SMT POWER INDUCTORS
Flat Coils - PG0377 Series

Pulse® A TECHNITROL COMPANY

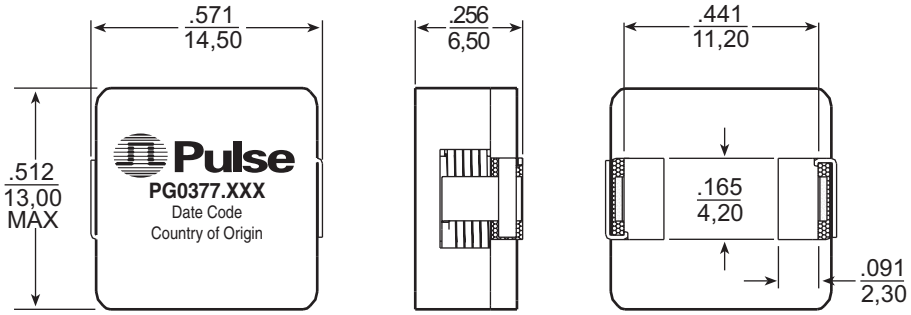
RoHS COMPLIANT

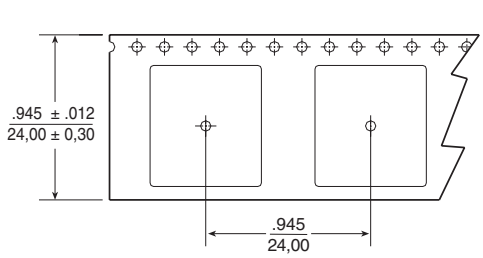
- **Height:** 6.5mm Max
- **Footprint:** 14.5mm x 13.0mm Max
- **Current Rating:** up to 35A
- **Inductance Range:** 0.16µH to 2.65µH
- **RoHS Compliant:** Refer to Note 9

Electrical Specifications @ 25°C — Operating Temperature -40°C to +95°C [1]

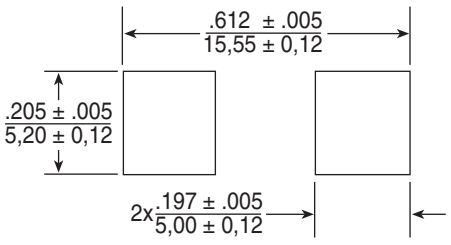
Part[8,9] Number	Inductance[2] @Irated (µH TYP)	Irated[3] (A)	DCR (mΩ) TYP	DCR (mΩ) MAX	Inductance @0ADC (µH ±20%)	Saturation[4] Current Isat (A)	Heating[5] Current IDC (A)	Core Loss[6] Factor K1	Core Loss[6] Factor K2	Capacitance[10] (pF TYP)
PG0377.181	0.16	48	0.40	0.50	0.18	60	48	1.68E-9	22.3	20
PG0377.401	0.38	35	0.75	0.80	0.45	48	35	1.68E-9	33.5	24
PG0377.801	0.75	31	1.20	1.30	0.80	38	31	1.68E-9	42.5	25
PG0377.142	1.32	26	2.00	2.10	1.40	28	26	1.68E-9	57.8	26
PG0377.202	1.90	21	2.80	2.90	2.00	24	21	1.68E-9	67.6	31
PG0377.282	2.65	17	4.10	4.20	2.80	20	17	1.68E-9	80.1	36

Mechanical



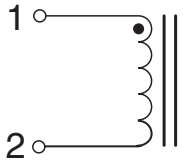


TAPE & REEL LAYOUT



SUGGESTED PAD LAYOUT

Schematic



Weight.....5.5 grams
Tape & Reel.....300/reel

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, I_{SAT}, 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, I_{DC}, 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:

   Core Loss = $K1 * (f)^{1.035} * (K2\Delta I)^{2.263}$

   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_{AC}.
8. Optional Tape & Reel packaging can be ordered by adding a "**T**" suffix to the part number (i.e. PG0377.401 becomes PG0377.401**T**). Pulse complies to industry standard tape and reel specification EIA481.
9. RoHS compliant parts are available. Order RoHS compliant parts by adding the suffix "**NL**" to the part number (i.e. PG0377.401 becomes PG0377.401**NL** and PG0377.401T becomes PG0377.401**NL**T).
10. The capacitance of the inductor is a typical value measured at 100kHz, 0.1Vrms using the HP Impedance Analyzer 4192A between the inductor terminals and the exposed portion of the E-core (Fig.1).
11. **DIELECTRIC WITHSTAND VOLTAGE:** 150V_{DC} between the inductor terminals and the exposed portion of the E-core (Fig.1).
12. **INSULATION RESISTANCE:** 500kΩ MIN, when measured from the inductor terminals to the exposed portion of the E-core (Fig.1).

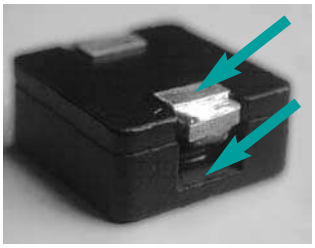
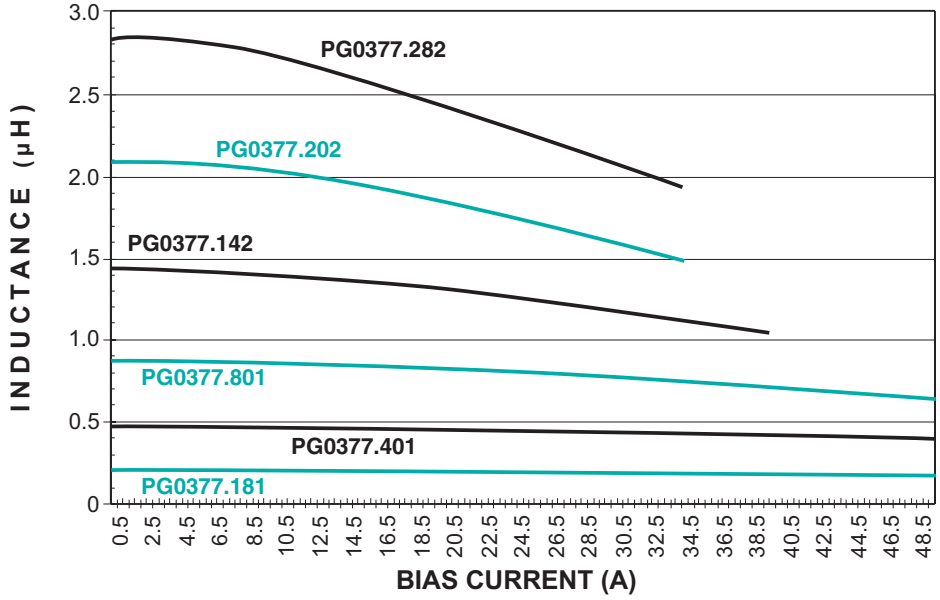


Figure 1

Inductance vs Current Characteristics



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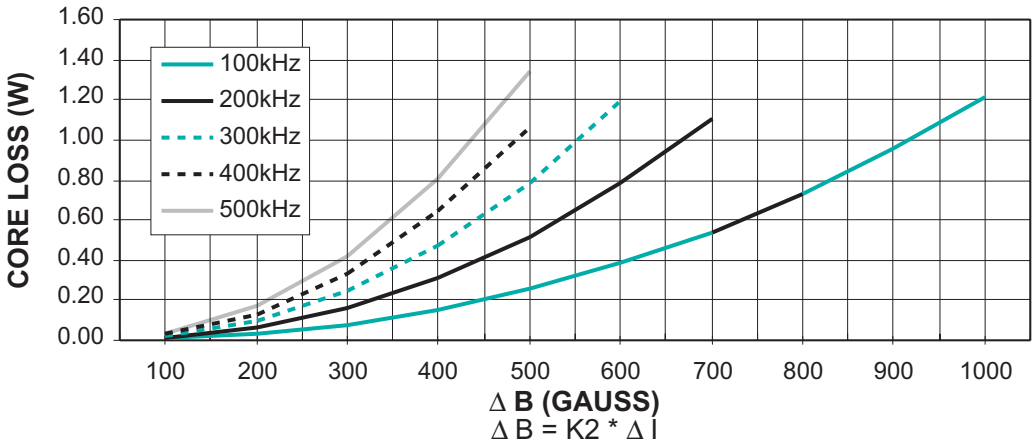
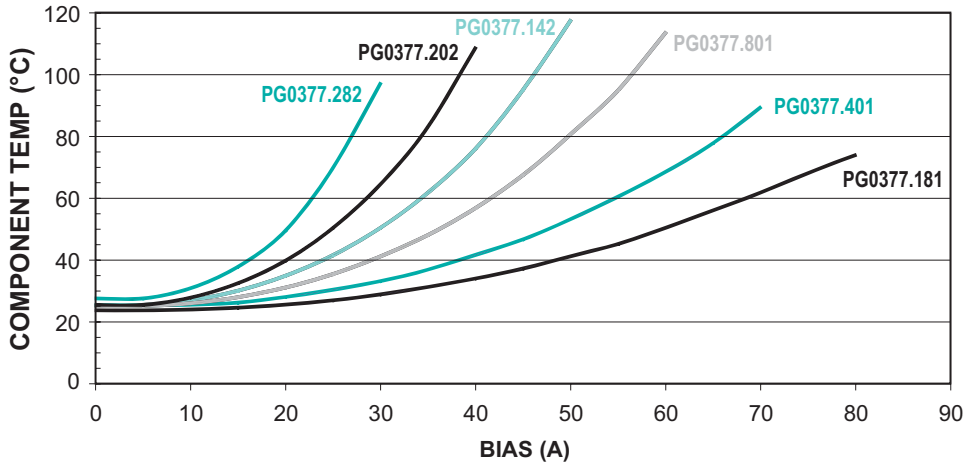
Typical Core Loss vs Peak Flux Density



Typical Component Temperature vs DC Bias Current



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