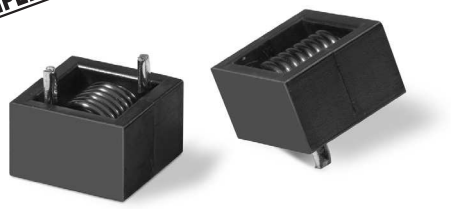
THT POWER INDUCTORS
Power Cubes - PG0322NL Series

Pulse
A TECHNITROL COMPANY

RoHS COMPLIANT

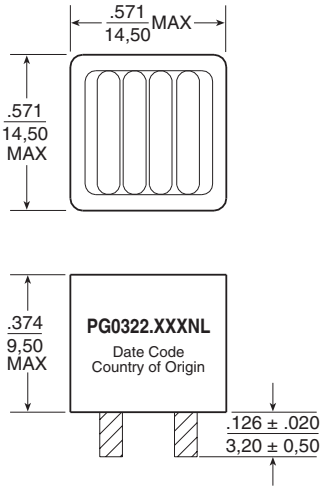


- **Height:** 9.5mm Max
- **Footprint:** 14.5mm x 14.5mm Max
- **Current Rating:** up to 60A
- **Inductance Range:** 0.25µH to 1.10µH

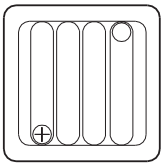
Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [1]

Part Number	Inductance[2] @Irated (µH TYP)	Irated[3] (A)	DCR (mΩ ±8%)	Inductance @0ADC (µH ±15%)	Saturation[4] Current Isat (A)	Heating[5] Current IDC (A)	Core Loss[6] Factor K1	Core Loss[6] Factor K2
PG0322.281NL	0.25	50	0.47	0.28	50	60	3.55e-11	17.6
PG0322.451NL	0.41	43	0.96	0.45	47	43	3.55e-11	20.2
PG0322.601NL	0.54	40	0.96	0.60	40	43	3.55e-11	26.9
PG0322.801NL	0.72	37	1.25	0.80	37	38	3.55e-11	27.9
PG0322.122NL	1.10	30	1.55	1.20	30	32	3.55e-11	34.3

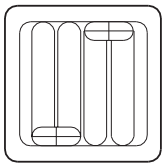
Mechanical



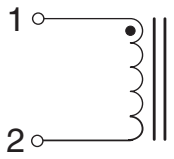
For Single Wire Assembly



For Double Wire Assembly



Schematic



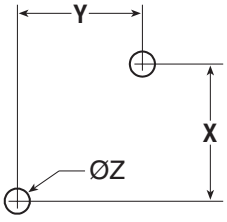
Weight (TYP) . . . . . .8.2 grams
Tray 100/tray

Dimensions: Inches / mm

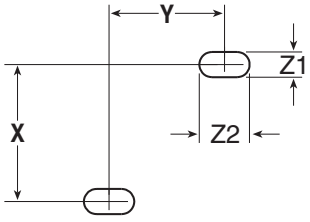
Unless otherwise specified, all tolerances are ± .010 / 0,25

Suggested Pad Layout

For Single Wire Assembly



For Double Wire Assembly



Pad Layout Dimensions (in./mm)

Part Number	X ±.039/1.0	Y ±.039/1.0	Z MAX	Z1 MAX	Z2 MAX
PG0322.281NL	.276/7,00	.295/7,50	–	.075/1,90	.114/2,90
PG0322.451NL	.276/7,00	.315/8,00	–	.059/1,50	.094/2,40
PG0322.601NL	.276/7,00	.315/8,00	–	.059/1,50	.094/2,40
PG0322.801NL	.295/7,50	.315/8,00	.063/1,60	–	–
PG0322.122NL	.295/7,50	.354/9,00	.063/1,60	–	–

Notes from Tables

1. The temperature of the component (ambient plus temperature rise) must be within the specified 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 5% (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 @ 100°C = $K1 * (f)^{1.6} * (K2\Delta I)^{2.36}$

   Where: Core Loss = in Watts

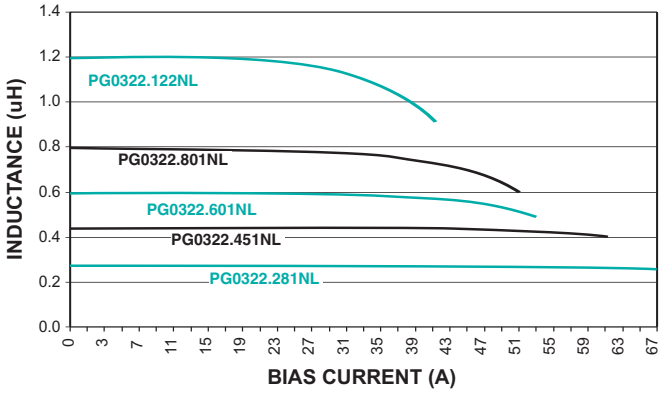
   f = switching frequency in kHz

   K1 & K2 = core loss factors

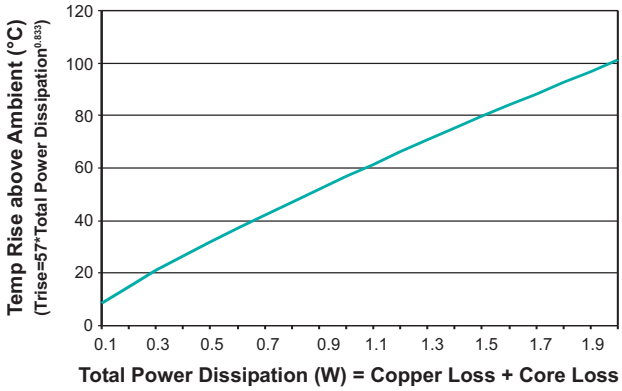
   ΔI = delta I across the component in Ampere

   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}.

Inductance vs Current Characteristics



Temp. Rise vs Power Dissipation



Core Loss vs Flux Density