IHLP® Automotive Inductors, High Temperature (180 °C) Series



LINKS TO ADDITIONAL RESOURCES

Calculators

FEATURES

- High temperature, up to 180 °C
- Shielded construction
- Handles high transient current spikes up to 10 times the current rating, depending on the duration
- Ultra low buzz noise, due to composite construction
- 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)

APPLICATIONS

- Brushless DC motor for auto EGR (exhaust gas recycle) pump
- ADAS (advanced driver-assistance systems)
- Body electronics
  - LED lighting
  - Infotainment / driver information
  - Mirror / window / door soft close control
- EMI filter up to 180 °C
- Storage inductors for GaN switched-mode power supply applications

STANDARD ELECTRICAL SPECIFICATIONS

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)	SRF TYP. (MHz)
0.47	1.55	1.66	30.0	28.5	72.1
1.0	2.87	3.07	23.5	24.0	37.2
1.5	4.2	4.5	22.0	17.9	32
2.2	8.15	8.76	15	12	30.1
3.3	11.0	11.81	11.0	12.0	25.5
4.7	14.3	15.32	9.8	9.2	20.1
5.6	16.5	17.60	9.3	9.0	16.3
6.8	20.9	22.36	8.0	9.0	16.3
10	30.9	33.06	6.5	8.5	11.5
15	47.0	50.29	5.1	7.7	10.4
22	70.5	75.44	4.1	6.4	8.30
33	110	117.70	3.7	4.2	5.79
47	167	178	3.1	4.1	5.22
68	240	252	2.4	3.5	4.02

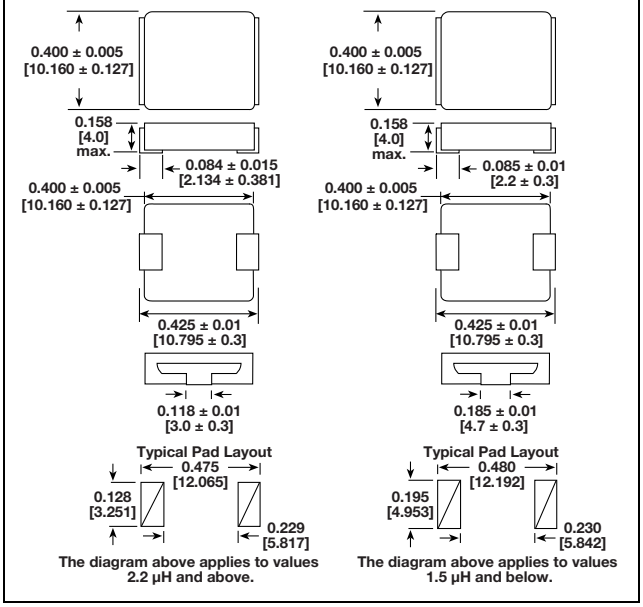
Notes

- All test data is referenced to 25 °C ambient
- Operating temperature range -55 °C to +180 °C
- The part temperature (ambient + temp. rise) should not exceed 180 °C under worst case operating conditions. Circuit design, component placement, PWB 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 %

DIMENSIONS in inches [millimeters]



For technical questions, contact: magnetics@vishay.com

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DESCRIPTION

IHLP-4040DZ-8A	4.7 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	4 R 7	M	8 A
PRODUCT FAMILY	SIZE	PACKAGE CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	SERIES
		EK = tape and reel	**4R7** = 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

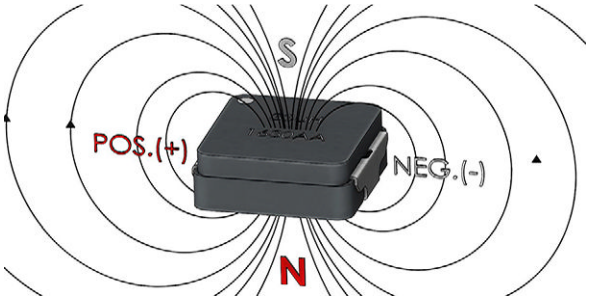
- 1000 piece reels for IHLP4040DZ models contains tape pitch change
- For additional packaging details see “Packaging Methods”

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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.

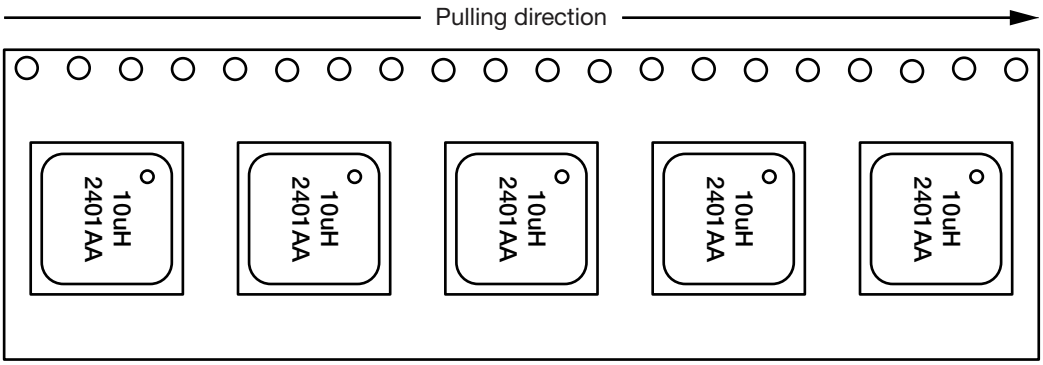
For the IHLP-4040DZ-8A series, the polarity mark also indicates the "start" or "inside" lead of the winding.

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

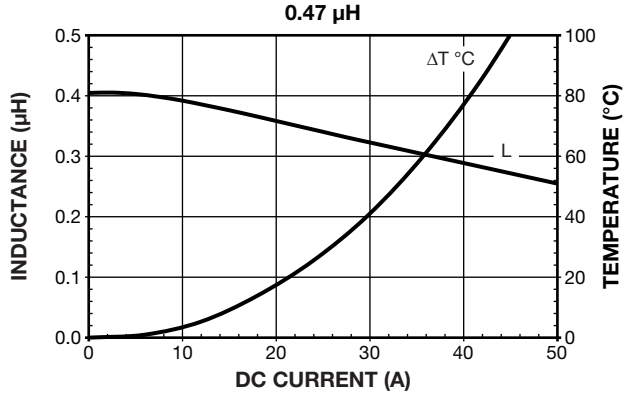


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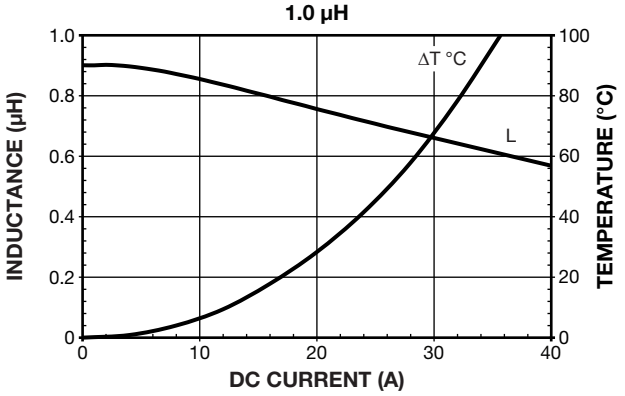
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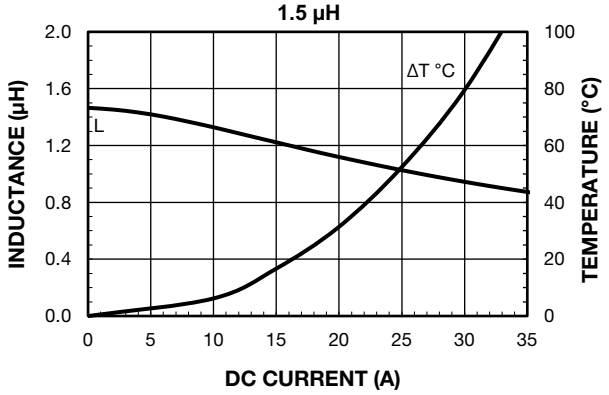
0.47 µH



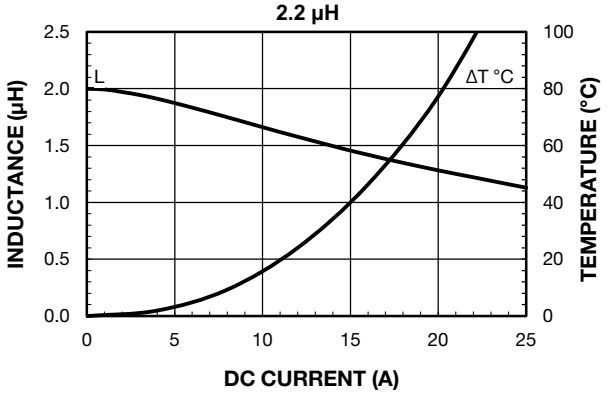
1.0 µH



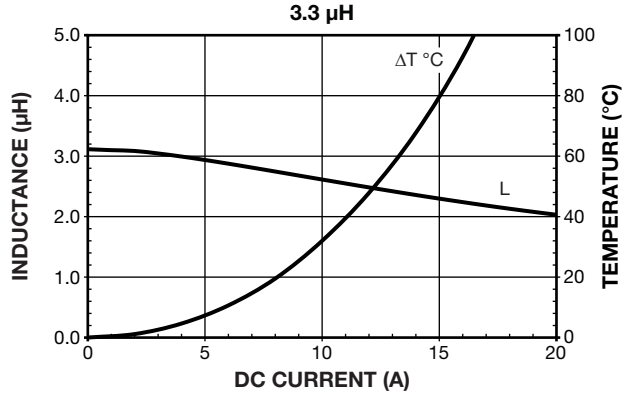
1.5 µH



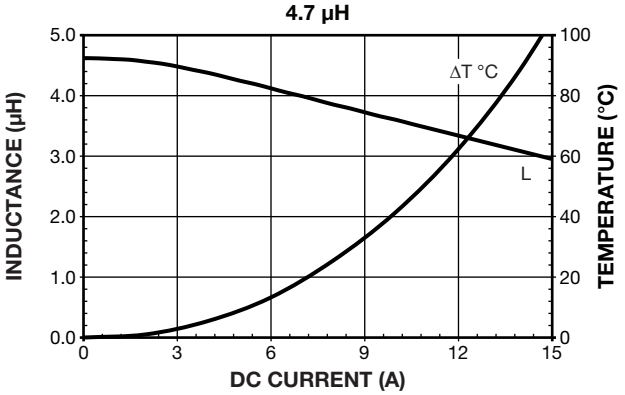
2.2 µH



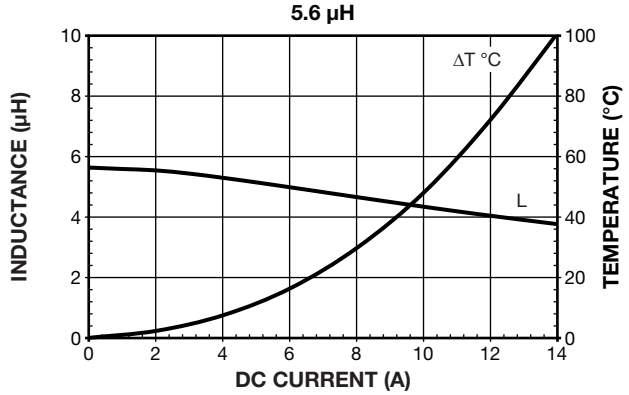
3.3 µH



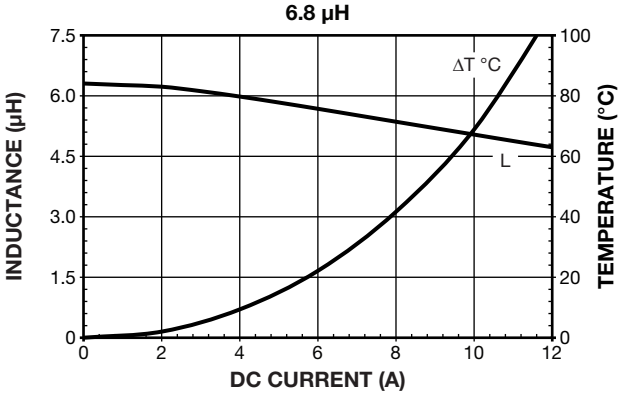
4.7 µH



5.6 µH

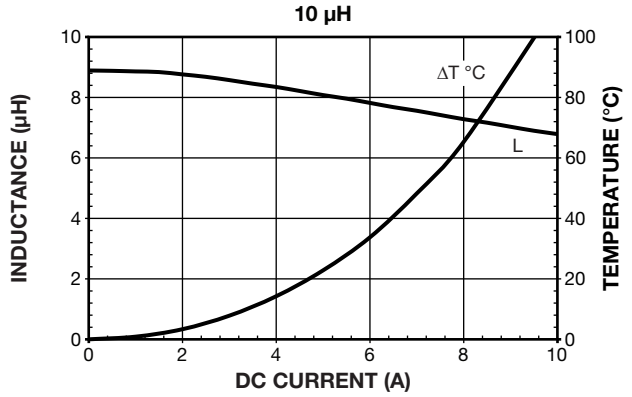


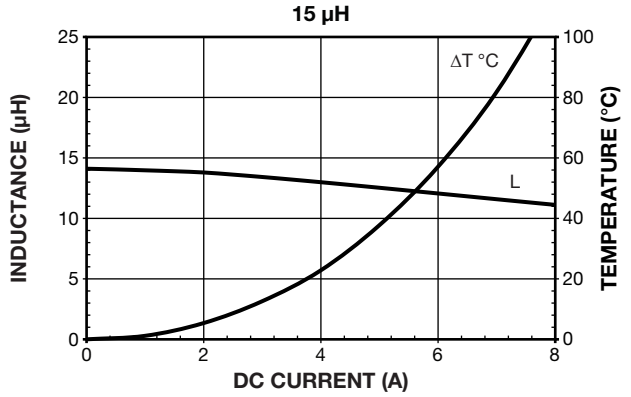
6.8 µH

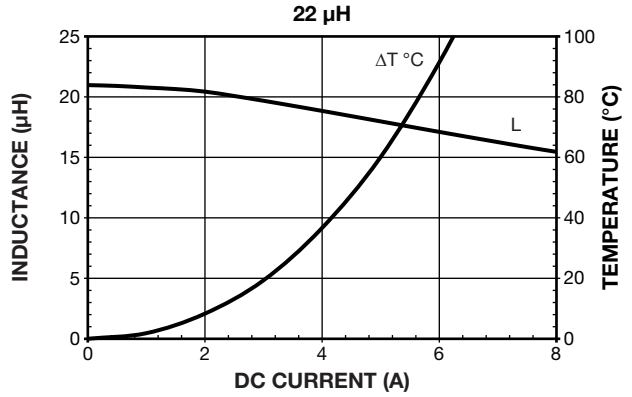


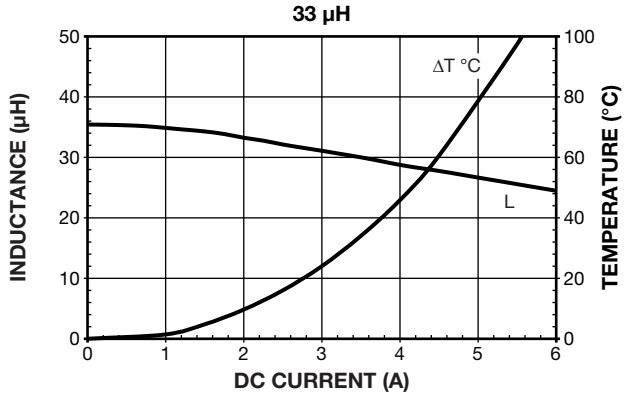
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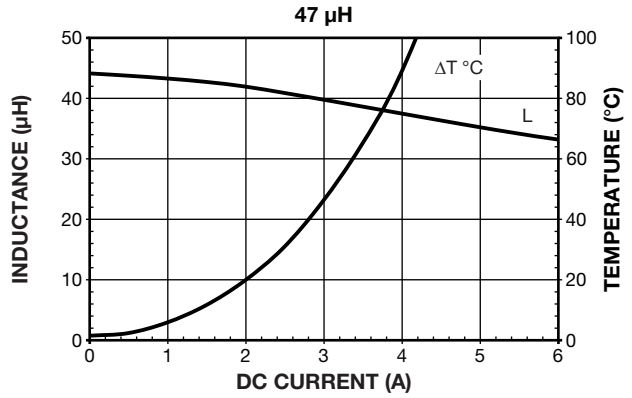
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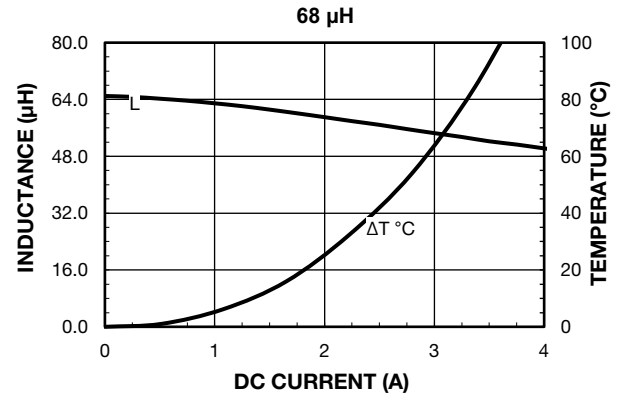








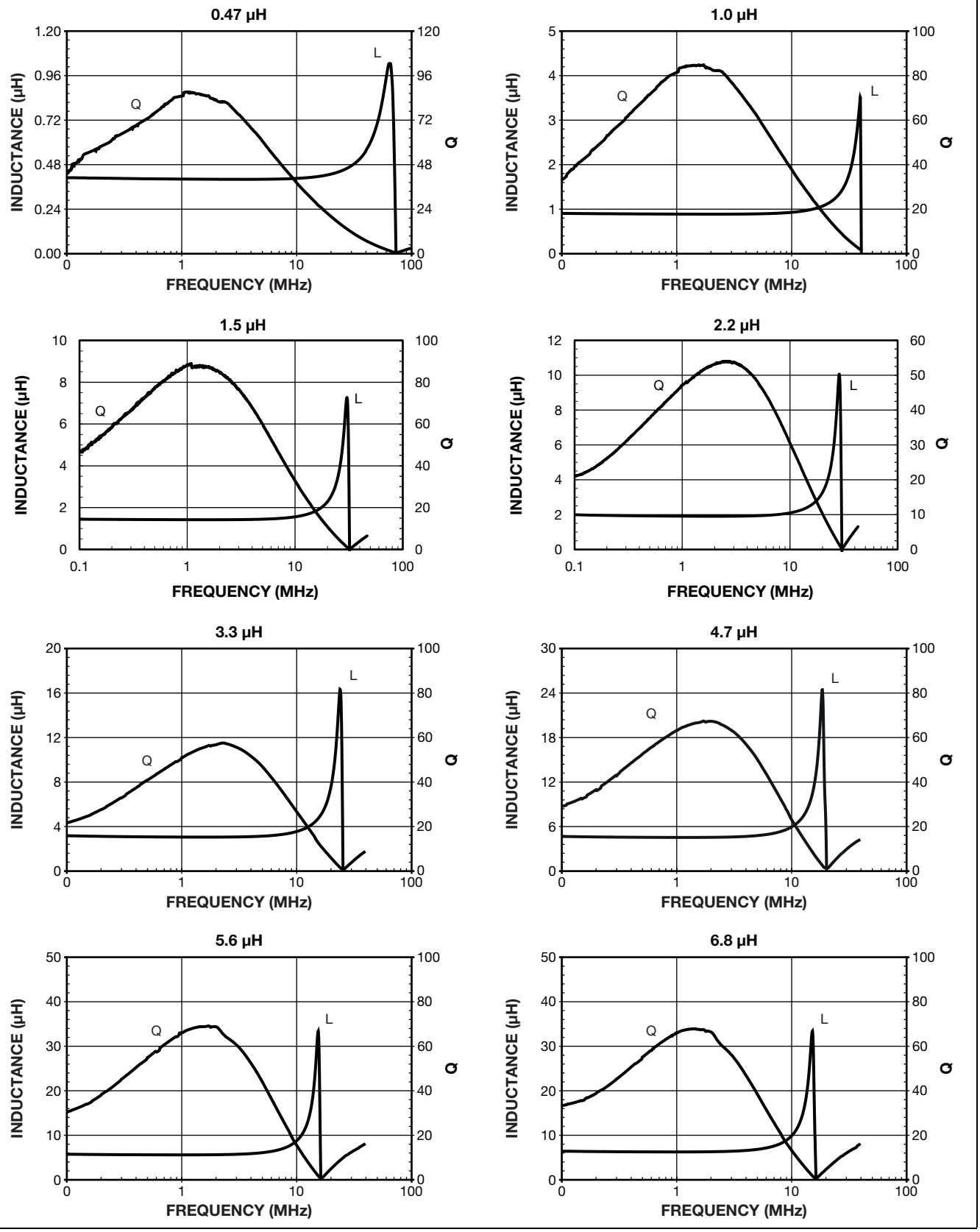




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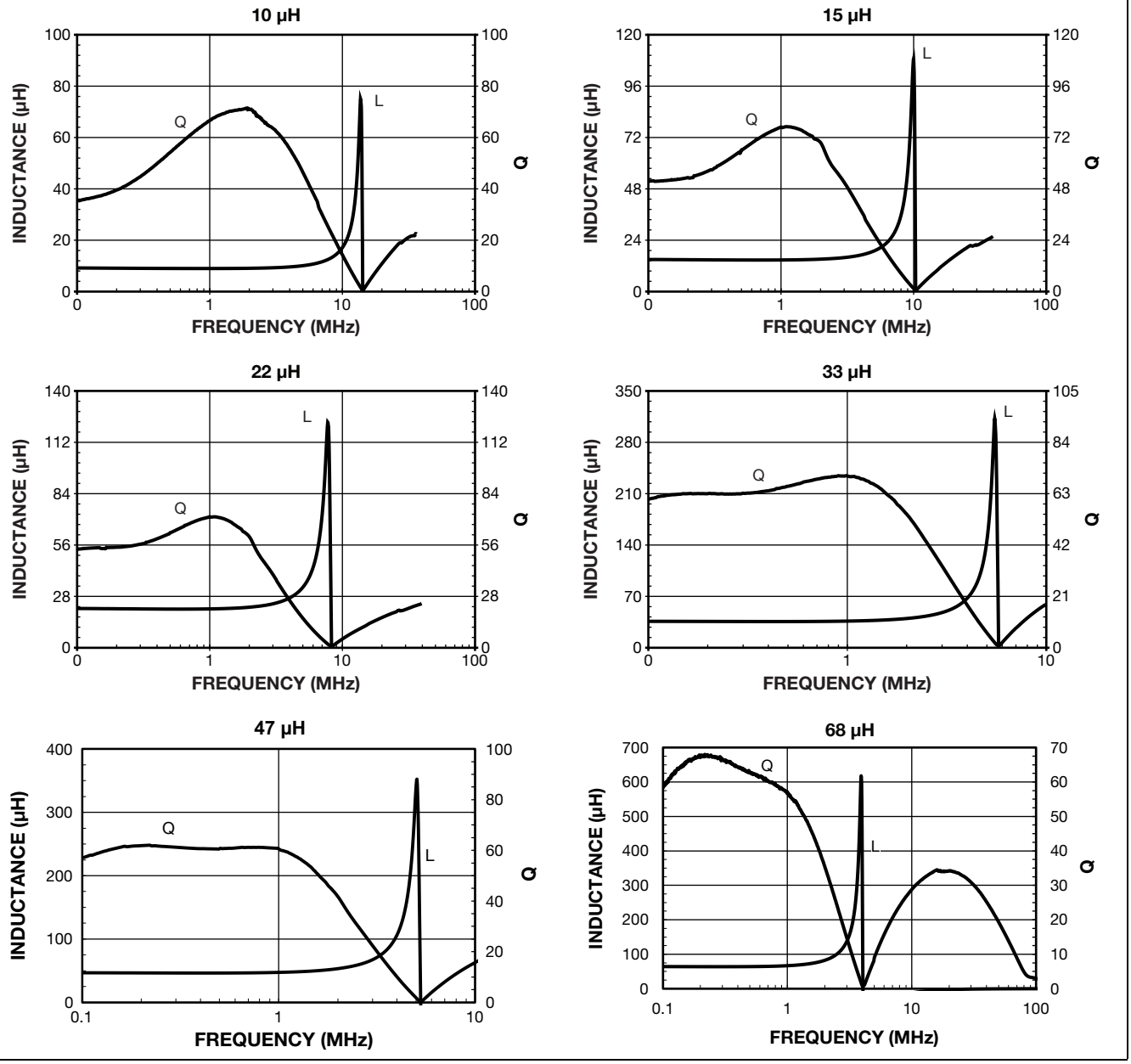
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