





SMT POWER INDUCTORS

Flat Coils - PG0083 and PG0137 Series



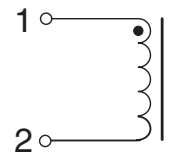
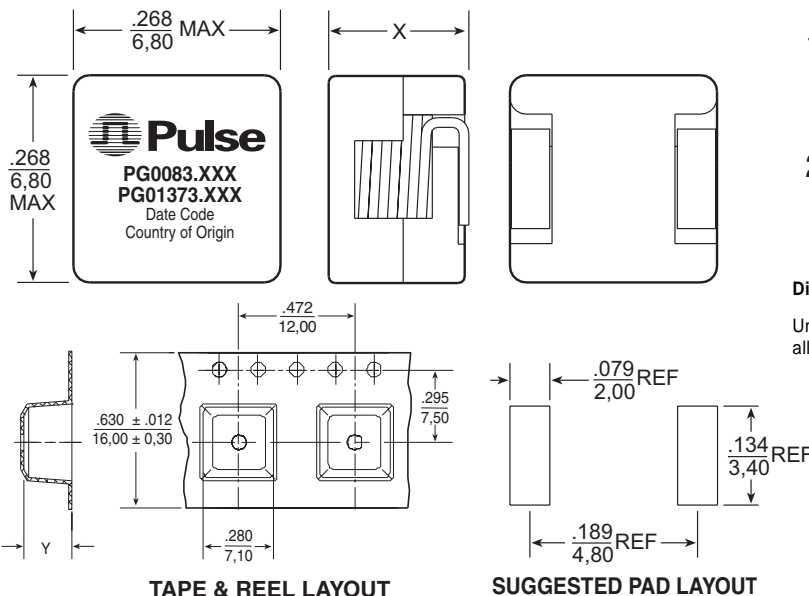
-  **Height:** 4.2mm Max (PG0083)
3.4mm Max (PG0137)
-  **Footprint:** 6.8mm x 6.8mm Max
-  **Current Rating:** up to 19A
-  **Inductance Range:** 0.09μH to 3.76μH

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C¹

Part Number	Inductance @ I _{rated} ² (μH TYP)	I _{rated} ³ (A)	DCR (mΩ)		Inductance @ 0A _{DC} (μH ±25%)	Saturation Current I _{SAT} ⁴ (A)	Heating Current I _{DC} ⁵ (A)	Core Loss ⁶ Factor	
			TYP	MAX				(K1)	(K2)
PG0083 SERIES									
PG0083.201	0.18	19	1.7	2.0	0.20	39.5	25	1.61E-9	58.4
PG0083.401	0.32	17	3.0	3.2	0.40	27	17.5	1.61E-9	83.4
PG0083.601	0.48	15	4.5	4.8	0.60	21	15	1.61E-9	97.3
PG0083.102	0.80	12	6.6	7.2	1.0	17	12	1.61E-9	132.7
PG0083.132	1.04	9.0	11.4	12.0	1.3	15.5	9.0	1.61E-9	146.0
PG0083.182	1.44	8.0	15.6	16.0	1.8	13	8.0	1.61E-9	175.2
PG0083.232	1.84	7.0	17.5	18.0	2.3	11.5	7.5	1.61E-9	197.5
PG0083.272	1.76	6.0	23.8	24.2	2.7	10.5	6.2	1.61E-9	207.5
PG0083.332	2.64	5.5	26.6	27.5	3.3	9.5	5.8	1.61E-9	229.4
PG0083.402	3.20	5.0	34.5	36.0	4.0	9.0	5.0	1.61E-9	253.9
PG0083.472	3.76	4.5	36.6	38.0	4.7	8.0	4.5	1.61E-9	274.5
PG0137 SERIES									
PG0137.101	0.09	18	2.5	3.0	0.10	34.5	18	1.43e-9	44.20
PG0137.251	0.23	16	4.5	5.0	0.25	21	16	1.43e-9	66.29
PG0137.501	0.45	12.5	7.5	8.0	0.50	14.5	12.5	1.43e-9	94.70
PG0137.801	0.72	10.5	10.7	12.0	0.80	11.5	10.5	1.43e-9	117.85
PG0137.112	0.99	7.0	18.0	19.0	1.10	10.5	7.0	1.43e-9	132.59
PG0137.152	1.35	6.0	20.7	22.0	1.50	9.0	6.0	1.43e-9	152.98

Mechanical

Schematic



Dimensions: Inches
mm
Unless otherwise specified,
all tolerances are ± .010
0,25

	PG0083	PG0137
Weight	1.0 grams	0.6 grams
Tape & Reel	1000/reel	1400/reel
T&R Height	0.189/4,80	0.150/3,80
("Y" - in./mm)		

Part No.	Max. Height "X" (in./mm)
PG0083.201	.165/4,20
PG0083.401	.165/4,20
PG0083.601	.157/4,00
PG0083.102	.157/4,00
PG0083.132	.157/4,00
PG0083.182	.157/4,00
PG0083.232	.157/4,00
PG0083.272	.157/4,00
PG0083.332	.157/4,00
PG0083.402	.157/4,00
PG0083.472	.157/4,00
PG0137.101	.134/3,40
PG0137.251	.134/3,40
PG0137.501	.130/3,30
PG0137.801	.130/3,30
PG0137.112	.126/3,20
PG0137.152	.126/3,20

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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 I_{rated} 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_{bc} , 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:

$$\text{Core Loss} = K1 * (f)^{0.5539} * (K2\Delta I)^{2.2355}$$

Where: Core Loss = in Watts

f = switching frequency in kHz

K1 & K2 = core loss factors

ΔI = delta I across the component in Ampere

$K2\Delta I$ = 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: PG0083.472T).

Inductance vs Current Characteristics

