IHLP® Automotive Inductors, High Temperature (155 °C) Series



FEATURES

- High temperature, up to 155 °C
- 10.8 mm x 10.2 mm x 4.0 mm SMD package
- Magnetically shielded construction
- Metal alloy core
- 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 GREEN (5-2008)

LINKS TO ADDITIONAL RESOURCES

3D Models | Design Tools | Product Page

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	INDUCTANCE ± 20 % (µH) AT 0 A	DCR 25 °C (mΩ)		HEAT RATING CURRENT DC TYP. (A) (1)	SATURATION CURRENT DC TYP. (A) (2)		SRF TYP. (MHz)
		TYP.	MAX.		20 % DROP	30 % DROP	
IHLP4040DZE_R47M5A	0.47	1.55	1.66	35.5	28.5	38.0	72.1
IHLP4040DZE_R68M5A	0.68	2.17	2.32	35.0	24.0	32.0	42.5
IHLP4040DZE_1R0M5A	1.0	2.87	3.07	23.5	24.0	32.0	37.2
IHLP4040DZE_1R5M5A	1.5	4.20	4.50	22.0	17.9	24.2	32
IHLP4040DZE_2R2M5A	2.2	8.15	8.76	15.0	12.0	16.2	30.1
IHLP4040DZE_3R3M5A	3.3	11	11.81	11.0	12.0	16.2	25.5
IHLP4040DZE_4R7M5A	4.7	14.3	15.32	9.8	9.2	12.4	20.1
IHLP4040DZE_5R6M5A	5.6	16.5	17.60	9.3	9.0	12.2	16.3
IHLP4040DZE_6R8M5A	6.8	20.9	22.36	8.0	9.0	12.2	16.3
IHLP4040DZE_100M5A	10	30.9	33.06	6.5	8.5	11.5	11.5
IHLP4040DZE_150M5A	15	47	50.29	5.1	7.7	10.4	10.4
IHLP4040DZE_220M5A	22	70.5	75.44	4.1	6.4	8.6	8.3
IHLP4040DZE_330M5A	33	110	117.7	3.7	4.2	5.7	5.79
IHLP4040DZE_470M5A	47	167	178	3.1	4.1	5.5	5.22
IHLP4040DZE_680M5A	68	240	252	2.4	3.5	4.7	4.02

Notes

- All test data is referenced to 25 °C ambient
- Test condition: 100 kHz, 0.25 V
- Operating temperature range -55 °C to +155 °C
- The part temperature (ambient + temp. rise) should not exceed 155 °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) = 75 V

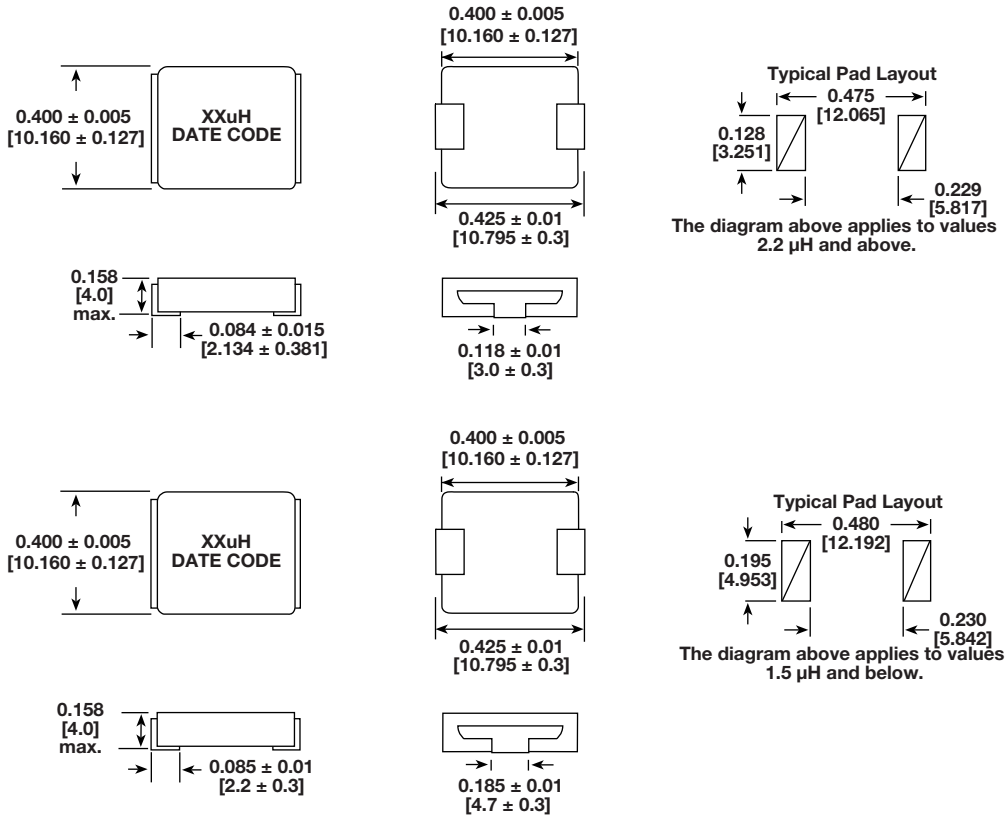
(1) DC current (A) that will cause an approximate ΔT of 40 °C

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

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DIMENSIONS in inches [millimeters]



DESCRIPTION

IHLP-4040DZ-5A	4.7 µH	± 20 %	TAPE AND REEL	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	4 R 7	M	5 A
PRODUCT FAMILY	SIZE	PACKAGE CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	SERIES
		EK = tape and reel	**4R7** = 4.7 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

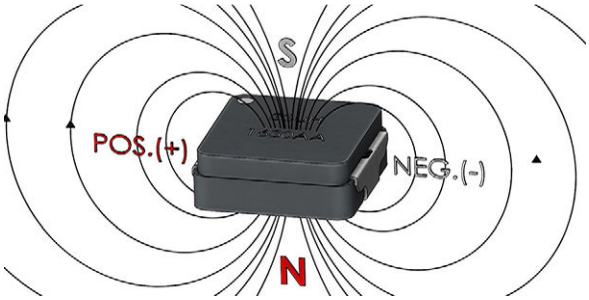
- 1000 piece reels for IHLP4040DZ models contains tape pitch change
- For additional packaging details see "Packaging Methods"

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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.

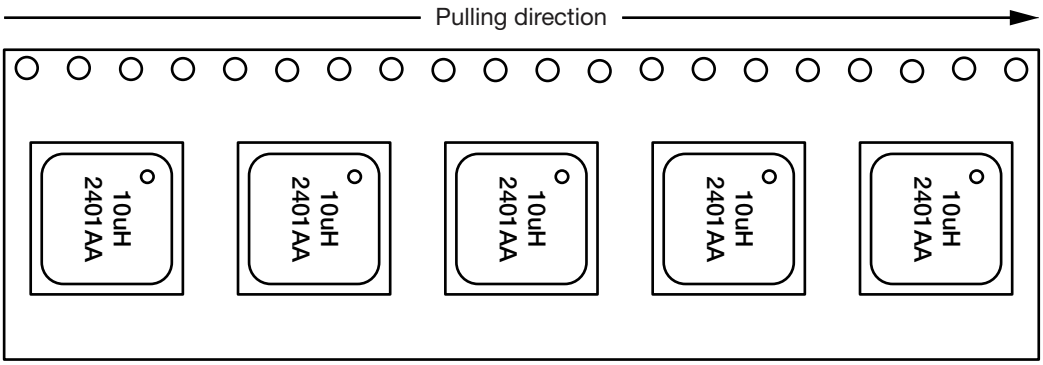
For the IHLP-4040DZ-5A series, the polarity mark also indicates the "start" or "inside" lead of the winding.

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

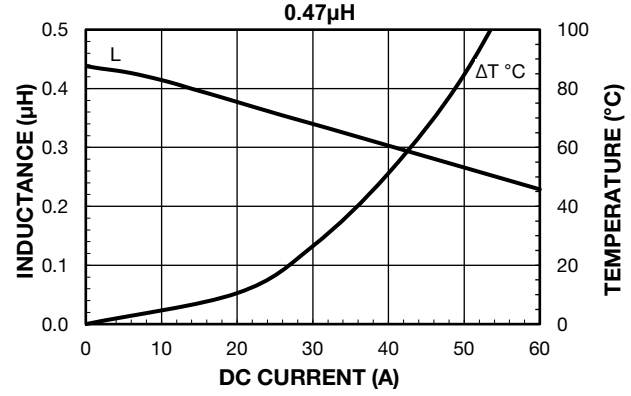


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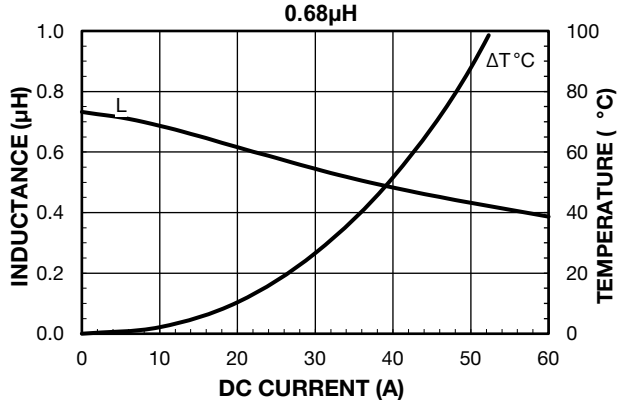
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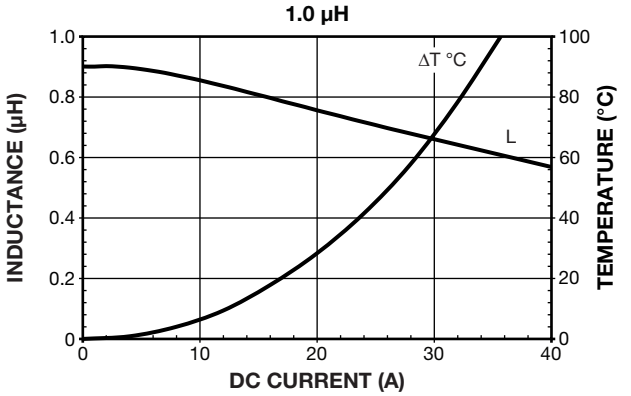
0.47µH



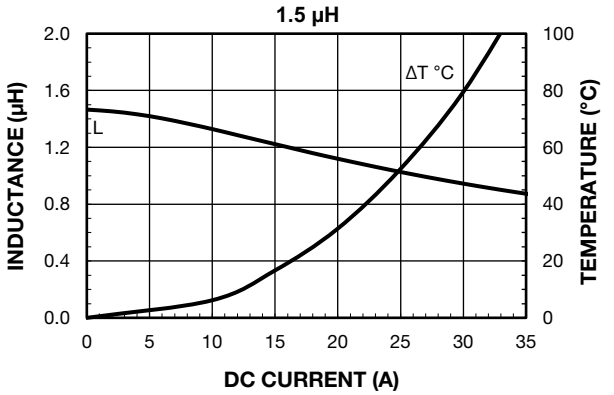
0.68µH



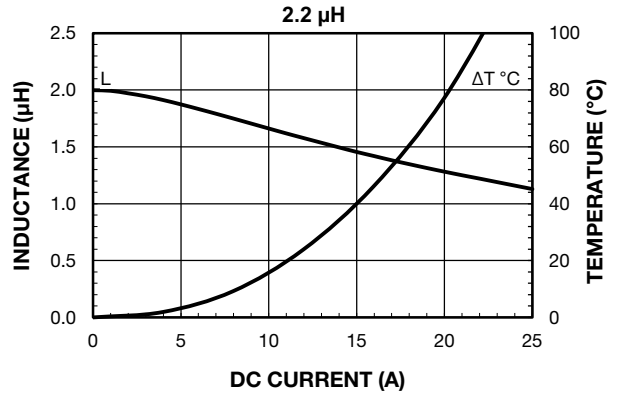
1.0 µH



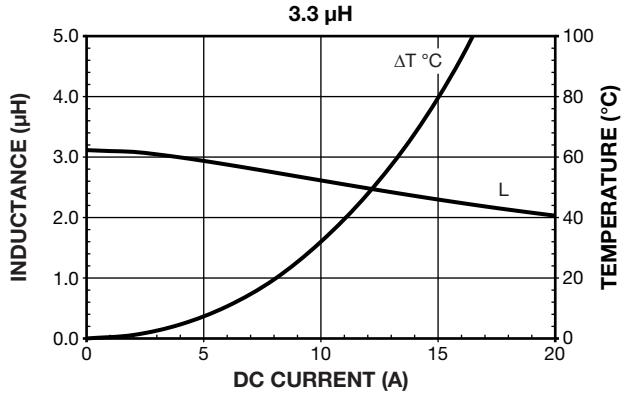
1.5 µH



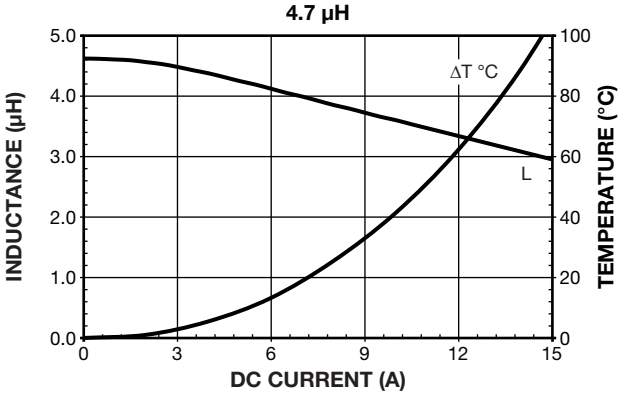
2.2 µH



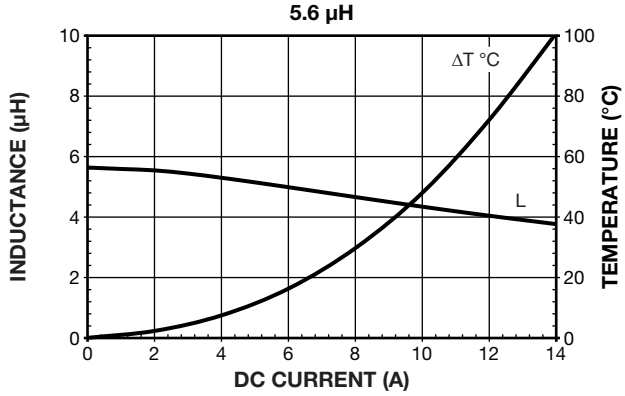
3.3 µH



4.7 µH



5.6 µH

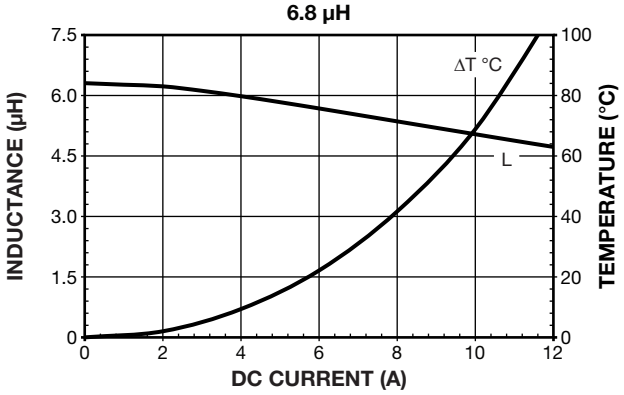


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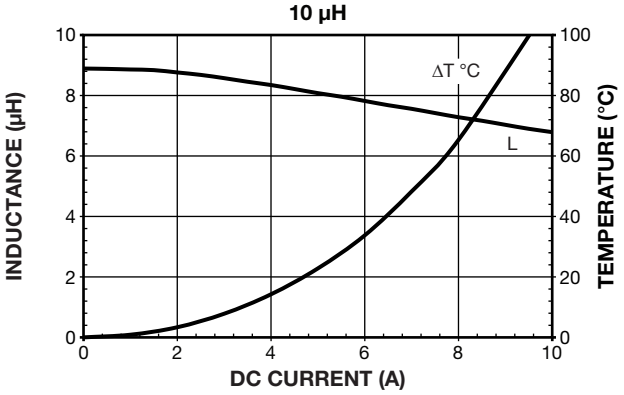
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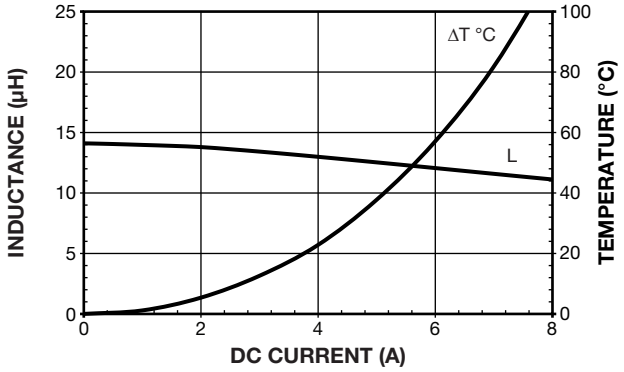
6.8 µH



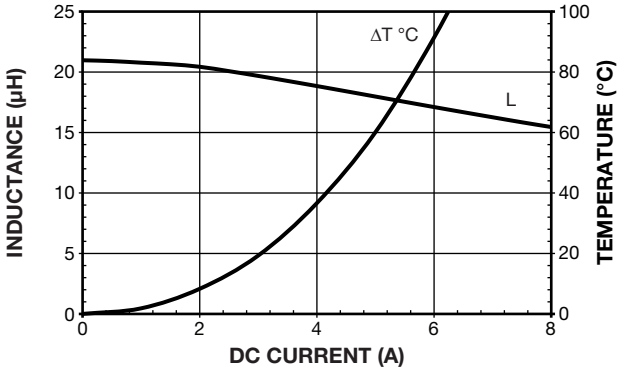
10 µH



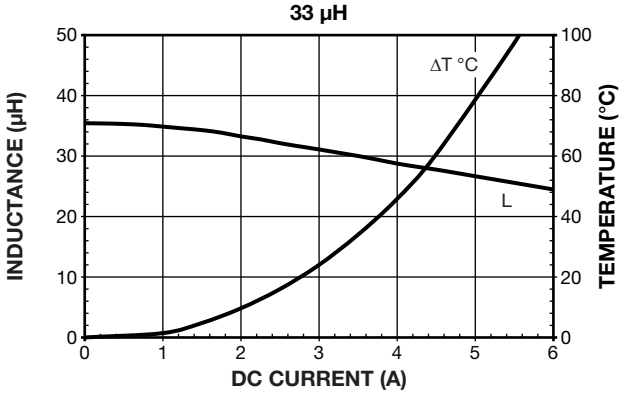
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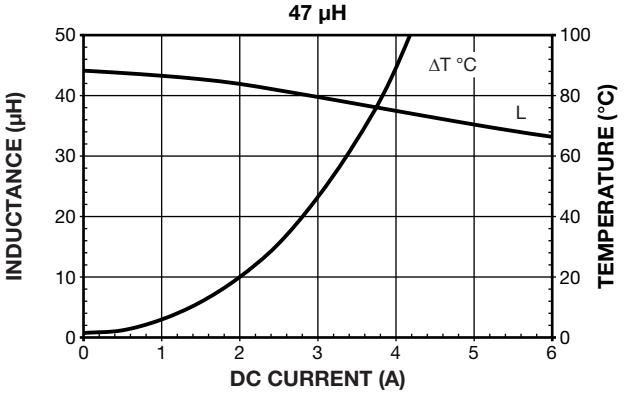
22 µH



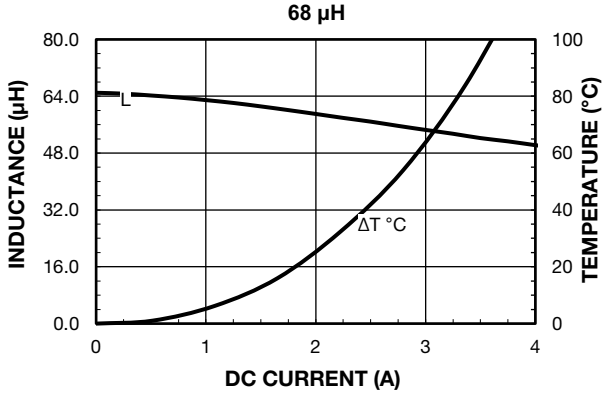
33 µH



47 µH

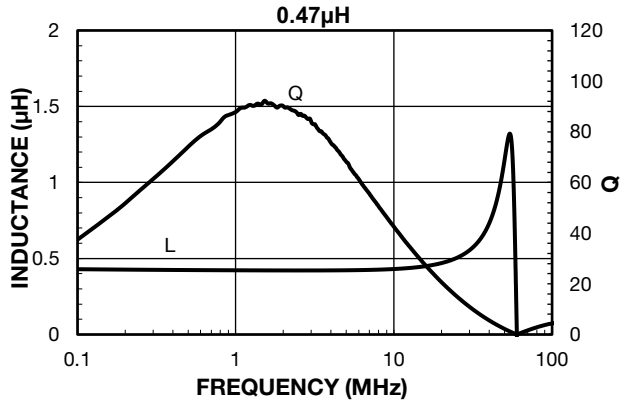


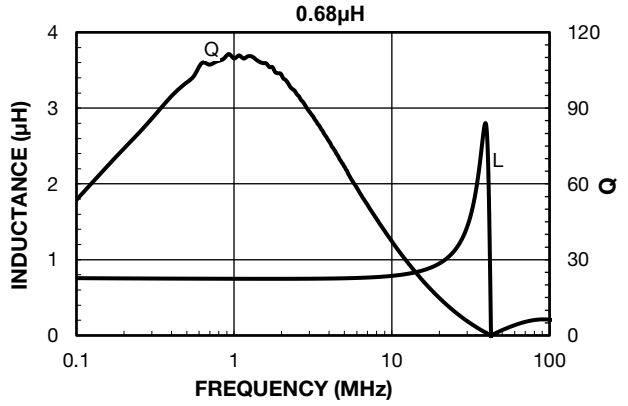
68 µH

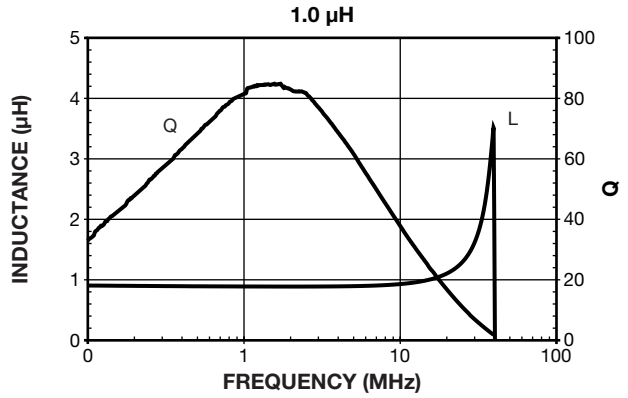


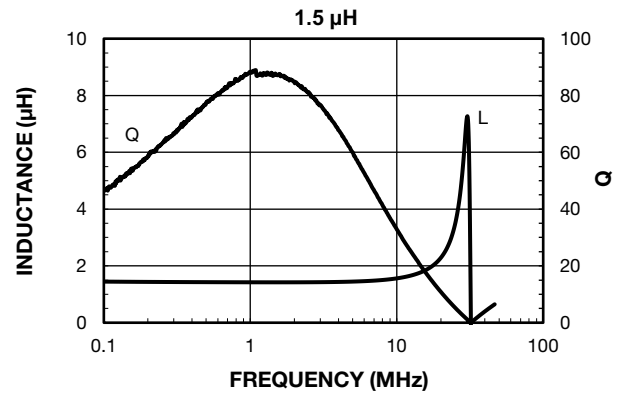
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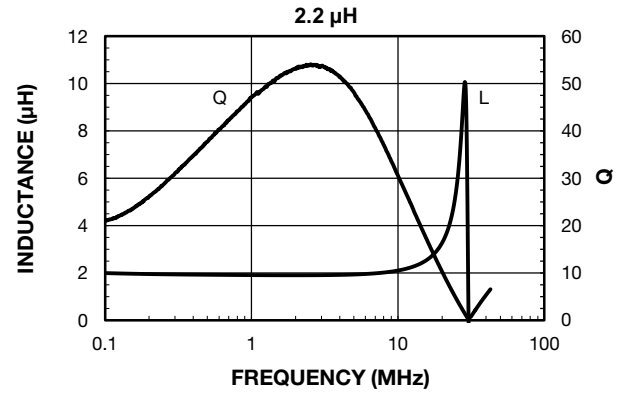
PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY

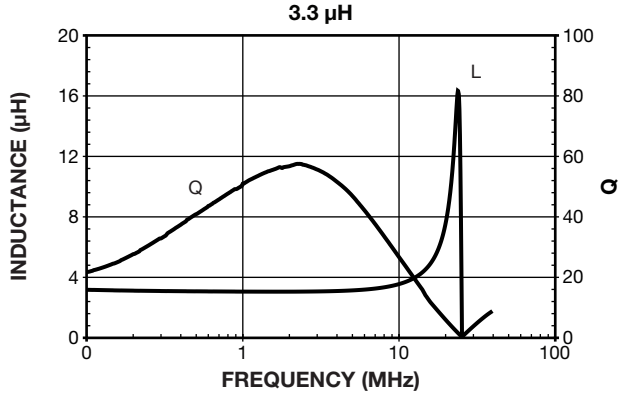


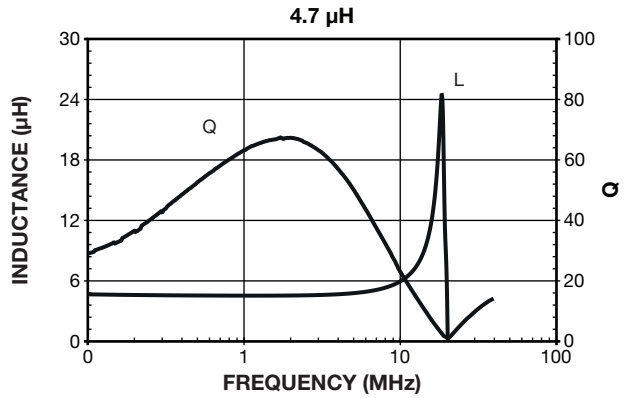


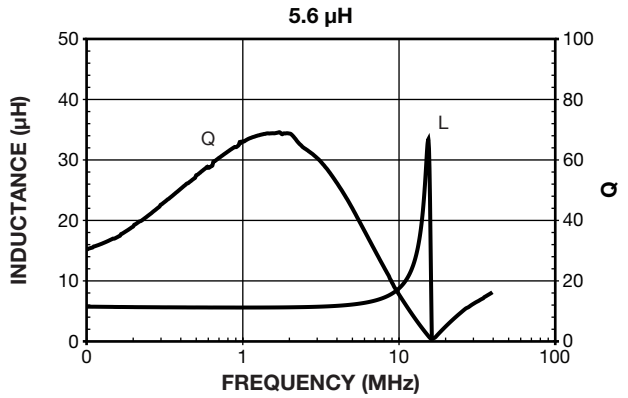










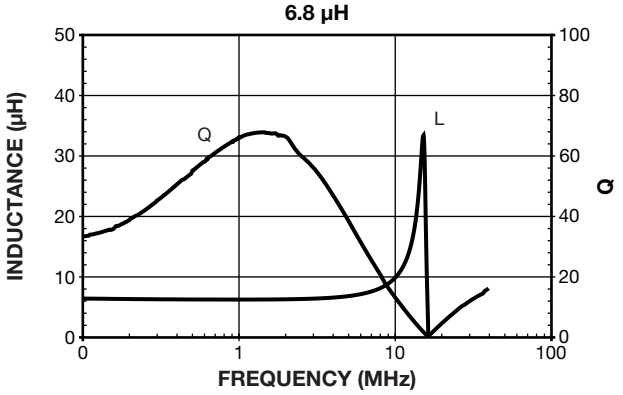


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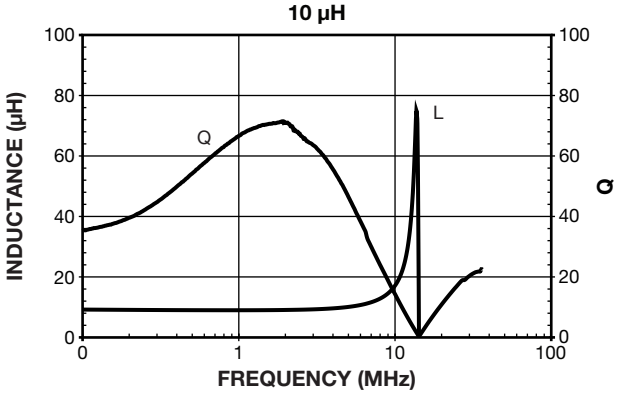
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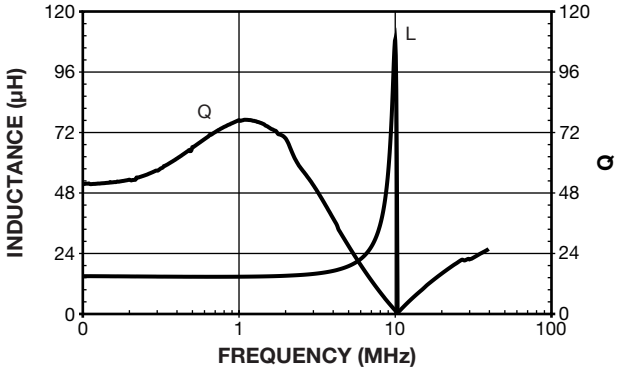
6.8 µH



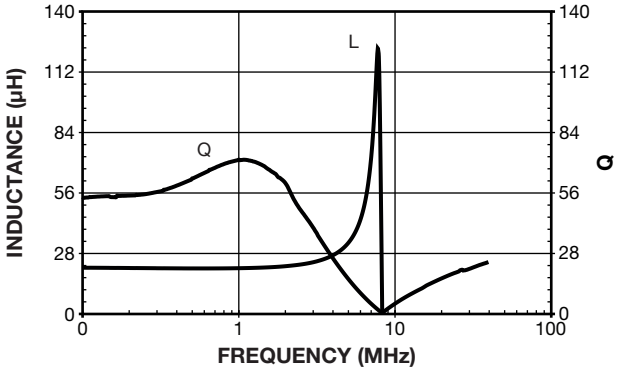
10 µH



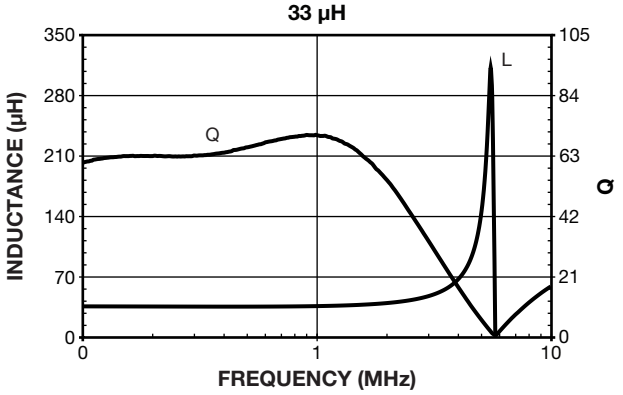
15 µH



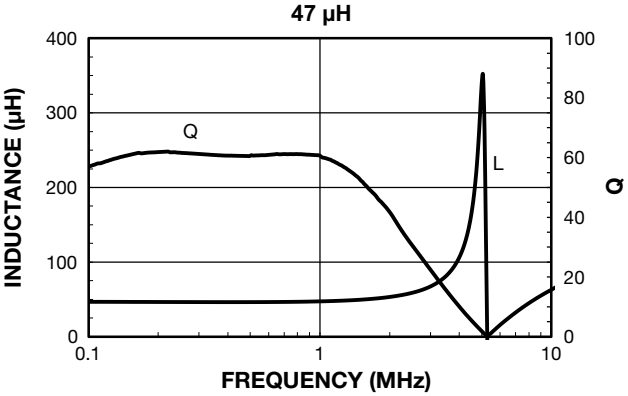
22 µH



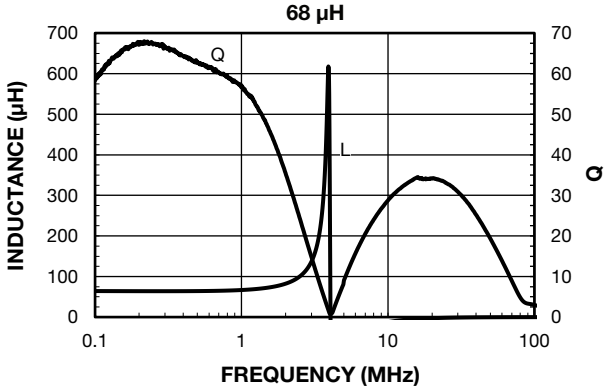
33 µH



47 µH



68 µH



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