SMT POWER INDUCTORS
Flat Coils - PG0155NL Series

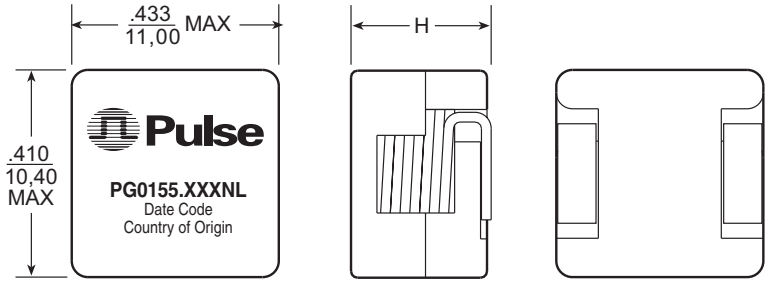
Pulse A TECHNITROL COMPANY

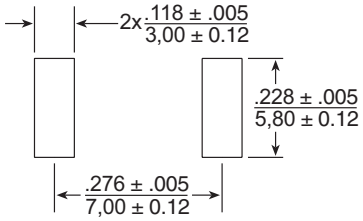
- All Inductors are RoHS Compliant
- **Height:** 3.7mm Max
- **Footprint:** 11.0mm x 10.4mm Max
- **Current Rating:** up to 24A
- **Inductance Range:** 0.30µH to 0.91µH
- High temperature core material, no thermal aging below 150°C

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [1]

Part Number	Inductance @Irated[2] (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 (K2)
PG0155.331NL	0.30	24	1.7	2.2	0.33	38	24	81.36
PG0155.601NL	0.53	19	2.8	3.2	0.60	27	19	108.47
PG0155.102NL	0.91	14	5.3	5.8	1.0	21.5	14	142.73

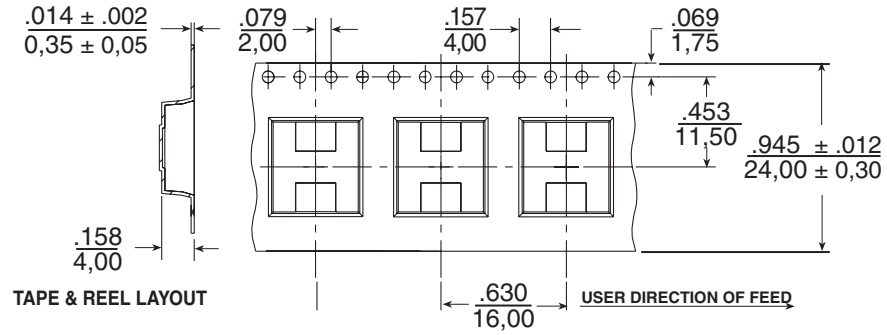
Mechanical





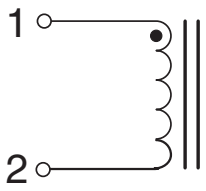
SUGGESTED PAD LAYOUT

Part No.	Max. Height "H" (in./mm)
PG0155.331NL	.146/3,7
PG0155.601NL	.146/3,7
PG0155.102NL	.142/3,6



TAPE & REEL LAYOUT

Schematic



Weight . . . . . .1.6 grams
Tape & Reel 850/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, 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, 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 * $(f)^{1.30}$ * $(K2\Delta I)^{2.41}$

   Where: Core Loss = in Watts

   K1 = 1.20E-10

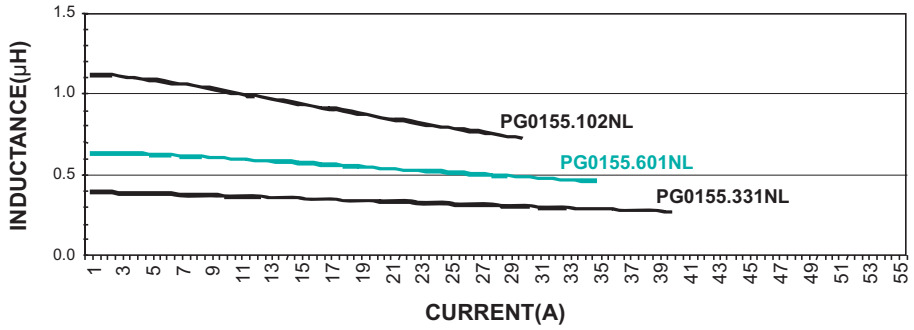
   f = switching frequency in kHz

   K1 & K2 = core loss factors

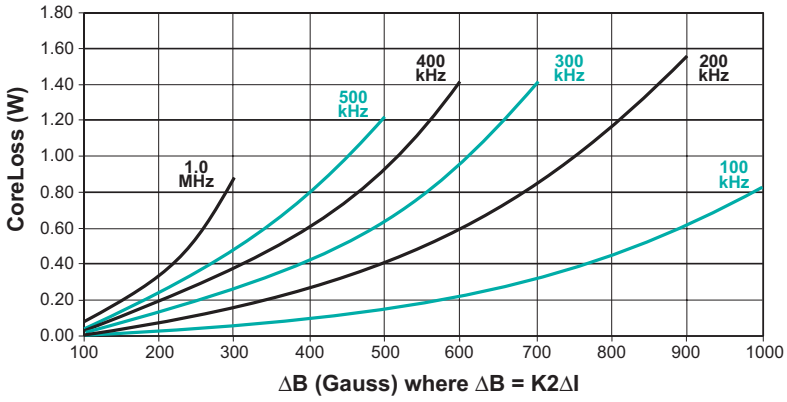
   ΔI = delta I across the component in Ampere

   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. Add suffix **"T"** to the part number for Tape & Reel packaging (ex: PG0155.331NL**T**).

Inductance vs Current Characteristics



Typical Core Loss vs Peak Flux Density



For More Information:

Pulse Worldwide Headquarters
12220 World Trade Dr.
San Diego, CA 92128
U.S.A.
www.pulseeng.com
Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe
Einsteinstrasse 1
D-71083 Herrenberg
Germany
Tel: 49 7032 7806 0
Fax: 49 7032 7806 12

Pulse China Headquarters
B402, Shenzhen
Tech-Innovation International
Tenth Kejinan Rd.
High-Tech Industrial Park
Nanshan District, Shenzhen
China
Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China
Room 1503
XinYin Building
No. 888 YiShan Rd.
Shanghai 200233
China
Tel: 86 21 54643211/2
Fax: 86 21 54643210

Pulse South Asia
150 Kampong Ampat
#07-01/02
KA Centre
Singapore 368324
Tel: 65 6287 8998
Fax: 65 6280 0080

Pulse North Asia
No. 26
Kao Ching Rd.
Yang Mei Chen
Tao Yuan Hsien
Taiwan, R. O. C.
Tel: 886 3 4641811
Fax: 886 3 4641911