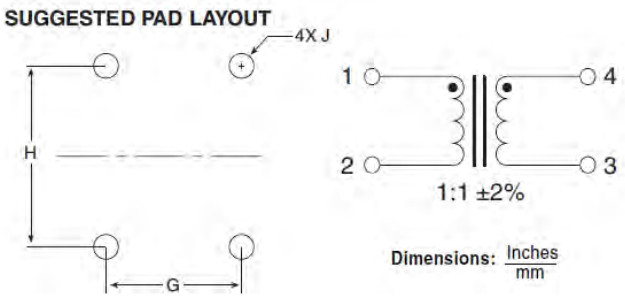
$$æB = K1 * Volt\text{-}µsec * 100$$

4. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL8400 becomes **PL8400T)**.

Mechanicals

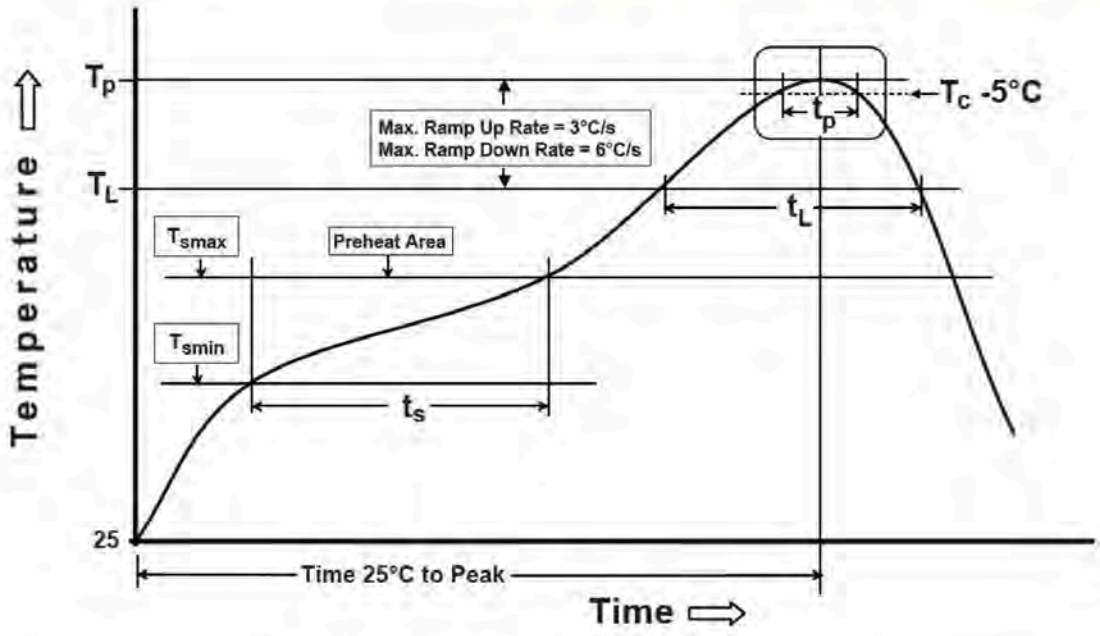


Electrical Schematics



PKG	A	B	C	D	E	F	G	H	J	T	Weight (MAX)	Tube	Reel
POGO 40	.725 18,42	.575 14,61	.600 15,24	.450 11,43	.310 7,87	.380 9,65	.450 11,43	.600 15,24	.082 2,08	.062 1,57	3.5 grams	30	300
POGO 50	.910 23,11	.700 17,78	.730 18,54	.520 13,21	.400 10,16	.510 12,95	.520 13,21	.730 18,54	.145 3,68	.125 3,18	8.2 grams	35	200
POGO 60	1.280 32,51	1.070 27,18	1.100 27,94	.890 22,61	.400 10,16	.510 12,95	.890 22,61	1.100 27,94	.145 3,68	.125 3,18	14.2 grams	15	100

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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