

PF0465.393NLT Datasheet



DiGi Electronics Part Number	PF0465.393NLT-DG
Manufacturer	Pulse Electronics
Manufacturer Product Number	PF0465.393NLT
Description	FIXED IND 39UH 1A 128 MOHM SMD
Detailed Description	39 μ H Shielded Inductor 1 A 128mOhm Max Nonstandard

<https://www.DiGi-Electronics.com>



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

PF0465.393NLT

Series:

PF0465NL

Type:

-

Inductance:

39 μ H

Current Rating (Amps):

1 A

Shielding:

Shielded

Q @ Freq:

-

Ratings:

-

Inductance Frequency - Test:

100 kHz

Mounting Type:

Surface Mount

Supplier Device Package:

-

Height - Seated (Max):

0.205" (5.20mm)

Manufacturer:

Pulse Electronics

Product Status:

Active

Material - Core:

-

Tolerance:

\pm 20%

Current - Saturation (Isat):

1A

DC Resistance (DCR):

128mOhm Max

Frequency - Self Resonant:

17MHz

Operating Temperature:

-40°C ~ 125°C

Features:

-

Package / Case:

Nonstandard

Size / Dimension:

0.283" L x 0.283" W (7.20mm x 7.20mm)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8504.50.4000

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

SMT Power Inductors

Shielded Drum Core - PF0464NL/PF0465NL Series



- ⌚ **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:** 1.5 μ H to 100 μ H

Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C^{1,6}

Part ^{2,3} Number	Inductance @OADC (μ H \pm 20%)	Inductance @ Irated (μ H TYP)	Irated ⁵ (A)	DCR (m Ω)		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:

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

*Contact Pulse for availability

SMT Power Inductors

Shielded Drum Core - PF0464NL/PF0465NL Series



Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C^{1,6}

Part ^{2,3} Number	Inductance @OADC ($\mu\text{H} \pm 20\%$)	Inductance @ Irated ($\mu\text{H TYP}$)	Irated ⁵ (A)	DCR (m Ω)		Saturation ⁶ Current I _{SAT} -20% (A)	Heating ⁷ Current IDC +40°C (A)	Core Loss ⁸ Factor (K2)	SFR (MHz)
				TYP	MAX				
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

SMT Power Inductors

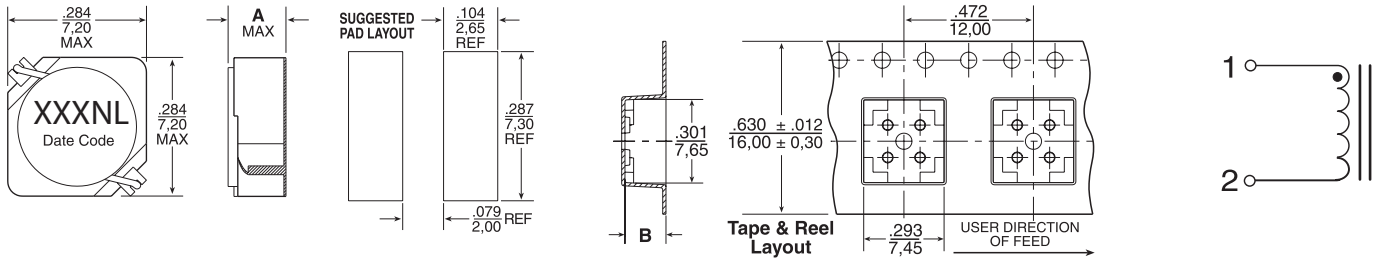
Shielded Drum Core - PF0464NL/PF0465NL Series



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	0.7

Dimensions: Inches
mm
Unless otherwise specified,
all tolerances are: ± ^{0.10}/_{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 number. 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 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.

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:

$$Trise = [Total\ loss\ (mW) / K0]^{.833} (^{\circ}C)$$

$$Total\ Loss = Copper\ loss + Core\ loss\ (mW)$$

$$Copper\ loss = I_{RMS}^2 \times DCR\ (Typical)\ (mW)$$

$$I_{RMS} = [I_{DC}^2 + \Delta I^2 / 12]^{1/2}\ (A)$$

$$Core\ loss = K1 \times f\ (kHz)^{1.25} \times B_{ac}\ (Ga)^{2.38}\ (mW)$$

$$B_{ac}\ (peak\ to\ peak\ flux\ density) = K2 \times \Delta I\ (Ga)$$

$$[= K2/L\ (\mu H) \times Et\ (V-\mu Sec)\ (Ga)]$$

where f varies between 25kHz and 1MHz, and Bac is less than 2500 Gauss.

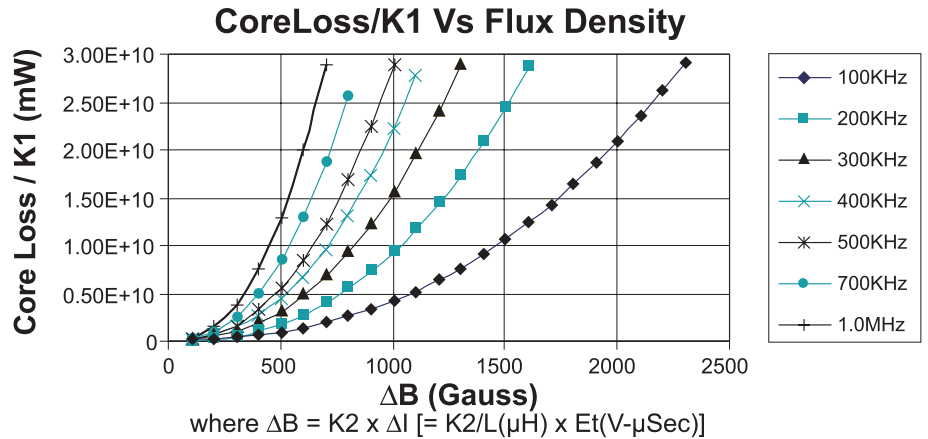
K2 is a core size and winding dependent value and is given for each p/n in the preceding datasheets. K0 & K1 are platform and material dependant constants and are given in the table below for each platform.

SMT Power Inductors

Shielded Drum Core - PF0464NL/PF0465NL Series



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.

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

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2019. Pulse Electronics, Inc. All rights reserved.

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we stricly control the quality of products and services. Welcome your RFQ to

Email: Info@DiGi-Electronics.com



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.