IHLP® Automotive Inductors, Low DCR Series



LINKS TO ADDITIONAL RESOURCES

Product Page | 3D Models | Calculators

FEATURES

- 10.8 mm x 10.16 mm x 4.0 mm package
- Magnetically shielded metal construction
- Optimized for low DCR for up to 20 % reduction in DC power losses over other IHLP series
- AEC-Q200 qualified
- Polarity marking available for EMI sensitive applications (see “EP” package code below for more information)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb-free

RoHS COMPLIANT

HALOGEN FREE

APPLICATIONS

- Engine and transmission control units
- DC/DC converters for infotainment, navigation systems, lighting
- Noise suppression and filtering
- LED drivers

STANDARD ELECTRICAL SPECIFICATIONS

PART NUMBER	L_0 INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A (µH)	DCR TYP. 25 °C (mΩ)	DCR MAX. 25 °C (mΩ)	HEAT RATING CURRENT DC TYP. (A) (1)	SATURATION CURRENT DC TYP. (A) (2)
IHLP4040DZE_R19M1A	0.19	0.70	0.80	40	46
IHLP4040DZE_R24M1A	0.24	0.85	0.95	33	44
IHLP4040DZE_R36M1A	0.36	1.05	1.15	32	30
IHLP4040DZE_R47M1A	0.47	1.53	1.68	30	30
IHLP4040DZE_R56M1A	0.56	1.61	1.80	32	22
IHLP4040DZE_R78M1A	0.78	1.80	1.90	27	22
IHLP4040DZE_1R0M1A	1.0	2.30	2.50	25	20
IHLP4040DZE_1R8M1A	1.8	4.50	5.00	17	16
IHLP4040DZE_2R0M1A	2.0	5.20	5.80	16	14
IHLP4040DZE_4R7M1A	4.7	12.9	14.2	9.5	7.6
IHLP4040DZE_6R8M1A	6.8	17.5	19.3	9.0	7.5
IHLP4040DZE_100M1A	10	27.8	30.5	7.5	7.1
IHLP4040DZE_150M1A	15	40.9	45.0	6.25	6.0
IHLP4040DZE_180M1A	18	46.40	51.90	5.6	4.6
IHLP4040DZE_220M1A	22	60.4	66.0	5.0	4.5
IHLP4040DZE_330M1A	33	87.5	94.5	4.4	4.0
IHLP4040DZE_470M1A	47	132.0	145.0	3.3	3.0
IHLP4040DZE_101M1A	100	249.0	270.0	2.5	2.25

Notes

- All test data is referenced to 25 °C ambient
- Operating temperature range -55 °C to +125 °C
- The part temperature (ambient + temp. rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application
- Rated operating voltage (across inductor) = 50 V (40 V max. for 100 µH value)
- Moisture Sensitivity Level (MSL) = 1 floor life - unlimited
- Resistance to solder heat: 260 °C for 30 s (3 times max. through reflow)

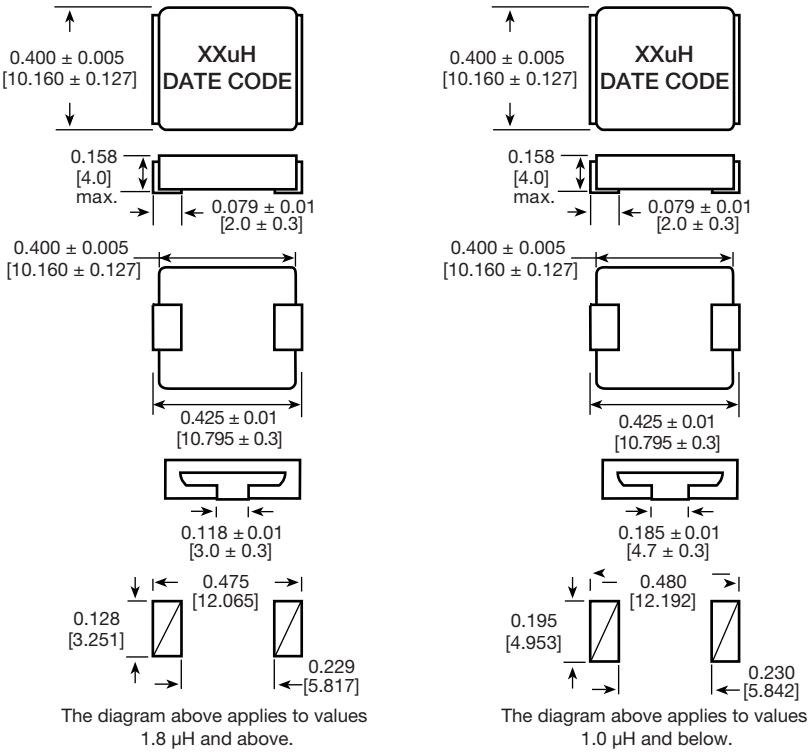
(1) DC current (A) that will cause an approximate ΔT of 40 °C

(2) DC current (A) that will cause L_0 to drop approximately 20 %

For technical questions, contact: magnetics@vishay.com

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DIMENSIONS in inches [millimeters]



The diagram above applies to values 1.8 µH and above.

The diagram above applies to values 1.0 µH and below.

DESCRIPTION

IHLP-4040DZ-1A	2.0 µH	± 20 %	EK	e3
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER

I H L P	4 0 4 0 D Z	E K	2 R 0	M	1 A
PRODUCT FAMILY	SIZE	PACKAGE CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	SERIES
		EK = tape and reel	**2R0** = 2.0 µH	**M** = ± 20 %	

PACKAGE CODE OPTIONS

EK = tape and reel packaging (1000 pieces on 13-inch reel)

EE = tape and reel packaging (900 pieces on 13-inch reel)

ER = tape and reel packaging (500 pieces on 13-inch reel)

EP = tape and reel packaging (1000 pieces on 13-inch reel), includes polarity part marking

Notes

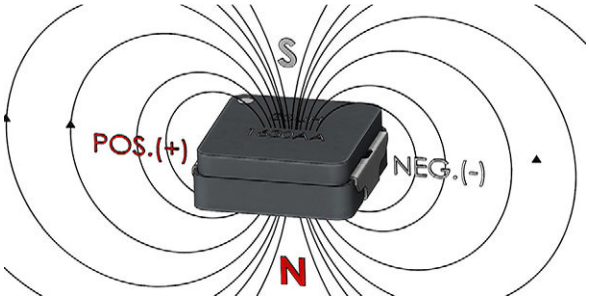
- 1000 piece reels for IHLP4040DZ models contains tape pitch change
- For additional packaging details see "Packaging Methods"

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MAGNETIC FIELD

CONFIGURATION OF THE "B" (FLUX) FIELD FOR THE IHLP WITH POLARITY MARKING



When a positive (+) voltage is placed on the terminal marked with the polarity dot and the opposite terminal is negative (-), the resulting current flow will create a magnetic south pole on the top side of the IHLP.

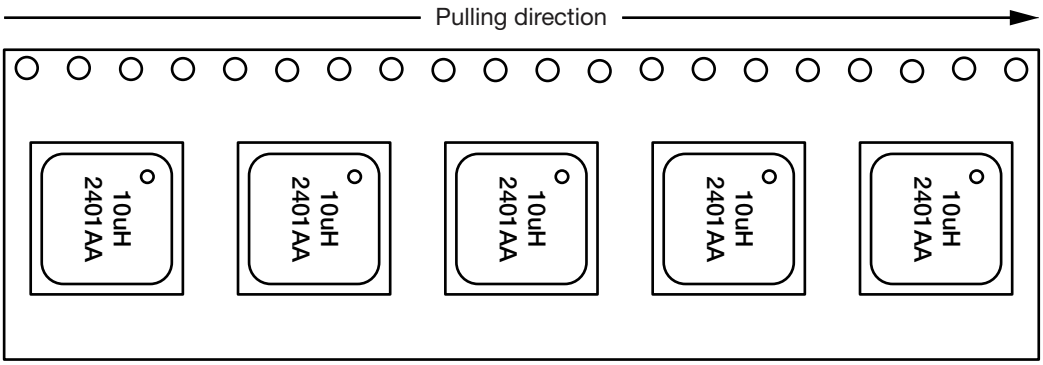
For the IHLP-4040DZ-1A series, the polarity mark also indicates the "start" or "inside" lead of the winding.

Observing the polarity orientation when mounting the inductor will ensure the most consistent EMI reduction performance.

Drawing is for illustrative purposes only. The flux leakage from the inductor is minimal.

PART MARKING / POCKET TAPE ORIENTATION

Part marking and tape orientation for IHLP with polarity marking

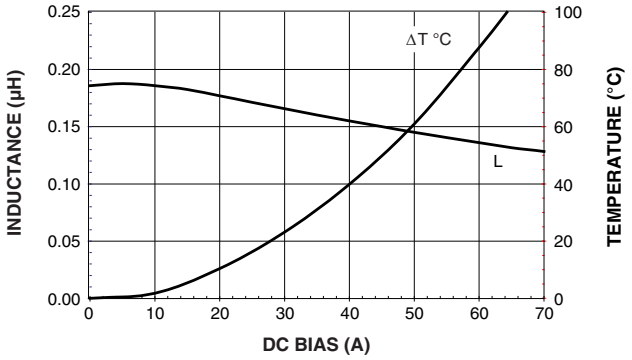


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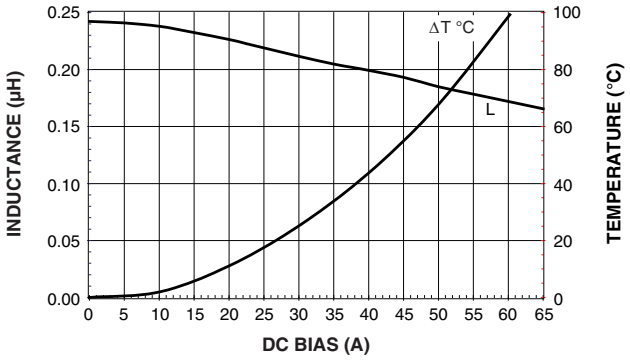
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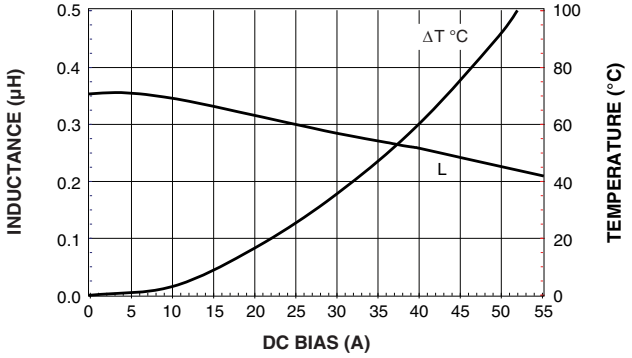
0.19 µH



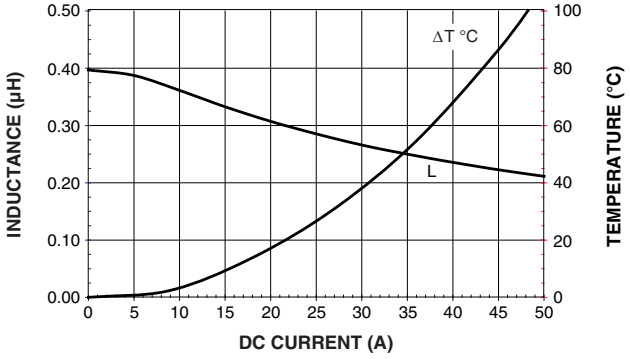
0.24 µH



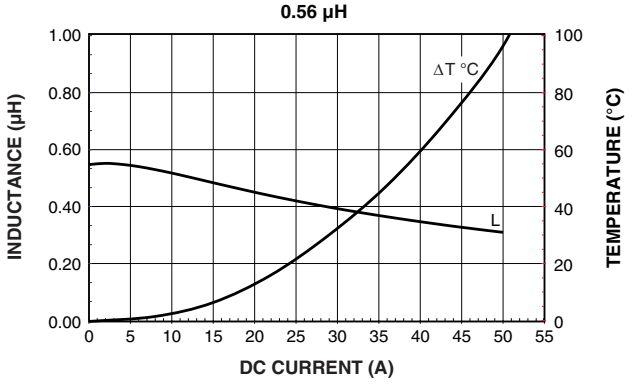
0.36 µH



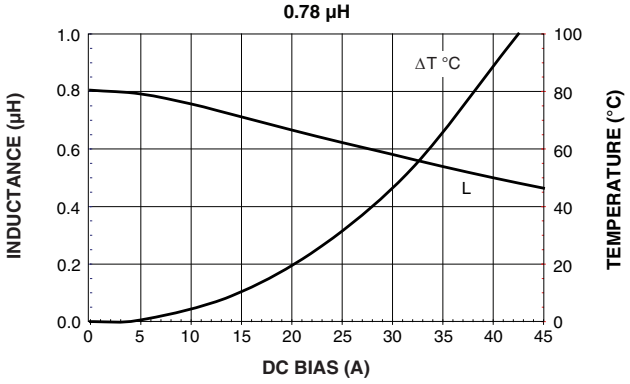
0.47 µH



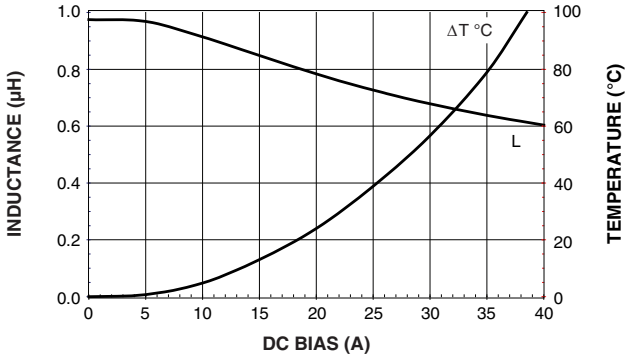
0.56 µH



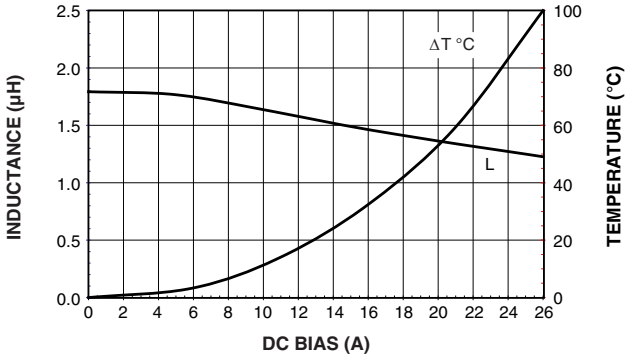
0.78 µH



1.0 µH



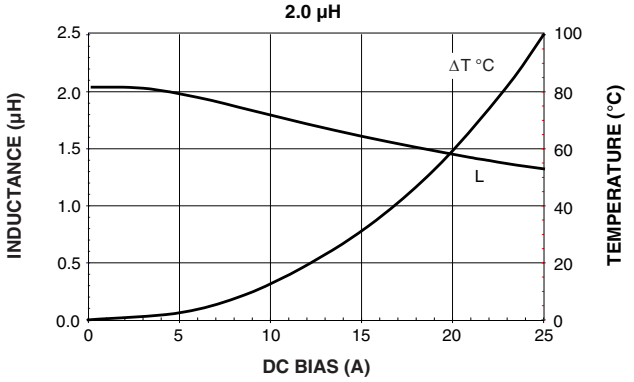
1.8 µH



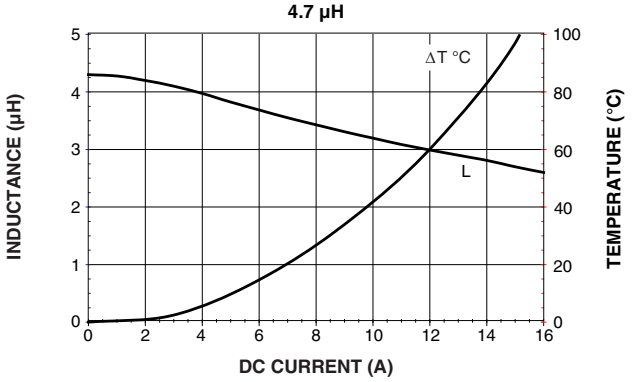
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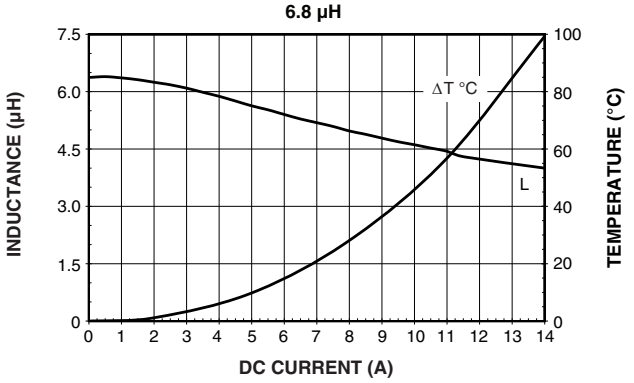
2.0 µH



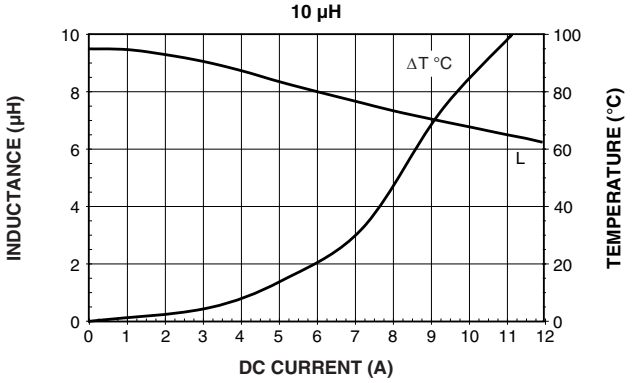
4.7 µH



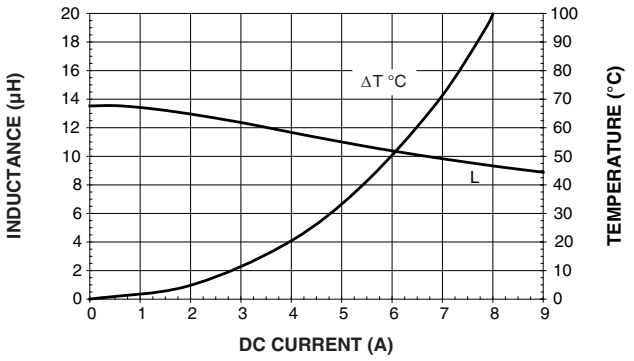
6.8 µH



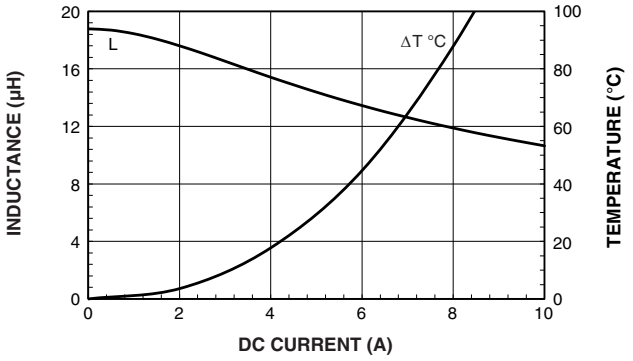
10 µH



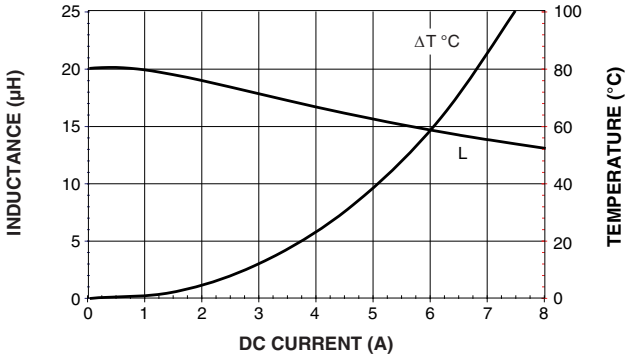
15 µH



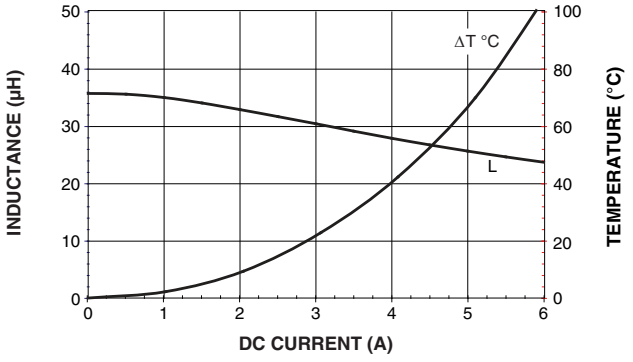
18 µH



22 µH



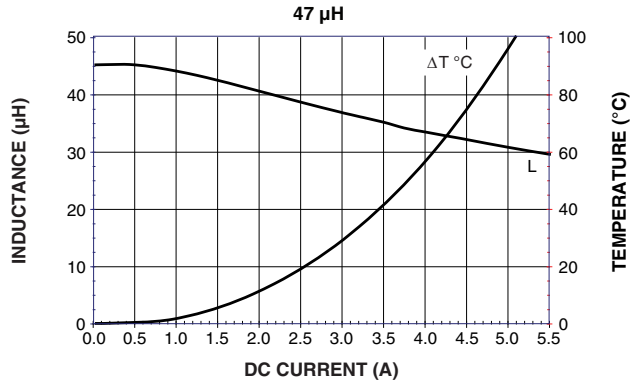
33 µH

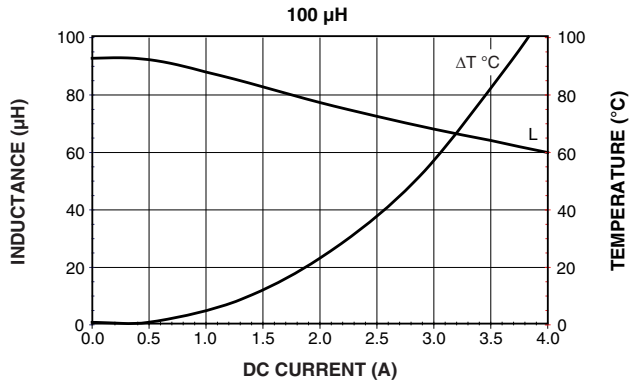


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