

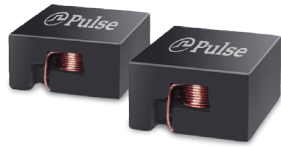


**THE DATASHEET OF  
PG0083.472NLT**



# SMT Power Inductors

Power Coils - PG0083 Series



- ⌚ Height: 4.2mm Max
- ⌚ Footprint: 6.8mm x 6.8mm Max
- ⌚ Current Rating: up to 17.5A
- ⌚ Inductance Range: 0.32μH to 3.76μH

## Electrical Specifications @ 25°C - Operating Temperature -40°C to +95°C<sup>1</sup>

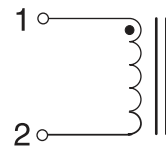
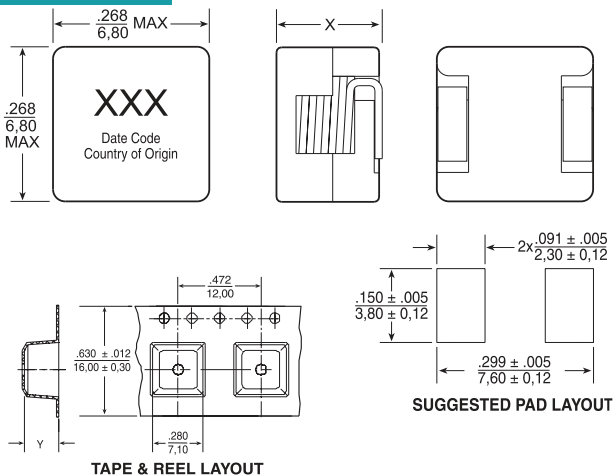
Part <sup>8</sup> Number	Inductance @ Irated <sup>2</sup> (μH TYP)	Irated <sup>3</sup> (A)	DCR (mΩ)		Inductance @0 A <sup>dc</sup> (μH±25%)	Saturation <sup>4</sup> Current ISAT (A)	Heating <sup>5</sup> Current I <sub>dc</sub> (A)	Core Loss <sup>6</sup> Factor	
			(TYP)	(MAX)				(K1)	(K2)
PG0083.401	0.32	17.5	3.0	3.2	0.4	27	17.5	2.25E-10	85.4
PG0083.601	0.48	15.0	4.5	4.8	0.6	21	15	2.25E-10	99.7
PG0083.102	0.8	12.0	6.6	7.2	1	17	12	2.25E-10	135.9
PG0083.182	1.44	8.0	15.6	16.0	1.8	13	8	2.25E-10	179.4
PG0083.232	1.84	7.0	17.5	18.0	2.3	11.5	7.5	2.25E-10	202.2
PG0083.332	2.64	5.5	26.6	27.5	3.3	9.5	5.8	2.25E-10	234.9
PG0083.472	3.76	4.5	36.6	38.0	4.7	8	4.5	2.25E-10	281.1

- Notes:**
- The temperature of the component (ambient plus temperature rise) must be within the specified 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.
  - 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<sub>dc</sub>, 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:  
 $Core\ Loss = K1 * (f)^{1.035} * (K2\Delta I)^{2.267}$   
 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
  - Unless otherwise specified, all testing is made at 100kHz, 0.1VAC.
  - Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PG0083.472 becomes PG0083.472T). Pulse complies to industry standard tape and reel specification EIA481

## Mechanical

## Schematic

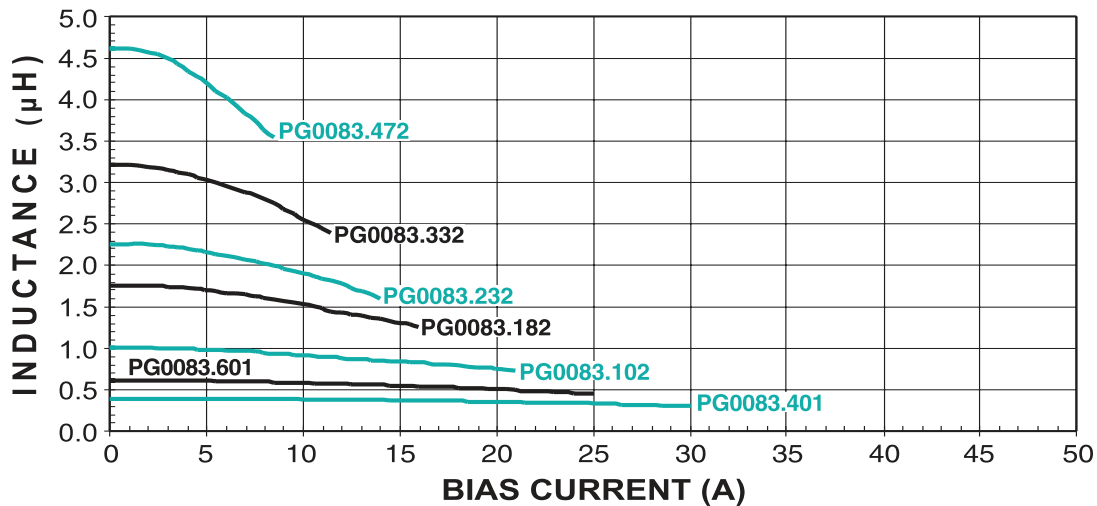
### PG0083



Weight ..... 1.0 grams  
 Tape & Reel ..... 1000/reel  
 T&R Height ..... 0.189/4,80  
 "Y" -in./mm  
 Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are:  $\pm \frac{0.10}{0.25}$

Part No.	"Max. Height "X" (in./MM)
PG0083.401	.165/4,20
PG0083.601	.165/4,20
PG0083.102	.165/4,20
PG0083.182	.157/4,00
PG0083.232	.157/4,00
PG0083.332	.157/4,00
PG0083.472	.157/4,00

## Inductance vs. Current Characteristics



### For More Information

#### Pulse Worldwide Headquarters

15255 Innovation Drive Ste 100  
San Diego, CA 92128  
U.S.A.

#### Pulse Europe

Pulse Electronics GmbH  
Am Rottland 12  
58540 Meinerzhagen  
Germany

#### Pulse China Headquarters

Pulse Electronics (ShenZhen) CO., LTD  
D708, Shenzhen Academy of  
Aerospace Technology,  
The 10th Keji South Road,  
Nanshan District, Shenzhen,  
P.R. China 518057

#### Pulse North China

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

#### Pulse South Asia

3 Fraser Street 0428  
DUO Tower  
Singapore 189352

#### Pulse North Asia

1F., No.111 Xiyuan Road  
Zhongli District  
Taoyuan City 32057  
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 6280 0080

Tel: 886 3 4356768  
Fax: 886 3 4356820

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