PF0464.104NLT Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	PF0464.104NLT-DG
Manufacturer	Pulse Electronics
Manufacturer Product Number	PF0464.104NLT
Description	FIXED IND 100UH 540MA 505MOHM SM
Detailed Description	100 µH Shielded Inductor 540 mA 505mOhm Max Nonstandard

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
PF0464.104NLT	Pulse Electronics
Series:	Product Status:
PF0464NL	Active
Type:	Material - Core:
-	-
Inductance:	Tolerance:
100 µH	±20%
Current Rating (Amps):	Current - Saturation (Isat):
540 mA	540mA
Shielding:	DC Resistance (DCR):
Shielded	505mOhm Max
Q @ Freq:	Frequency - Self Resonant:
-	10.5MHz
Ratings:	Operating Temperature:
-	-40°C ~ 125°C
Inductance Frequency - Test:	Features:
100 kHz	-
Mounting Type:	Package / Case:
Surface Mount	Nonstandard
Supplier Device Package:	Size / Dimension:
-	0.283" L x 0.283" W (7.20mm x 7.20mm)
Height - Seated (Max):	
0.118" (3.00mm)	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8504.50.4000	

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- ***Height:*** *PF0464: 3mm Max - PF0465: 4mm Max*
- ***Footprint:*** *7.2mm x 7.2mm Max*
- ***Current Rating:*** *PF0464: up to 4.5A - PF0465: up to 3.5A*
- ***Inductance Range:*** *1.5µH to 100µH*

Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C[1,6]

Part[2,3] Number	Inductance @0ADC (µH ±20%)	Inductance @ Irated (µH TYP)	Irated[5] (A)	DCR (mΩ)		Saturation[6] Current I_{SAT} -20% (A)	Heating[7] Current IDC +40°C (A)	Core Loss[8] Factor (K2)	SFR (MHz)
				TYP	MAX				
PF0464NL Series									
PF0464.152NL	1.5	1.2	4.50	9	12	4.50	5.50	660	>40
PF0464.302NL	3.0	2.4	3.00	17	22	3.00	4.25	850	>40
PF0464.392NL *	3.9	3.1	2.60	19	25	2.60	3.80	990	>40
PF0464.502NL	5.0	4.0	2.40	24	30	2.40	3.55	1100	>40
PF0464.602NL	6.0	4.8	2.25	26	33	2.25	3.20	1300	>40
PF0464.732NL	7.3	5.8	2.10	36	45	2.10	3.10	1400	>40
PF0464.862NL *	8.6	6.9	1.85	38	48	1.85	2.95	1500	35
PF0464.103NL	10	8.0	1.70	41	52	1.70	2.90	1700	32
PF0464.123NL *	12	9.6	1.55	52	66	1.55	2.40	1800	26
PF0464.153NL	15	12.0	1.40	55	75	1.40	2.35	2000	24
PF0464.183NL	18	14.4	1.32	69	90	1.32	2.10	2200	22
PF0464.223NL	22	17.6	1.20	85	113	1.20	1.85	2500	21
PF0464.273NL *	27	21.6	1.05	104	132	1.05	1.70	2800	19
PF0464.333NL *	33	26.4	0.97	132	165	0.97	1.50	3000	18
PF0464.393NL *	39	31.2	0.86	142	180	0.86	1.45	3300	14
PF0464.473NL *	47	37.6	0.80	197	238	0.80	1.25	3600	14
PF0464.563NL *	56	44.8	0.73	216	270	0.73	1.15	3900	13
PF0464.683NL	68	54.4	0.65	235	300	0.65	1.10	4400	12
PF0464.823NL *	82	65.6	0.60	291	370	0.60	1.00	4800	11
PF0464.104NL *	100	80.0	0.54	401	505	0.54	0.85	5300	10.5

Notes:

1. Inductance is measure, where applicable, with both primary windings connected in series (2 to 5, with 3 and 4 shorted).
2. Leakage inductance is measured with both primary windings connected in series (where applicable) with all other windings shorted.

*Contact Pulse for availability

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Part[2,3] Number	Inductance @0ADC (μH ±20%)	Inductance @ Irated (μH TYP)	Irated[5] (A)	DCR (mΩ) TYP	DCR (mΩ) MAX	Saturation[6] Current I_{SAT} -20% (A)	Heating[7] Current IDC +40°C (A)	Core Loss[8] Factor (K2)	SFR (MHz)
PF0465NL Series									
PF0465.332NL	3.3	2.6	3.50	16	20	3.50	4.65	790	>40
PF0465.502NL	5.0	4.0	2.90	19	24	2.90	4.10	970	>40
PF0465.622NL	6.2	5.0	2.50	21	26	2.50	3.90	1100	>40
PF0465.732NL	7.3	5.8	2.30	25	31	2.30	3.50	1200	>40
PF0465.862NL *	8.6	6.9	2.20	27	34	2.20	3.30	1300	35
PF0465.103NL	10	8.0	2.00	29	37	2.00	3.20	1400	32
PF0465.123NL	12	9.6	1.70	39	50	1.70	2.80	1600	26
PF0465.153NL	15	12.0	1.60	44	55	1.60	2.60	1700	24
PF0465.183NL *	18	14.4	1.50	62	78	1.50	2.25	1900	22
PF0465.223NL	22	17.6	1.30	68	86	1.30	2.10	2100	21
PF0465.273NL	27	21.6	1.20	75	95	1.20	2.00	2300	19
PF0465.333NL *	33	26.4	1.10	94	118	1.10	1.75	2500	18
PF0465.393NL	39	31.2	1.00	101	128	1.00	1.70	2800	17
PF0465.473NL	47	37.6	0.95	112	140	0.95	1.60	3000	14
PF0465.563NL *	56	44.8	0.85	154	195	0.85	1.35	3300	13
PF0465.683NL	68	54.4	0.75	188	234	0.75	1.25	3700	12
PF0465.823NL *	82	65.6	0.70	261	324	0.70	1.05	4000	11
PF0465.104NL	100	80.0	0.65	286	350	0.65	1.00	4500	10.5

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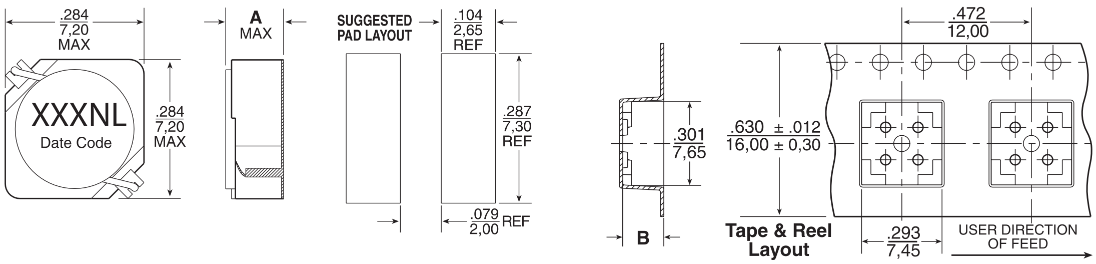
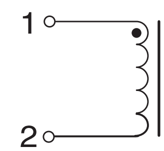
Mechanicals

Schematic

PF046X.XXXNL





	PF0464	PF0465
Weight:	0.5 grams	0.7 grams
Tape & Reel	1200/reel	900/reel
"A" (height - in./mm)	0.118/3.00	0.158/4.00

	PF0464	PF0465
"B" height: - (in./mm)	0.5 grams	0.7 grams

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified, all tolerances are: $\pm\frac{.010}{0,25}$

Notes:

1. Unless otherwise specified, all testing is made at 100kHz, 0.1VAC.
2. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e P1166.102NL becomes P1166.102NLT). Pulse complies with industry standard Tape and Tape & Reel specification EIA481.
3. The "**NL**" suffix indicates an RoHS-compliant part numer. Non-NL suffixed parts are not necessarily RoHS compliant, but are electrically and mechanically equivalent to NL versions. If a part number does not have the "**NL**" version, but an RoHS compliant version is required, please contact Pulse for availability.
4. Temperature of the component (ambient plus temperature rise) must be within specified operating temperature range.
5. The rated current (Irated) as listed is either the saturation current or the heating current depending on which value is lower.
6. The saturation current, Isat, is the current at which the component inductance drops by the indicated percentage (typical) at an ambient temperature of 25C. 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.
7. The heating current, Idc, is the DC current required to raise the component temperature by the indicated delta (approximately). The heating current isdetermined 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.
8. In high volt*time (Et) or ripple current applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total loss (or temperature rise) for a given application, both copper losses and core losses should be taken into account.

Estimated Temperature Rise:

Trise = $[\text{Total loss (mW)} / \text{K0}]^{.833}$ (°C)
Total Loss = Copper loss + Core loss (mW)
Copper loss = I_{RMS}^2 x DCR (Typical) (mW)
Irms = $[I_{DC}^2 + \Delta I^2/12]^{1/2}$ (A)
Core loss = K1 x f $(\text{kHz})^{1.23}$ x Bac $(\text{Ga})^{2.38}$ (mW)
Bac (peak to peak flux density) = K2 x ΔI (Ga)
[= K2/L (µH) x Et (V-µSec) (Ga)]
where f varies between 25kHz and 1MHz, and Bac is less than 2500 Gauss.
K2 is a core size and winding dependent value and is given for each p/n in the proceeding datasheets. K0 & K1 are platform and material dependant constants and are given in the table below for each platform.

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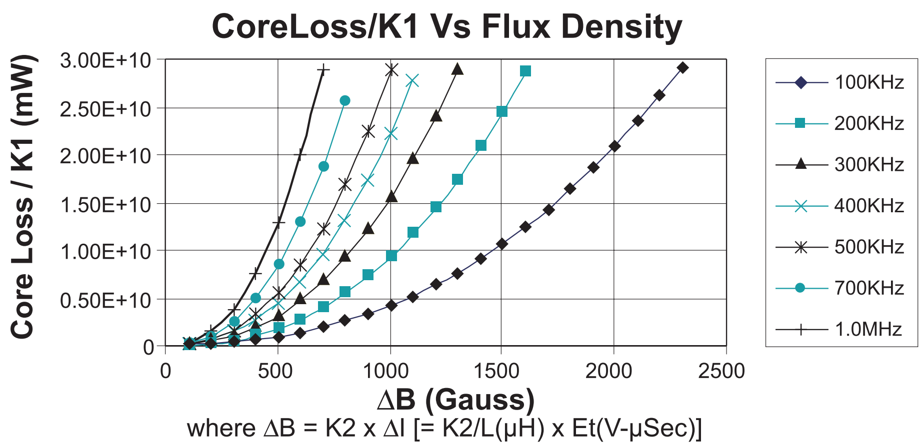
Part No.	Trise Factor (K0)	Core Loss Factor (K1)
PG0085/86	2.3	5.29E-10
PG0087	5.8	15.2E-10
PG0040/41	0.8	2.80E-10
P1174	0.8	6.47E-10
PF0601	4.6	14.0E-10
PF0464	3.6	24.7E-10
PF0465	3.6	33.4E-10
P1166	1.9	29.6E-10
P1167	2.1	42.2E-10
PF0560NL	5.5	136E-10
P1168/69	4.8	184E-10
P1170/71	4.3	201E-10
P1172/73	5.6	411E-10
PF0552NL	8.3	201E-10
PF0553NL	7.1	411E-10



Take note that the component's temperature rise 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.

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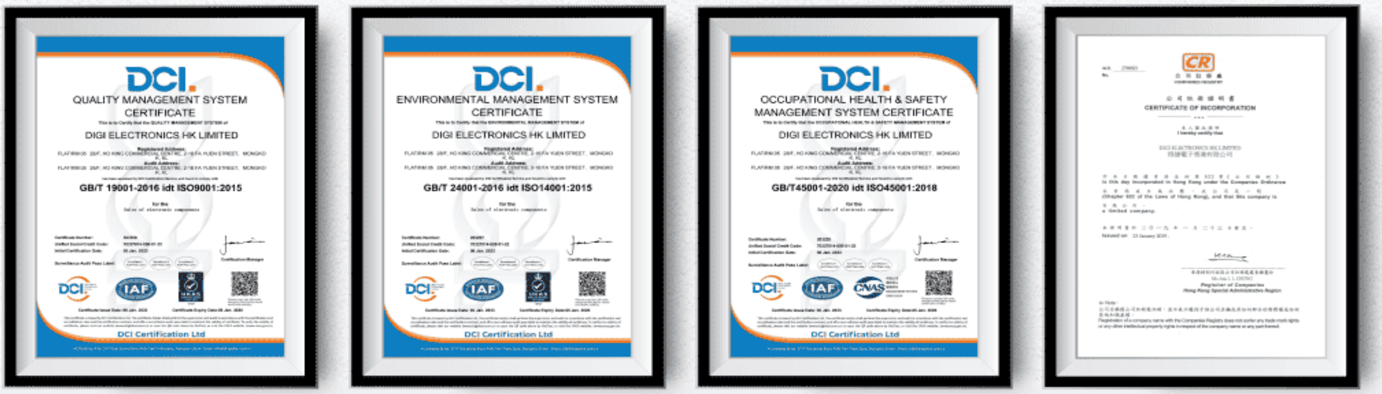

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