





# SMT POWER INDUCTORS

## Flat Coils - PG0077 and PG0084 Series



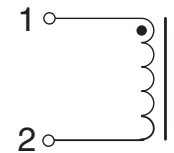
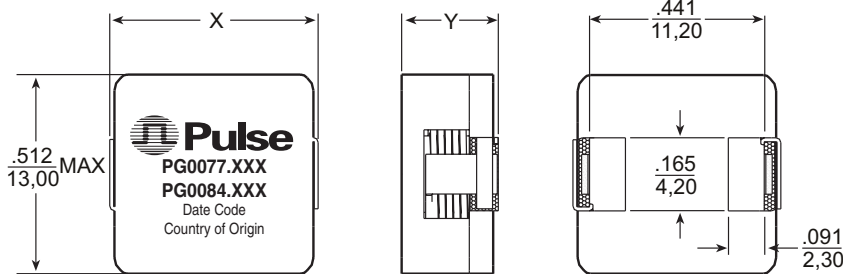
-  **Height:** 6.5mm Max (PG0077) and 4.35mm Max (PG0084)
-  **Footprint:** 14.5mm x 13.0mm Max
-  **Current Rating:** up to 40A
-  **Inductance Range:** 0.10μH to 2.65μH

### Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C<sup>1</sup>

Part Number	Inductance @ Irated <sup>2</sup> (μH TYP)	Irated <sup>3</sup> (A)	DCR (mΩ)		Inductance @ 0A <sub>dc</sub> (μH ±20%)	Saturation Current Isat (A)	Heating Current I <sub>dc</sub> (A)	Core Loss <sup>6</sup> Factor	
			TYP	MAX				K1	K2
PG0077.181	0.16	40	0.40	0.50	0.18	60	40	13.77E-9	20.7
PG0077.401	0.38	35	0.75	0.80	0.45	48	35	13.77E-9	27.6
PG0077.801	0.75	31	1.20	1.30	0.80	38	31	13.77E-9	39.4
PG0077.142	1.32	26	2.00	2.10	1.40	28	26	13.77E-9	53.6
PG0077.202	1.90	21	2.80	2.90	2.00	24	21	13.77E-9	62.7
PG0077.282	2.65	17	4.10	4.20	2.80	20	17	13.77E-9	74.3
PG0084.131	0.10	32	0.60	0.90	0.13 ±25%	58	32	9.18E-9	18.2
PG0084.351	0.28	28	1.30	1.80	0.35	40	28	9.18E-9	29.4
PG0084.651	0.52	21.5	2.30	2.80	0.65	32	21.5	9.18E-9	39.1
PG0084.112	0.88	19	3.60	4.20	1.10	24	19	9.18E-9	51.4
PG0084.162	1.28	16	5.40	6.30	1.60	19	16	9.18E-9	61.2
PG0084.222	1.76	14	8.10	9.00	2.20	16.5	14	9.18E-9	71.2

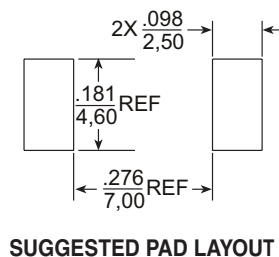
### Mechanical

### Schematic

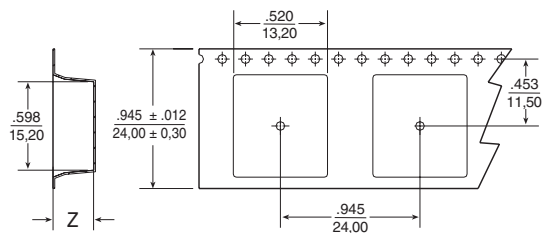


**PG0077**    **PG0084**  
 Weight .....5.5 grams.....3.5 grams  
 Tape & Reel.....300/reel .....400/reel

Part Number	Max. Length "X" (in./mm)	Max. Height "Y" (in./mm)	Max. Height "Z" (in./mm)
PG0077.181	.571/14.50	.256/6.50	.276/7.00
PG0077.401	.571/14.50	.256/6.50	.276/7.00
PG0077.801	.571/14.50	.256/6.50	.276/7.00
PG0077.142	.551/14.00	.256/6.50	.276/7.00
PG0077.202	.551/14.00	.256/6.50	.276/7.00
PG0077.282	.551/14.00	.256/6.50	.276/7.00
PG0084.131	.559/14.20	.171/4.35	.173/4.40
PG0084.351	.551/14.00	.171/4.35	.173/4.40
PG0084.651	.551/14.00	.171/4.35	.173/4.40
PG0084.112	.543/13.80	.171/4.35	.173/4.40
PG0084.162	.543/13.80	.171/4.35	.173/4.40
PG0084.222	.543/13.80	.171/4.35	.173/4.40



**Dimensions:** Inches / mm  
 Unless otherwise specified, all tolerances are ± .010 / 0.25



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### Notes from Tables

1. The temperature of the component (ambient plus temperature rise) must be within the standard operating temperature range.
2. Inductance at Irated is a typical inductance value for the component taken at rated current.
3. The rated current listed is the lower of the saturation current @ 25°C or the heating current.
4. The saturation current, Isat, is the current at which the component inductance drops by 20% (typical) at an ambient temperature of 25°C. This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
5. The heating current, Ibc, is the DC current required to raise the component temperature by approximately 40°C. The heating current is determined by mounting the component on a typical PCB and applying current for 30 minutes. The temperature is measured by placing the thermocouple on top of the unit under test. Take note that the component's performance varies depending on the system condition. It is suggested that the component be tested at the system level, to verify the temperature rise of the component during system operation.

6. Core loss approximation is based on published core data:

$$\text{Core Loss} = K1 * (f)^{0.5539} * (K2\Delta I)^{2.2355}$$

Where: Core Loss = in Watts

f = switching frequency in kHz

K1 & K2 = core loss factors

ΔI = delta I across the component in Ampere

K2ΔI = one half of the peak to peak flux density across the component in Gauss

7. Unless otherwise specified, all testing is made at 100kHz, 0.1V<sub>AC</sub>.
8. Add suffix "T" to the part number for Tape & Reel packaging (ex: PG0077.181T).

### Inductance vs Current Characteristics

