



IHLE[®] High Current Inductor With E-Field Shield



LINKS TO ADDITIONAL RESOURCES



APPLICATIONS

- Notebook / desktop / server applications
- High current POL converters
- Low profile, high current power supplies
- Battery powered devices
- DC/DC converters in distributed power systems
- DC/DC converter for field programmable gate array (FPGA)
- Telecom infrastructure

FEATURES

- High temperature, continuous operation up to 155 °C
- Patented shielded construction
- Excellent DC/DC energy storage and filter inductor applications
- Integrated E-Field shield eliminates need for separate shielding
- Up to 20 dB E-Field reduction at 1 cm, measured vertically from top center of device
- Four terminals offer superior shock and vibration performance
- Handles high transient current spikes without saturation
- IHLE design; PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

| 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) | | SRF TYP. (MHz) |
| | | | | | 20 % DROP ⁽²⁾ | 30 % DROP ⁽³⁾ | |
| IHLE2020CDERR22M51 | 0.22 | 3.95 | 4.23 | 18.0 | 8.6 | 13.0 | 164.5 |
| IHLE2020CDERR33M51 | 0.33 | 4.90 | 5.34 | 15.8 | 8.1 | 11.8 | 127.0 |
| IHLE2020CDERR47M51 | 0.47 | 6.02 | 6.44 | 14.6 | 6.5 | 9.4 | 88.0 |
| IHLE2020CDERR68M51 | 0.68 | 9.10 | 9.74 | 11.3 | 6.6 | 9.5 | 78.0 |
| IHLE2020CDER1R0M51 | 1.0 | 11.50 | 12.10 | 9.8 | 7.2 | 10.3 | 66.0 |
| IHLE2020CDER1R5M51 | 1.5 | 18.00 | 19.80 | 7.9 | 6.6 | 9.4 | 49.2 |
| IHLE2020CDER2R2M51 | 2.2 | 24.70 | 26.00 | 6.5 | 5.0 | 7.1 | 39.8 |
| IHLE2020CDER3R3M51 | 3.3 | 44.00 | 47.00 | 5.2 | 4.3 | 6.1 | 33.4 |
| IHLE2020CDER4R7M51 | 4.7 | 72.80 | 78.30 | 4.1 | 3.7 | 6.0 | 23.8 |
| IHLE2020CDER6R8M51 | 6.8 | 104.0 | 111.0 | 3.2 | 2.0 | 2.9 | 18.8 |
| IHLE2020CDER100M51 | 10 | 132.0 | 138.0 | 2.8 | 1.9 | 2.7 | 15.9 |
| IHLE2020CDER150M51 | 15 | 195.0 | 208.0 | 2.4 | 1.8 | 2.6 | 14.1 |

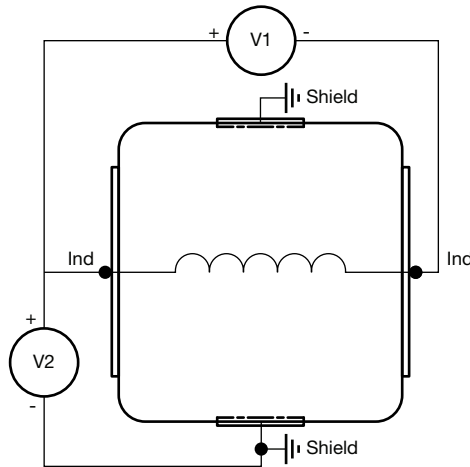
Notes

- All test data is referenced to 25 °C ambient
- 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, 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 (V1) = 50 V
- Rated isolation voltage, inductor lead to shield (V2) = 50 V
- ⁽¹⁾ DC current (A) that will cause an approximate ΔT of 40 °C
- ⁽²⁾ DC current (A) that will cause L₀ to drop approximately 20 %
- ⁽³⁾ DC current (A) that will cause L₀ to drop approximately 30 %

PATENT(S):

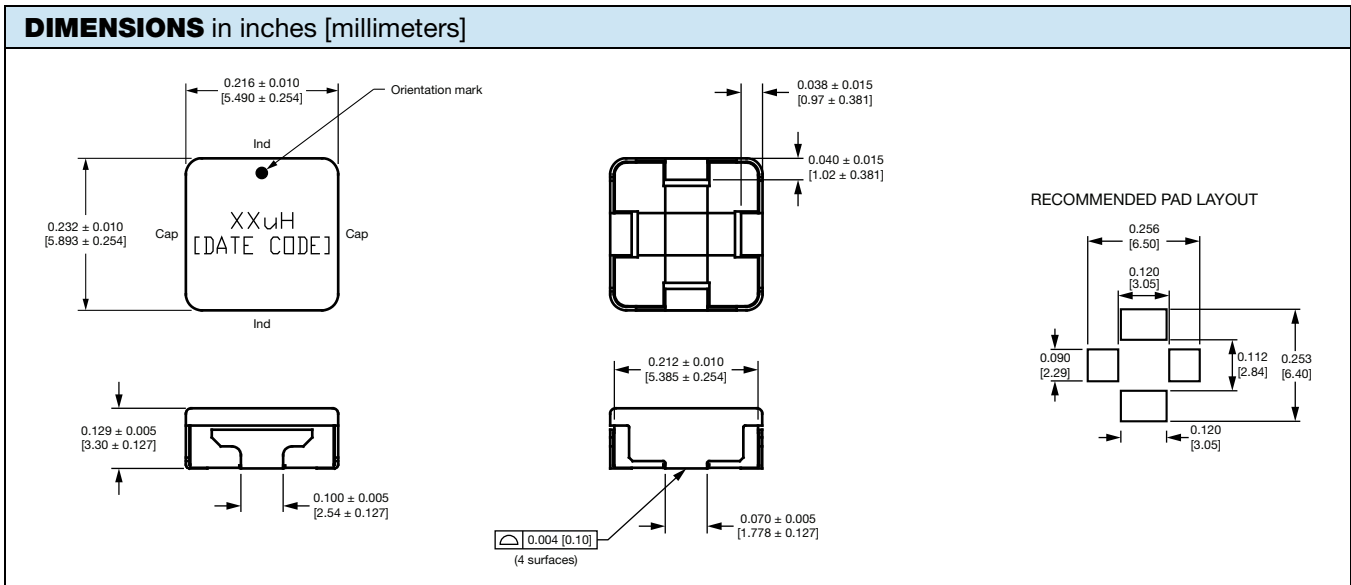
This Vishay product is protected by one or more United States and international patents.

www.vishay.com/patents

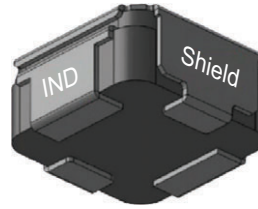
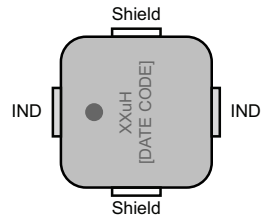


| DESCRIPTION | | | | |
|----------------|------------------|----------------------|--------------|--------------------------------|
| IHLE-2020CD-51 | 1.0 μ H | $\pm 20\%$ | ER | e3 |
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

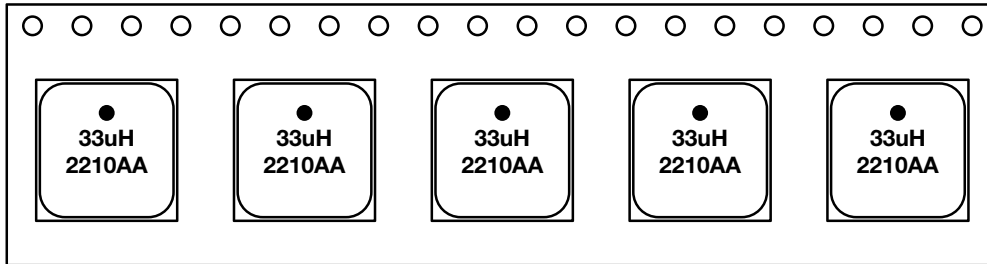
| GLOBAL PART NUMBER | | | | | | | | | | | | | | | | | |
|--------------------|---|---|---|------|---|---|---|--------------|---|------------------|---|---|------|--------|---|---|---|
| I | H | L | E | 2 | 0 | 2 | 0 | C | D | E | R | 1 | R | 0 | M | 5 | 1 |
| PRODUCT FAMILY | | | | SIZE | | | | PACKAGE CODE | | INDUCTANCE VALUE | | | TOL. | SERIES | | | |



PART MARKING / POCKET TAPE ORIENTATION

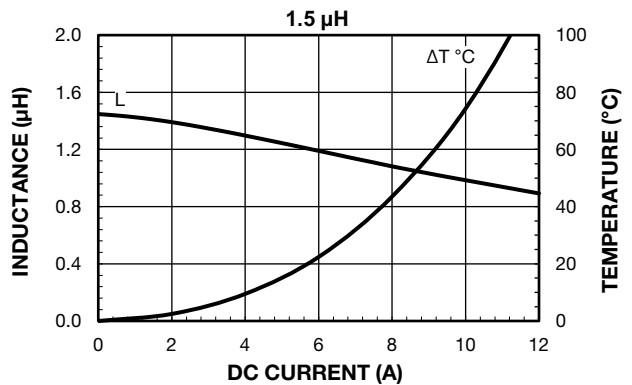
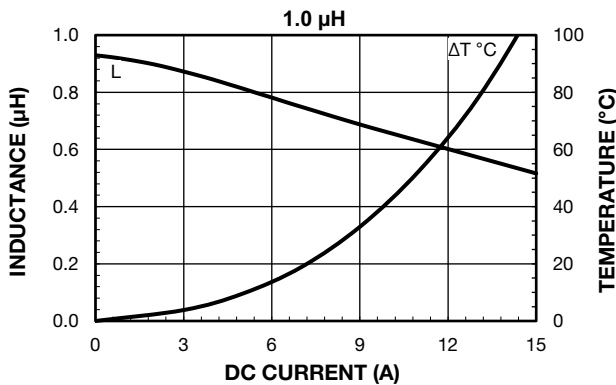
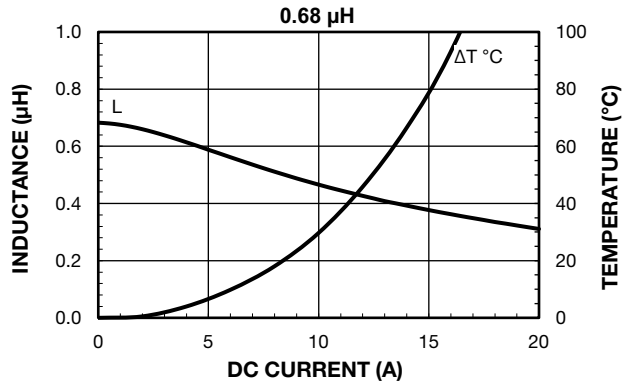
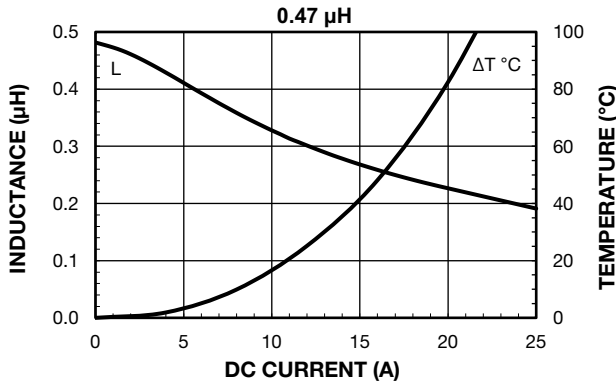
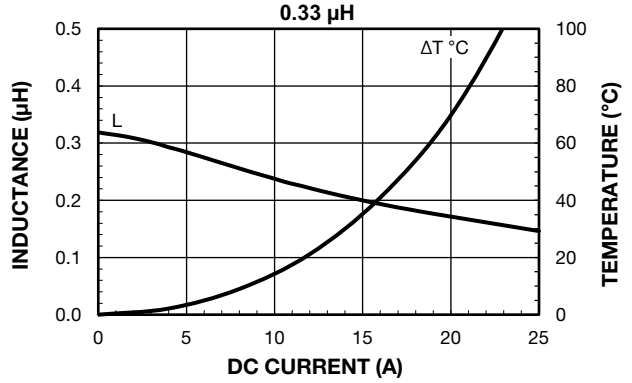
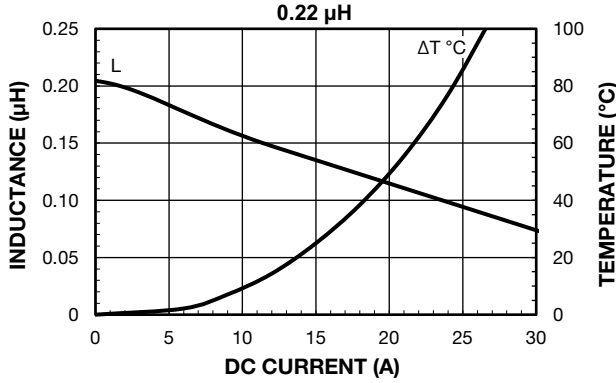


Pulling direction →



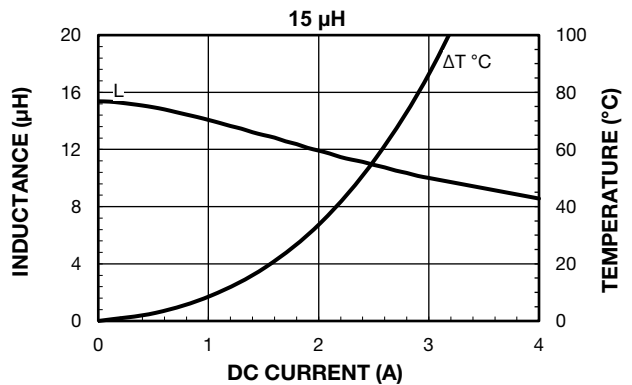
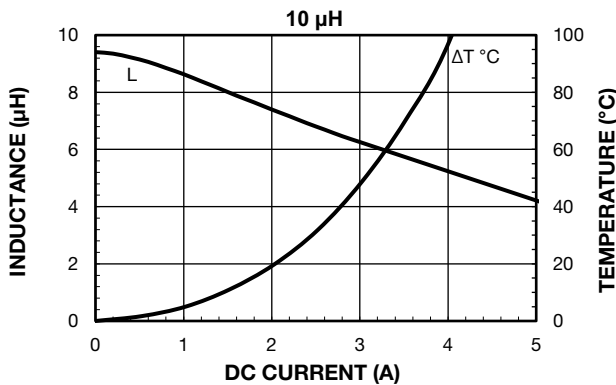
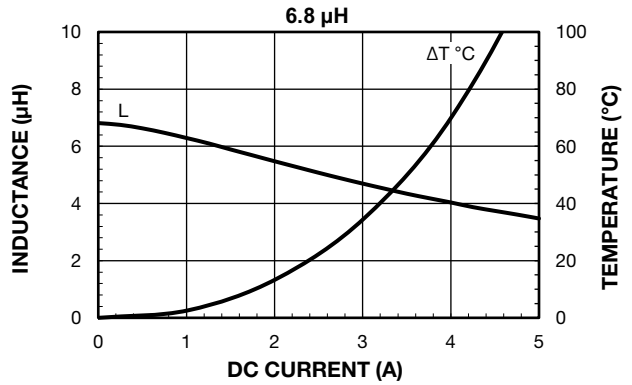
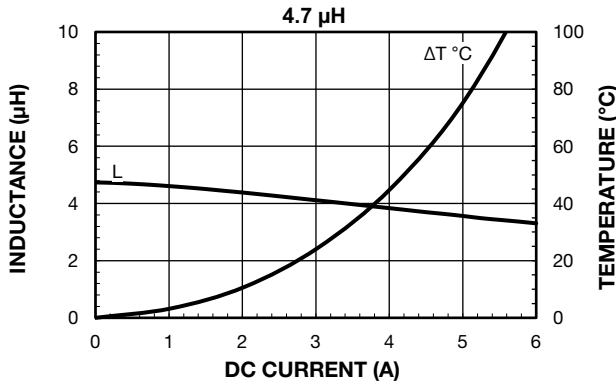
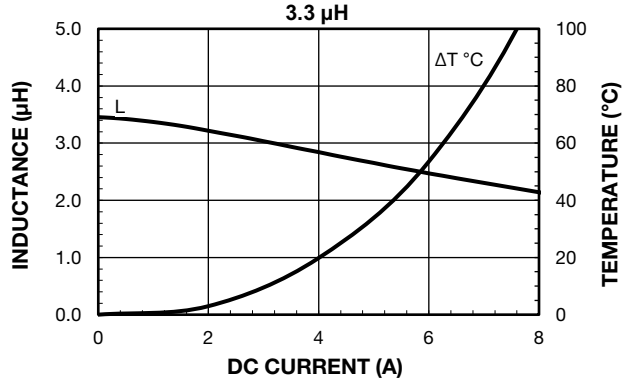
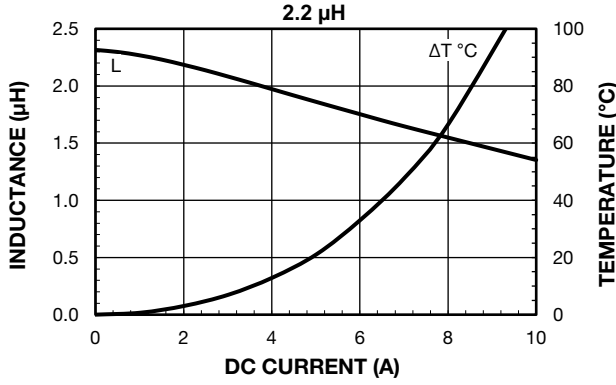


PERFORMANCE GRAPHS



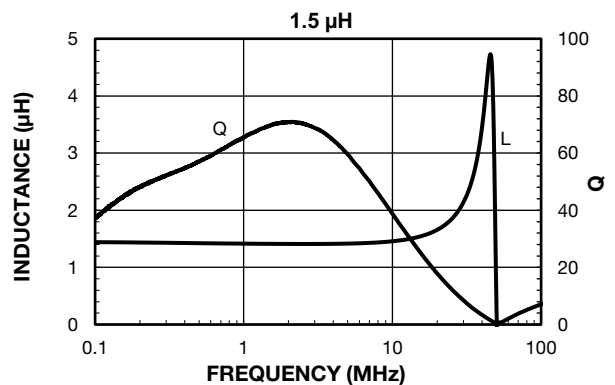
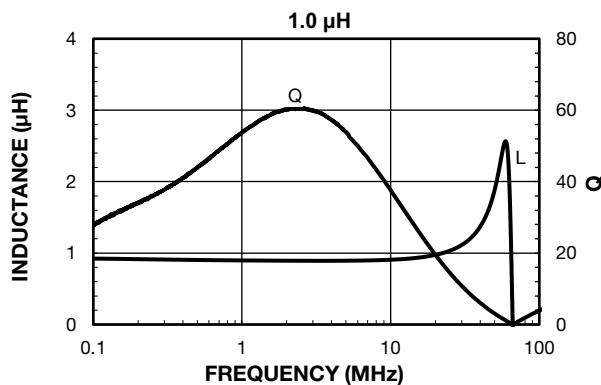
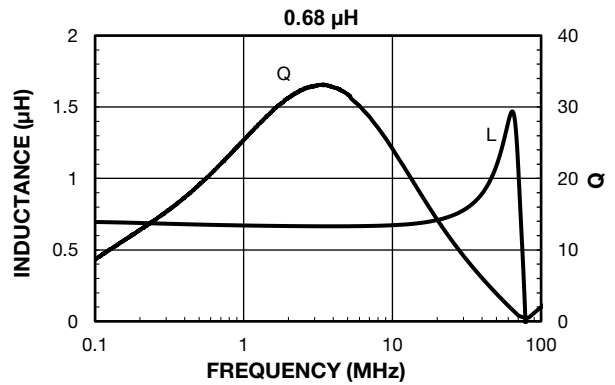
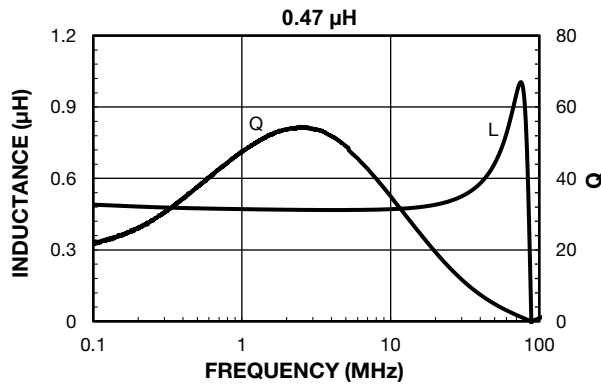
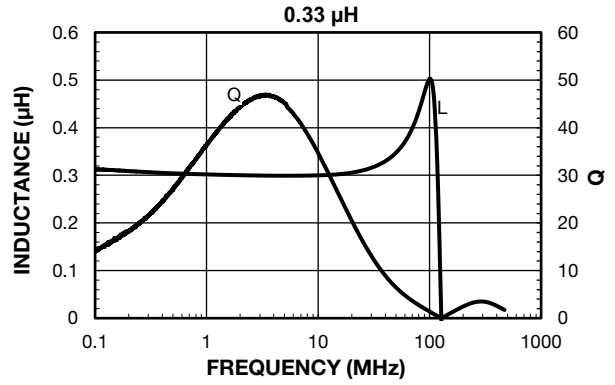
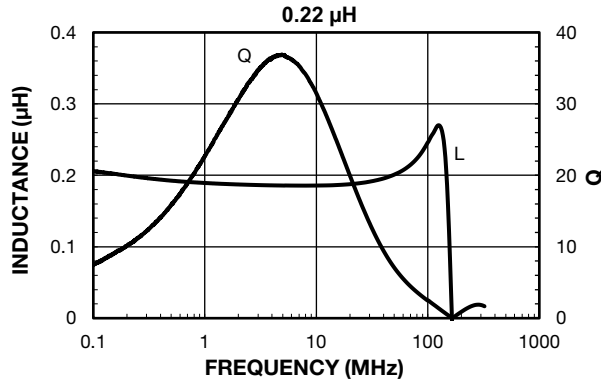


PERFORMANCE GRAPHS



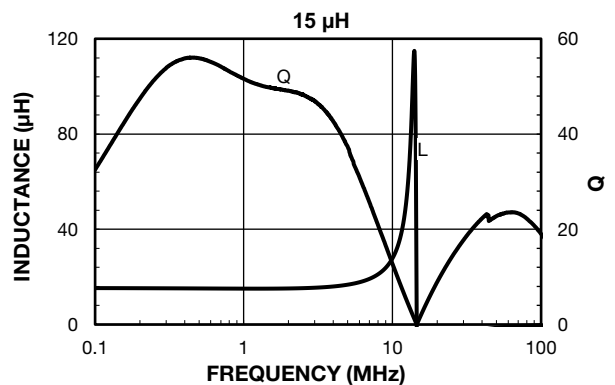
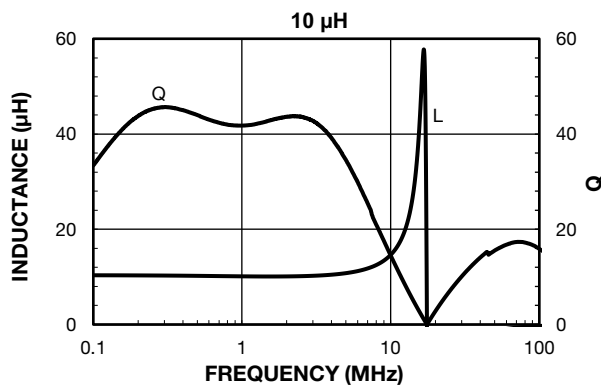
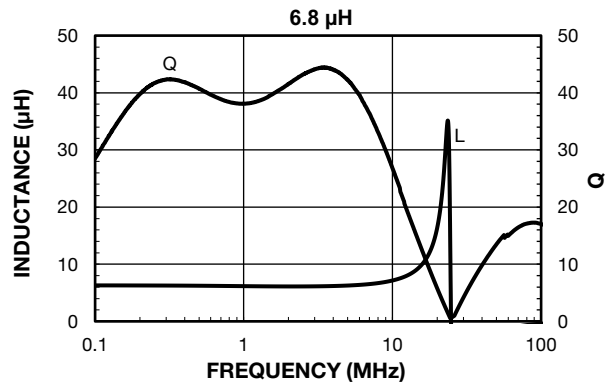
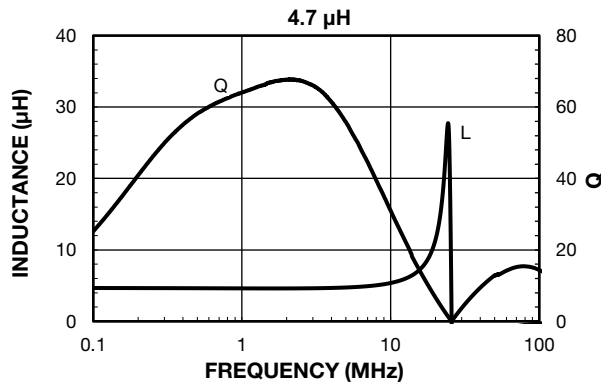
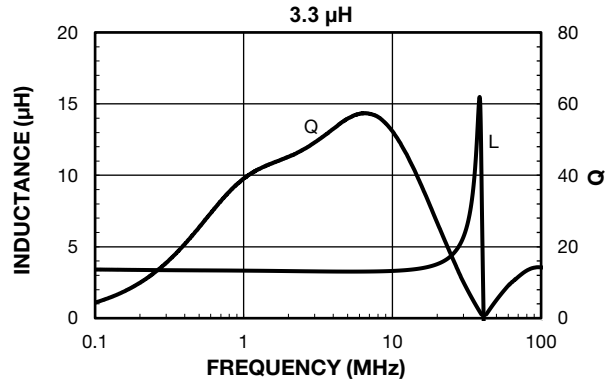
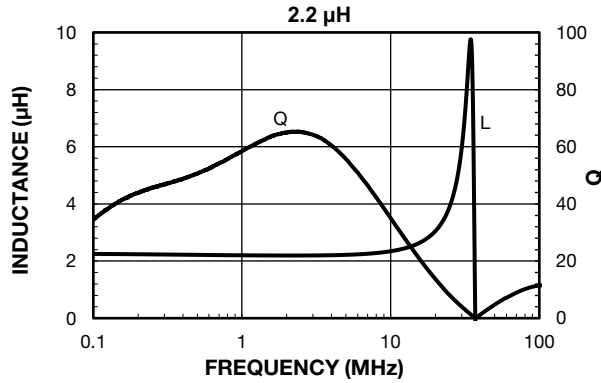


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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