

High Reliability Power Inductors ML590PNB



- High current, low DCR shielded power inductors
- High temperature materials allow operation in ambient temperatures up to 155°C

Core material Ferrite

Terminations Matte tin over nickel over phos bronze.

Weight: 2.1 g – 3.7 g

Ambient temperature –55°C to +105°C with Irms current

Maximum part temperature +155°C (ambient + temp rise).

Storage temperature Component: –55°C to +155°C.
Tape and reel packaging: –55°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Enhanced crush-resistant packaging 500/13" reel; Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 6.6 mm pocket depth

Part number ¹	Inductance ² (µH)	DCR ³ (mOhms)		SRF (MHz) ⁴		Isat (A) ⁵			Irms (A) ⁶	
		typ	max	min	typ	10% drop	20% drop	30% drop	20°C rise	40°C rise
ML590PNB102NLZ	1.0 ±30%	5.8	6.5	70	100	19.12	21.18	22.76	6.00	8.00
ML590PNB152NLZ	1.5 ±30%	8.8	9.8	56	80.0	14.44	16.40	17.64	5.30	7.60
ML590PNB222NLZ	2.2 ±30%	11.5	12.8	39	55.0	12.32	14.00	15.08	5.20	7.30
ML590PNB332NLZ	3.3 ±30%	12.6	14.0	29	42.0	10.88	12.22	13.12	5.00	7.00
ML590PNB472MLZ	4.7 ±20%	13.9	15.5	27	38.0	9.92	11.10	12.00	4.50	7.00
ML590PNB562MLZ	5.6 ±20%	14.9	16.6	21	30.0	8.54	9.60	10.38	4.00	6.40
ML590PNB682MLZ	6.8 ±20%	16.6	18.5	19.0	27.0	7.80	8.80	9.44	3.80	5.90
ML590PNB822MLZ	8.2 ±20%	20.2	22.5	18.0	26.0	6.44	7.38	7.98	3.40	4.80
ML590PNB103MLZ	10 ±20%	21.5	23.9	15.0	22.0	6.00	6.92	7.48	3.00	4.00
ML590PNB123MLZ	12 ±20%	24.5	27.3	14.0	20.0	5.68	6.56	7.08	2.80	3.70
ML590PNB153MLZ	15 ±20%	30.7	34.2	12.6	18.0	5.34	6.04	6.54	2.60	3.50
ML590PNB183MLZ	18 ±20%	35.4	39.4	11.2	16.0	4.82	5.54	6.00	2.50	3.30
ML590PNB223MLZ	22 ±20%	36.6	40.7	10.5	15.0	4.42	5.04	5.44	2.30	3.10
ML590PNB273MLZ	27 ±20%	51.3	57.0	9.0	13.0	3.78	4.32	4.68	2.10	2.90
ML590PNB333MLZ	33 ±20%	54.9	61.0	8.7	12.4	3.50	4.00	4.34	2.00	2.70
ML590PNB393MLZ	39 ±20%	58.0	64.5	8.4	12.0	3.32	3.80	4.14	1.90	2.60
ML590PNB473MLZ	47 ±20%	80.1	89.0	8.0	11.6	2.84	3.26	3.54	1.85	2.50
ML590PNB563MLZ	56 ±20%	82.5	91.7	7.3	10.5	2.64	3.04	3.28	1.75	2.40
ML590PNB683MLZ	68 ±20%	94.5	105.0	7.0	10.0	2.46	2.82	3.04	1.70	2.30
ML590PNB823MLZ	82 ±20%	131.6	146.3	6.0	8.6	2.24	2.54	2.74	1.60	2.20
ML590PNB104MLZ	100 ±20%	141.8	157.6	5.5	7.8	2.06	2.34	2.54	1.50	2.10
ML590PNB124KLZ	120 ±10%	193.3	214.8	4.8	6.8	1.84	2.08	2.28	1.38	1.85
ML590PNB154KLZ	150 ±10%	215.4	239.4	4.5	6.4	1.64	1.90	2.06	1.20	1.66
ML590PNB184KLZ	180 ±10%	254.2	282.5	4.3	6.1	1.46	1.70	1.84	1.14	1.58
ML590PNB224KLZ	220 ±10%	314.1	349.0	3.9	5.5	1.30	1.48	1.60	1.00	1.42
ML590PNB274KLZ	270 ±10%	368.8	409.8	3.0	4.3	1.18	1.38	1.48	0.90	1.45
ML590PNB334KLZ	330 ±10%	481.3	534.8	2.8	4.0	1.04	1.20	1.30	0.84	1.16
ML590PNB394KLZ	390 ±10%	517.5	575.0	2.5	3.6	1.00	1.16	1.28	0.78	1.08
ML590PNB474KLZ	470 ±10%	721.2	801.4	2.1	3.0	0.906	1.00	1.10	0.70	0.96
ML590PNB564KLZ	560 ±10%	773.1	859.0	2.0	2.8	0.872	0.980	1.02	0.64	0.88
ML590PNB684KLZ	680 ±10%	867.6	964.0	1.8	2.6	0.782	0.886	0.956	0.58	0.80
ML590PNB824KLZ	820 ±10%	1158	1287	1.7	2.5	0.692	0.784	0.854	0.53	0.73
ML590PNB105KLZ	1000 ±10%	1273	1415	1.6	2.4	0.588	0.672	0.726	0.48	0.68

- When ordering, please specify **testing** code:

ML590PNB824KLZ

Testing: Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

T = Screening per MIL-STD-981

U = Screening per EEE-INST-002

F = Screening per ESCC 3201

All screening performed to the document's latest revision

Custom screening also available

- Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
- DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
- SRF measured using an Agilent/HP 8753D network analyzer.
- DC current at 25°C that causes the specified inductance drop from its value without current.
- Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
- Electrical specifications at 25°C. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Coilcraft CPS

CRITICAL PRODUCTS & SERVICES

© Coilcraft, Inc. 2017

1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

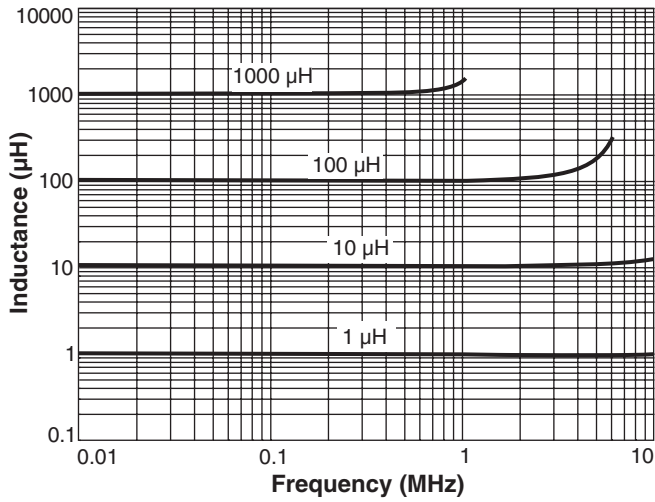
Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document ML599-1 Revised 08/10/17

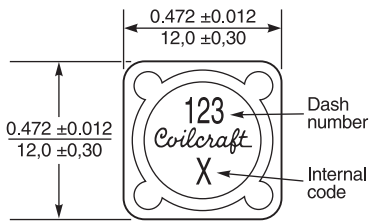
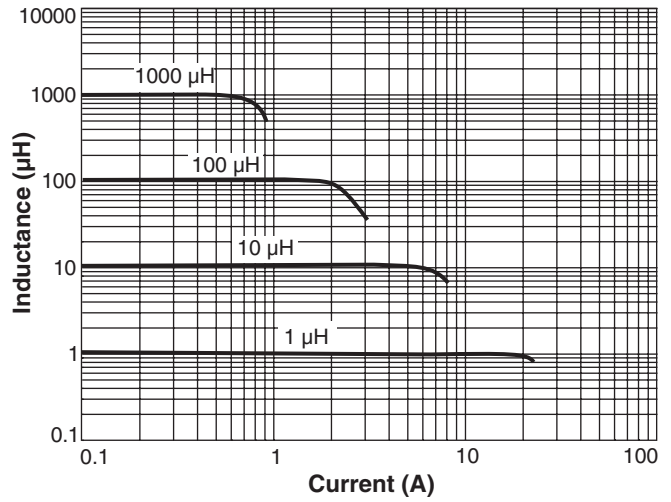
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

ML590PNB Series

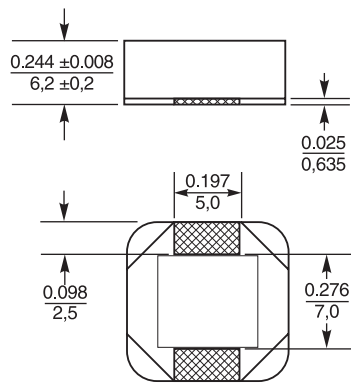
Typical L vs Frequency



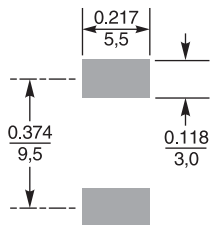
Typical L vs Current



Parts manufactured prior to September 2011 may have a different part marking.



Suggested Land Pattern



Dimensions are in $\frac{\text{inches}}{\text{mm}}$



1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document ML599-2 Revised 08/10/17

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.