

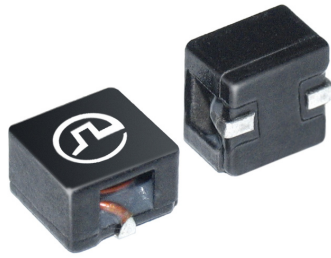


**THE DATASHEET OF
PG0642.681NLT**



SMT Power Inductors

Round Wire Coils - PG0642NL Series



- Height:** 5.0mm Max
- Footprint:** 7.9mm x 7.6mm Max
- Saturation Current:** up to 32Apk
- Inductance Range:** 0.32μH to 5.4μH

Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C ¹

Part ⁹ Number	Inductance ² @ Irated (μH TYP)	Irated ³ (A)	DCR ⁴ (mΩ) (±6%)	Inductance @ 0A _{dc} (μH ±20%)	Saturation ⁵ Current Isat (A TYP)	Heating ⁶ Current I _{hc} (A TYP)	Core Loss ⁷ Factor K2
PG0642.401NL	0.32	20.0	3.3	0.40	32	20.0	33.6
PG0642.681NL	0.54	17.5	4.3	0.68	25	17.5	46.5
PG0642.102NL	0.80	14.5	5.8	1.00	22	14.5	58.2
PG0642.152NL	1.20	13.3	6.8	1.50	18	13.3	75.7
PG0642.222NL	1.70	10.0	12.7	2.20	14	10.0	84.7
PG0642.332NL	2.60	9.5	16.6	3.30	13	9.5	107.0
PG0642.472NL	3.70	9.0	18.4	4.70	10	9.0	140.1
PG0642.682NL	5.40	6.0	26.4	6.80	8	6.0	176.2

Notes:

- Actual temperature of the component (ambient plus temperature rise) must be within the standard operating temperature range.
- Inductance at Irated is a typical inductance value for the component taken at rated current.
- The rated current listed is the lower of the saturation current (@ 25°C) or the heating current depending on which value is lower.
- The DCR of the part is measured at an ambient temperature of 20C 3C from point a and b as shown above on the mechanical drawing.
- 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.
- The heating current, I_{hc}, 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.
- Core Loss approximation is based on published core data:
Core Loss = K1 * (f)^{1.48} * (K2ΔI)^{1.97}
Where: Core Loss = in Watts
K1 = 5.894E-10
f = switching frequency in kHz
K1 & K2 = core loss factors
ΔI = delta I across the component in Ampere
K2* ΔI = one half of the peak to peak flux density across the component in Gauss
- Unless otherwise specified, all testing is made at 100kHz, 0.1V_{ac}.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG0642.222NL becomes PG0642.222NLT). Pulse complies to industry standard tape and reel specification EIA481. The tape and reel for this product has a width (W=24mm), pitch (Po=12mm) and depth (Ko=5.5mm).

USA 858 674 8100

Germany 49 2354 777 100

Singapore 65 6287 8998

Shanghai 86 21 62787060

China 86 755 33966678

Taiwan 886 3 4356768

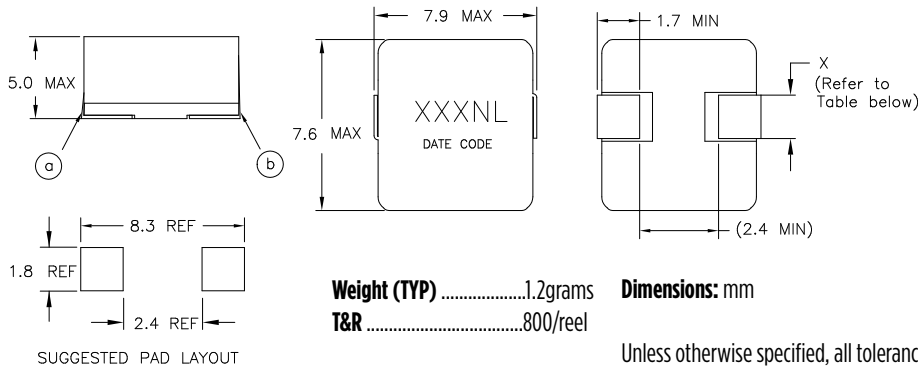
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Mechanical

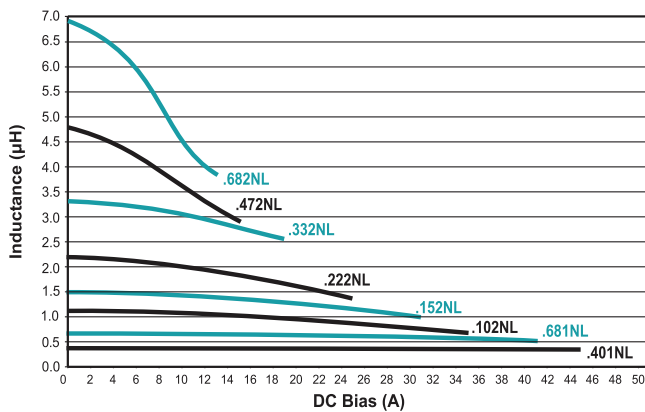
Schematic

PG0642.XXXNL

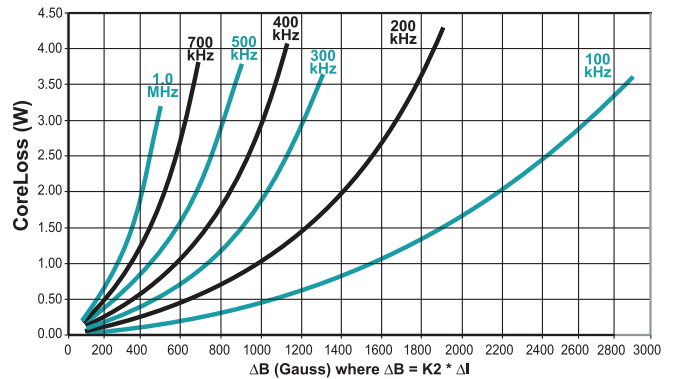


Part Number	X (Ref.)
PG0642.401NL	1.2mm
PG0642.681NL	1.2mm
PG0642.102NL	1.1mm
PG0642.152NL	1.1mm
PG0642.222NL	0.8mm
PG0642.332NL	0.7mm
PG0642.472NL	0.7mm
PG0642.682NL	0.7mm

Typical Inductance vs Current Characteristics



Typical Core Loss vs Peak Flux Density



For More Information

Pulse Worldwide Headquarters

12220 World Trade Drive
 San Diego, CA
 92128
 U.S.A.

Pulse Europe

Pulse Electronics GmbH
 Am Rottland 12
 58540 Meinerzhagen
 Germany

Pulse China Headquarters

B402, Shenzhen Academy of
 Aerospace Technology Bldg.
 10th Kejian Road
 High-Tech Zone
 Nanshan District
 Shenzhen, PR China 518057

Pulse North China

Room 2704/2705
 Super Ocean Finance
 Ctr.
 2067 Yan An Road
 West
 Shanghai 200336
 China

Pulse South Asia

135 Joo Seng Road
 #03-02
 PM Industrial Bldg.
 Singapore 368363

Pulse North Asia

3F, No. 198
 Zhongyuan Road
 Zhongli City
 Taoyuan County 320
 Taiwan R. O. C.

Tel: 858 674 8100
 Fax: 858 674 8262

Tel: 49 2354 777 100
 Fax: 49 2354 777 168

Tel: 86 755 33966678
 Fax: 86 755 33966700

Tel: 86 21 62787060
 Fax: 86 2162786973

Tel: 65 6287 8998
 Fax: 65 6287 8998

Tel: 886 3 4356768
 Fax: 886 3 4356823 (Pulse)
 Fax: 886 3 4356820 (FRE)

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