

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



LINKS TO ADDITIONAL RESOURCES



APPLICATIONS

- Engine and transmission control units
- Diesel injection drivers
- DC/DC converters for entertainment / navigation systems
- Noise suppression for motors
 - Windshield wipers
 - Power seats
 - Power mirrors
 - Heating and ventilation blower
 - HID lighting
- LED drivers

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
- AEC-Q200 qualified
- 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

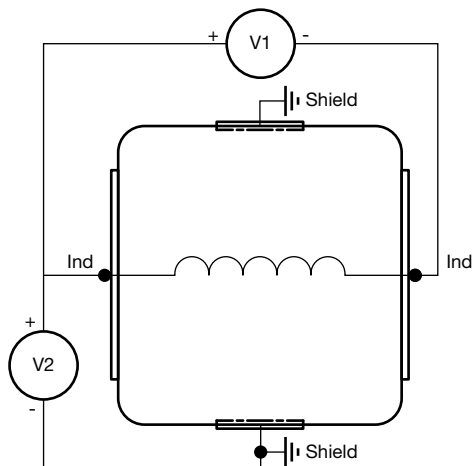
| PART NUMBER | L ₀ INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A (μH) | DCR TYP. 25 °C (mΩ) | DCR MAX. 25 °C (mΩ) | HEAT RATING CURRENT DC TYP. (A) ⁽¹⁾ | SATURATION CURRENT DC TYP. (A) | | SRF TYP. (MHz) |
|--------------------|--|---------------------------|---------------------------|---|-----------------------------------|--------------------------|----------------------|
| | | | | | 20 % DROP ⁽²⁾ | 30 % DROP ⁽³⁾ | |
| IHLE2020CDERR22M5A | 0.22 | 3.95 | 4.23 | 18.0 | 8.6 | 13.0 | 164.5 |
| IHLE2020CDERR33M5A | 0.33 | 4.90 | 5.34 | 15.8 | 8.1 | 11.8 | 127.0 |
| IHLE2020CDERR47M5A | 0.47 | 6.02 | 6.44 | 14.6 | 6.5 | 9.4 | 88.0 |
| IHLE2020CDERR68M5A | 0.68 | 9.10 | 9.74 | 11.3 | 6.6 | 9.5 | 78.0 |
| IHLE2020CDER1R0M5A | 1.0 | 11.50 | 12.10 | 9.8 | 7.2 | 10.3 | 66.0 |
| IHLE2020CDER1R5M5A | 1.5 | 18.00 | 19.80 | 7.9 | 6.6 | 9.4 | 49.2 |
| IHLE2020CDER2R2M5A | 2.2 | 24.70 | 26.00 | 6.5 | 5.0 | 7.1 | 39.8 |
| IHLE2020CDER3R3M5A | 3.3 | 44.00 | 47.00 | 5.2 | 4.3 | 6.1 | 33.4 |
| IHLE2020CDER4R7M5A | 4.7 | 72.80 | 78.30 | 4.1 | 3.7 | 6.0 | 23.8 |
| IHLE2020CDER6R8M5A | 6.8 | 104.0 | 111.0 | 3.2 | 2.0 | 2.9 | 18.8 |
| IHLE2020CDER100M5A | 10 | 132.0 | 138.0 | 2.8 | 1.9 | 2.7 | 15.9 |
| IHLE2020CDER150M5A | 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): www.vishay.com/patents

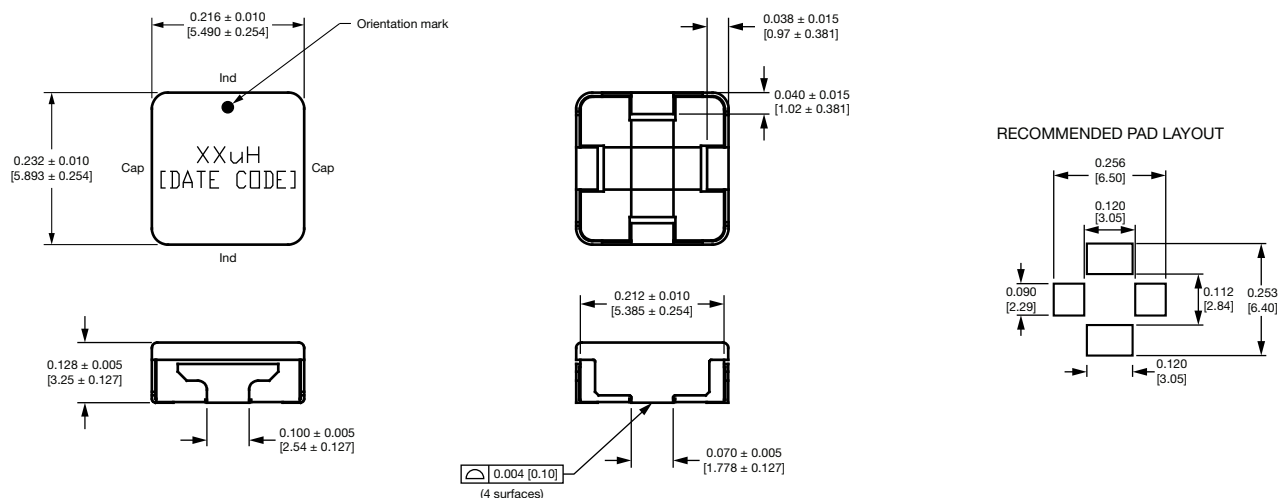
This Vishay product is protected by one or more United States and international patents.

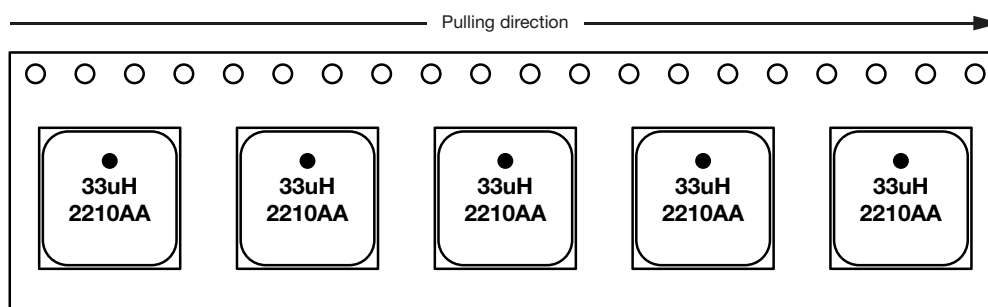
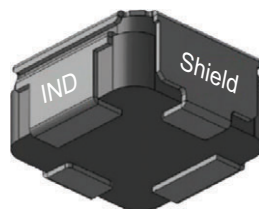
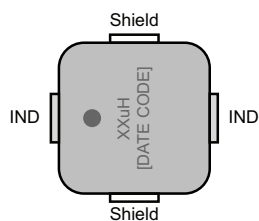
DESCRIPTION OF VOLTAGE RATINGS

DESCRIPTION

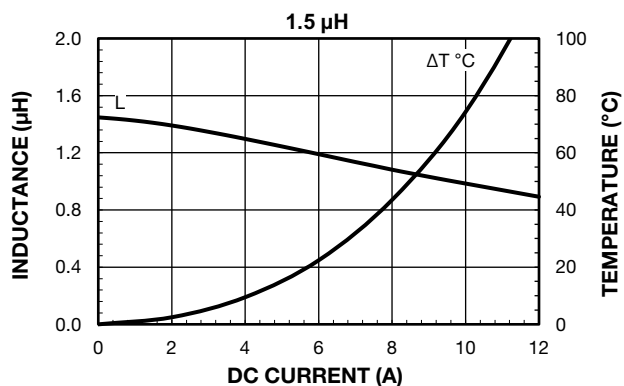
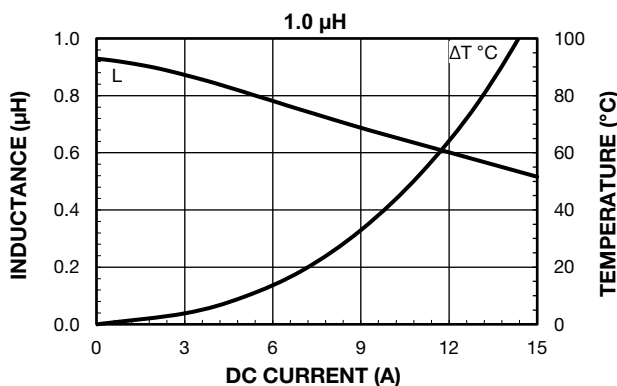
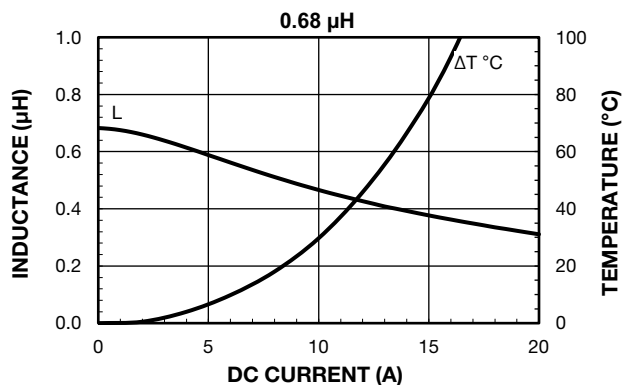
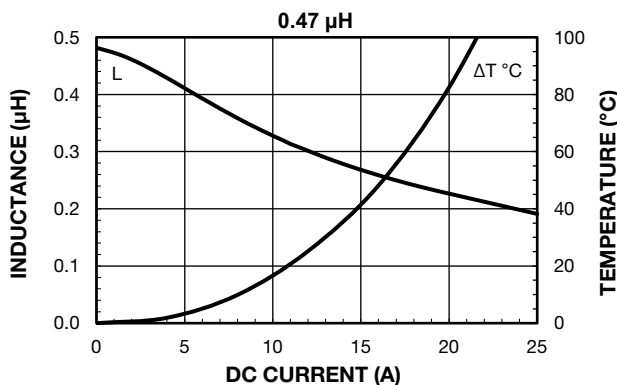
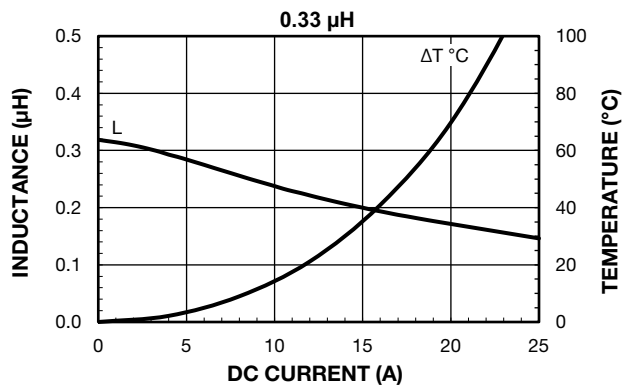
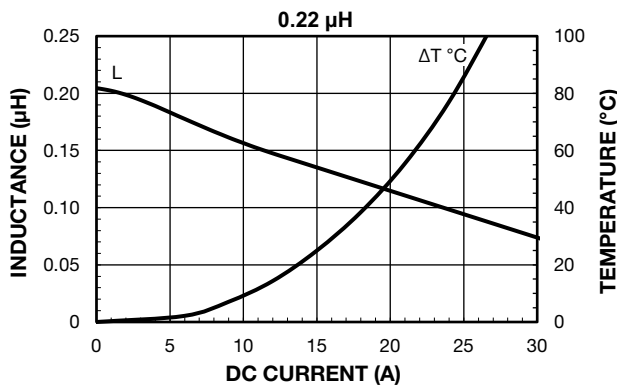
| | | | | |
|-----------------------|------------------------------|------------------------------|----------------------|--------------------------------|
| IHLE-2020CD-5A | 1.0 μH | $\pm 20\%$ | Tape and Reel | e3 |
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

GLOBAL PART NUMBER

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

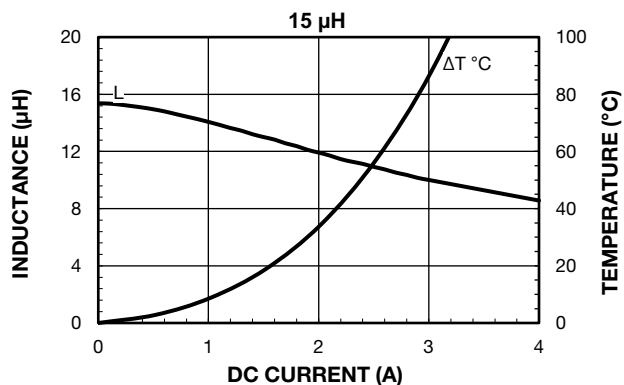
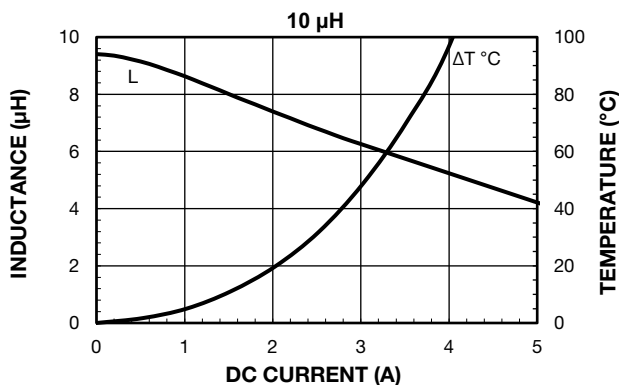
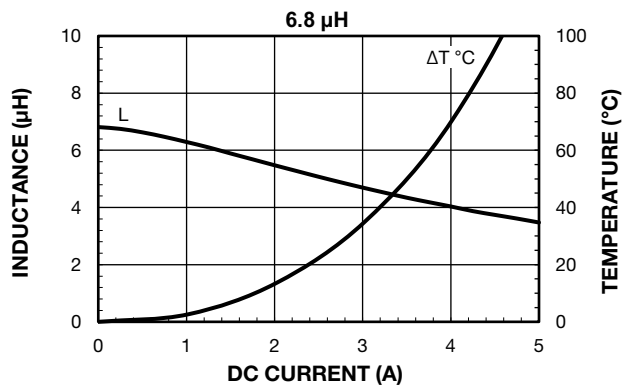
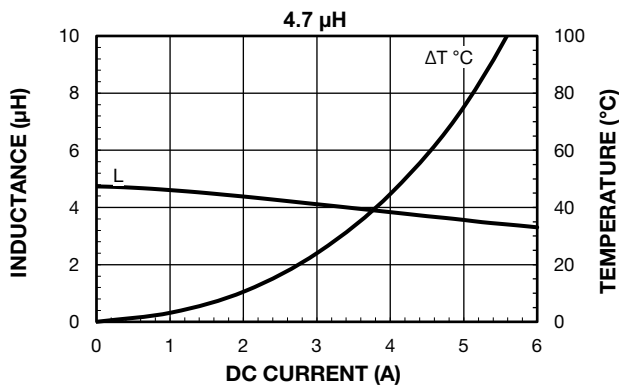
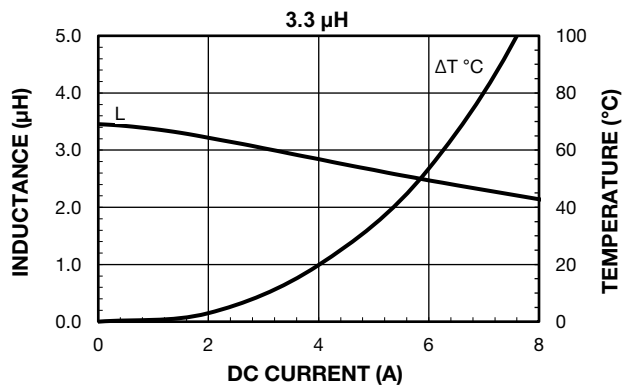
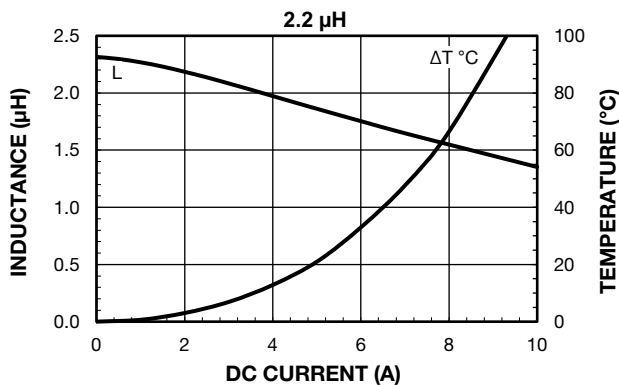
DIMENSIONS in inches [millimeters]


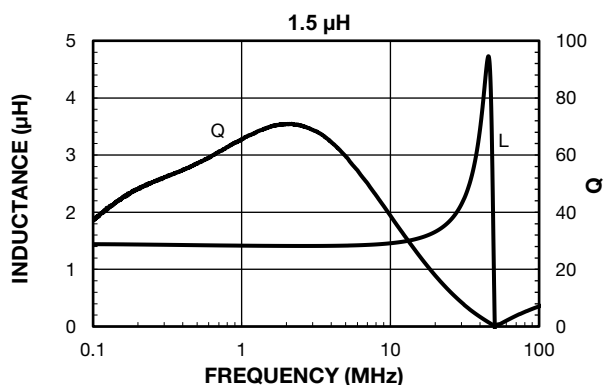
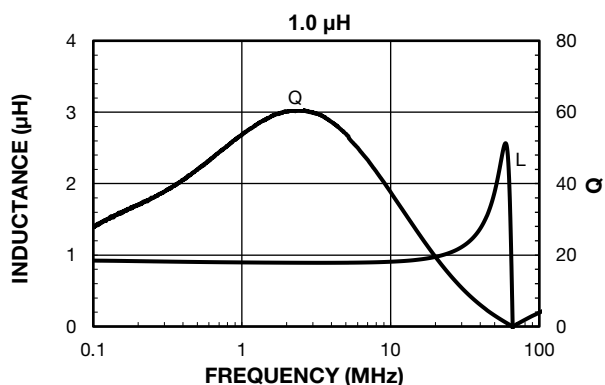
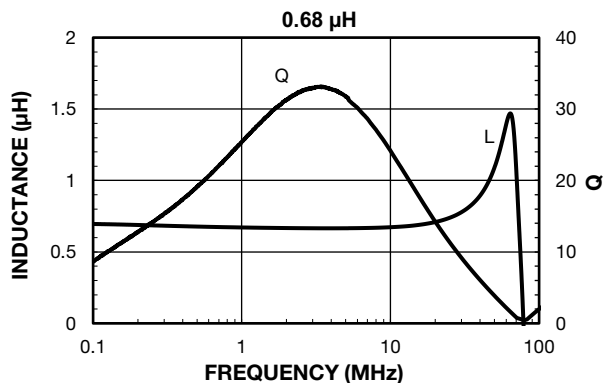
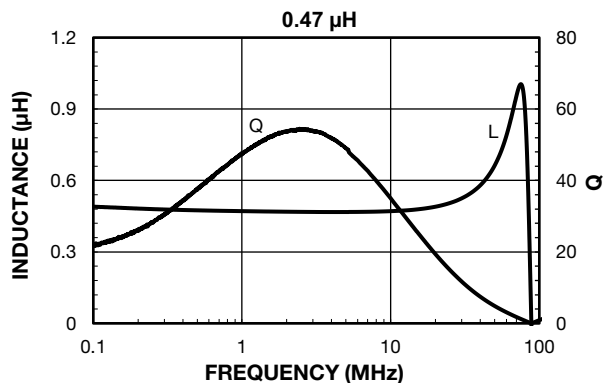
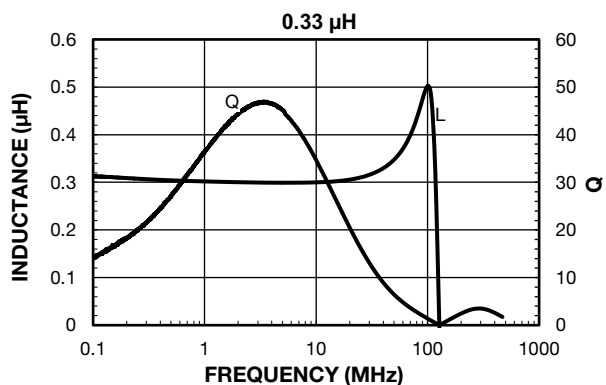
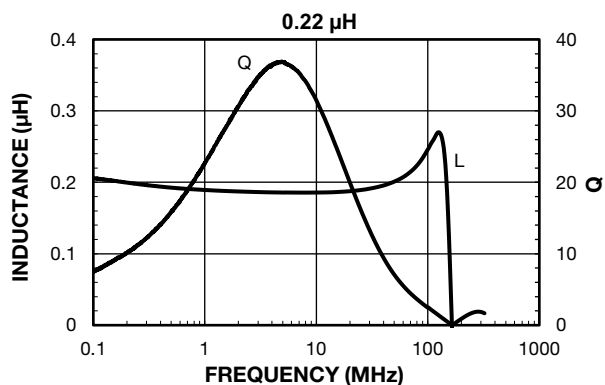
PART MARKING / POCKET TAPE ORIENTATION


PERFORMANCE GRAPHS




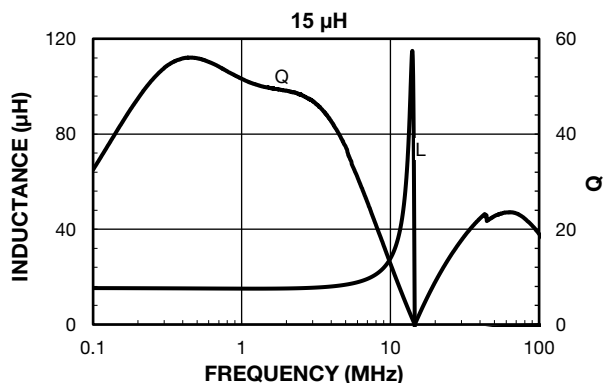
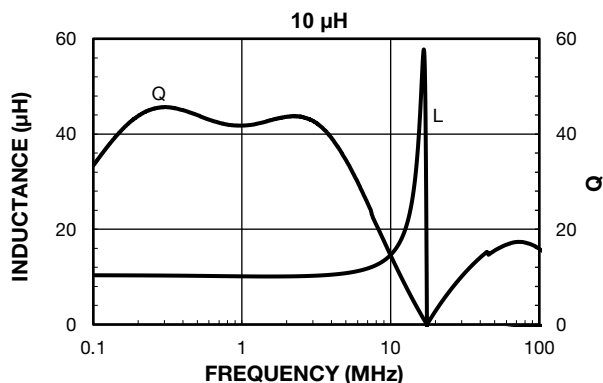
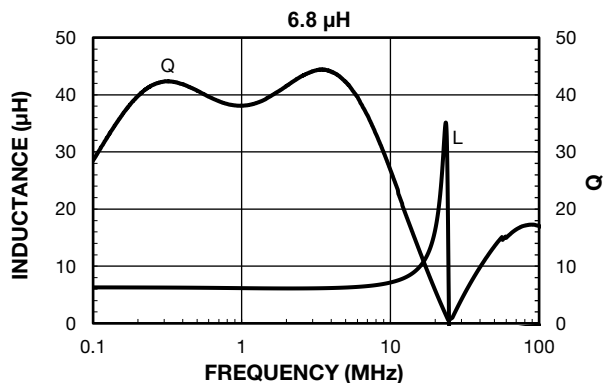
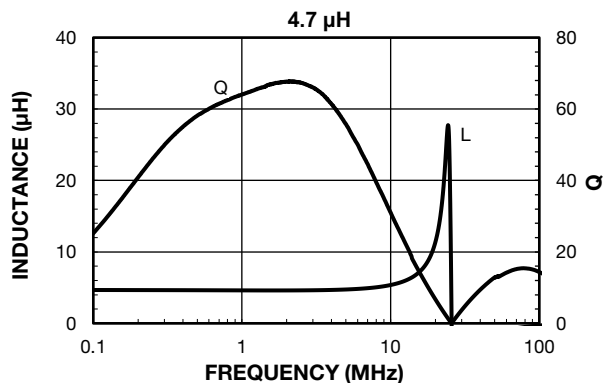
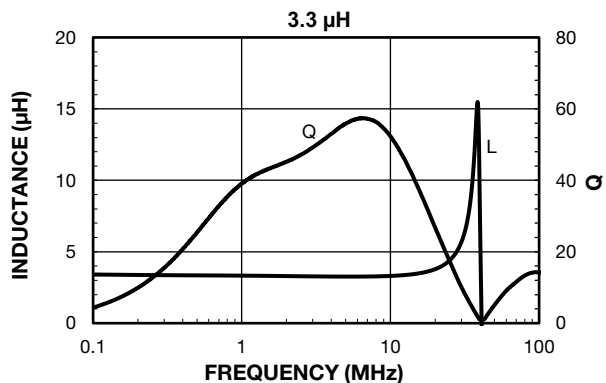
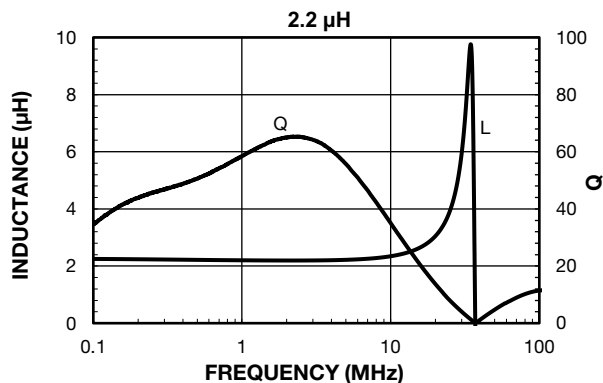
PERFORMANCE GRAPHS



PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY




PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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