



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



## DESIGN SUPPORT TOOLS

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3D  
Models  
AvailableDesign Tools  
Available

## STANDARD ELECTRICAL SPECIFICATIONS

| L <sub>0</sub><br>INDUCTANCE<br>± 20 %<br>AT 100 kHz,<br>0.25 V, 0 A<br>(μH) | DCR<br>TYP.<br>25 °C<br>(mΩ) | DCR<br>MAX.<br>25 °C<br>(mΩ) | HEAT<br>RATING<br>CURRENT<br>DC TYP.<br>(A) <sup>(1)</sup> | SATURATION<br>CURRENT<br>DC TYP.<br>(A) <sup>(2)</sup> | SRF<br>TYP.<br>(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 +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) = 75 V
- (1) DC current (A) that will cause an approximate ΔT of 40 °C
- (2) DC current (A) that will cause L<sub>0</sub> to drop approximately 20 %

## FEATURES

- High temperature, up to 155 °C
- Shielded construction
- Excellent DC/DC energy storage up to 1 MHz. Filter inductor applications up the SRF (see Standard Electrical Specifications table).
- Lowest DCR/μH, in this package size
- Handles high transient current spikes without saturation
- Ultra low buzz noise, due to composite construction
- IHLP design. PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

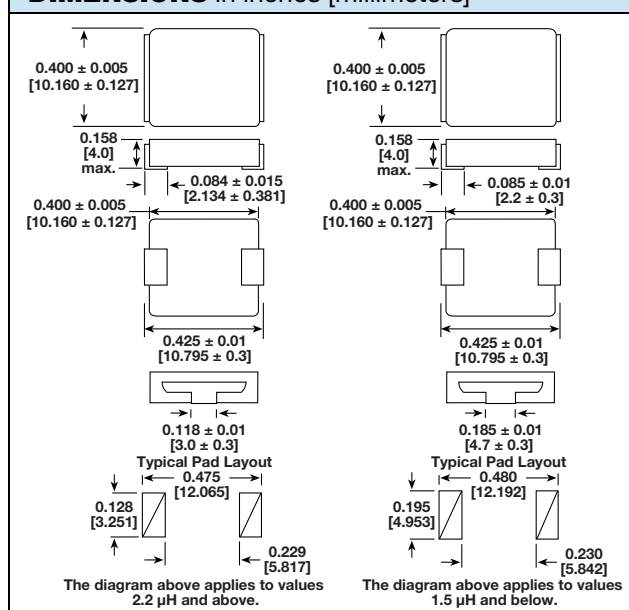


**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

## APPLICATIONS

- PDA / 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)

## DIMENSIONS in inches [millimeters]



## DESCRIPTION

| IHLP-4040DZ-51 | 4.7 μH           | ± 20 %               | ER           | e3                             |
|----------------|------------------|----------------------|--------------|--------------------------------|
| MODEL          | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

## GLOBAL PART NUMBER

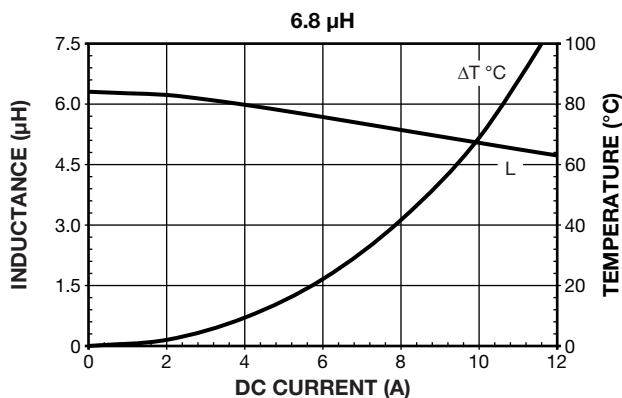
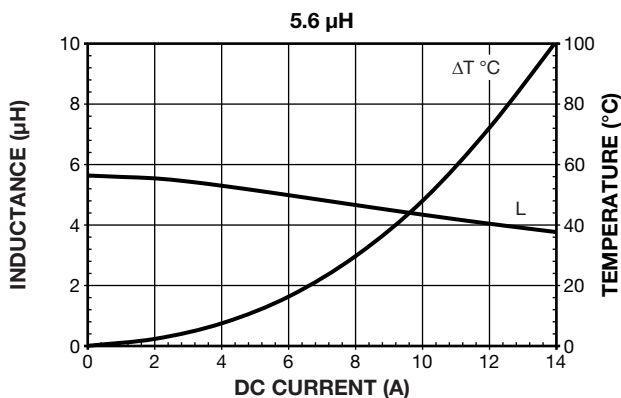
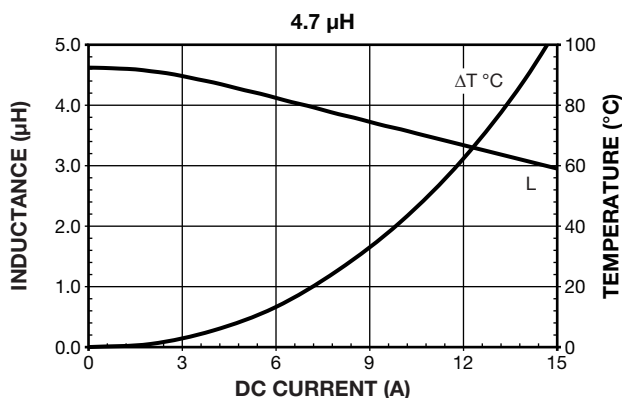
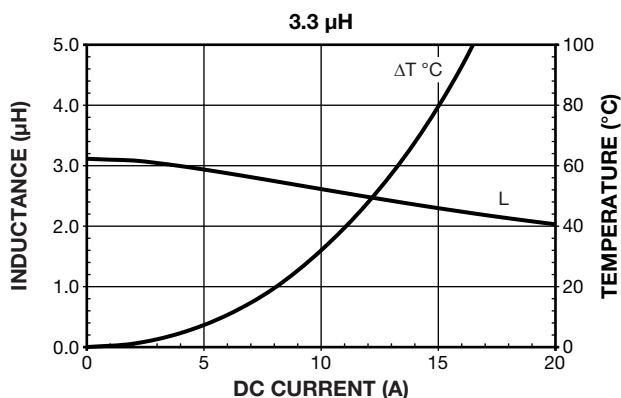
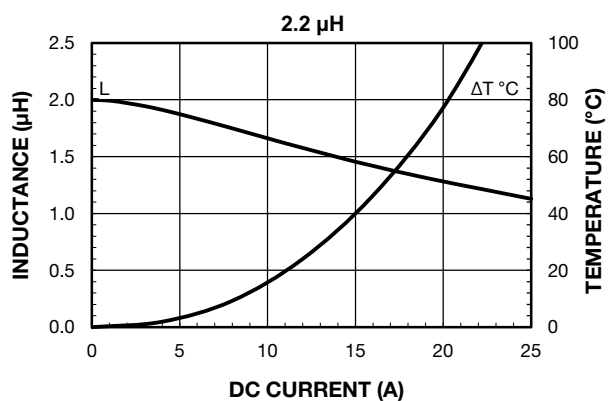
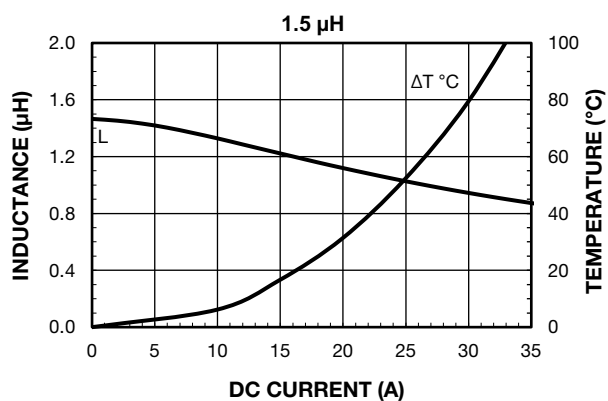
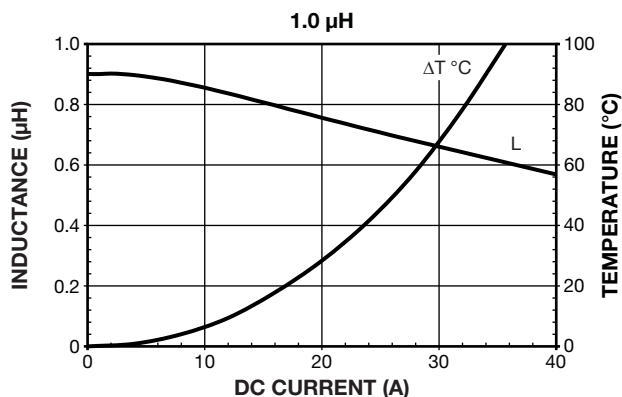
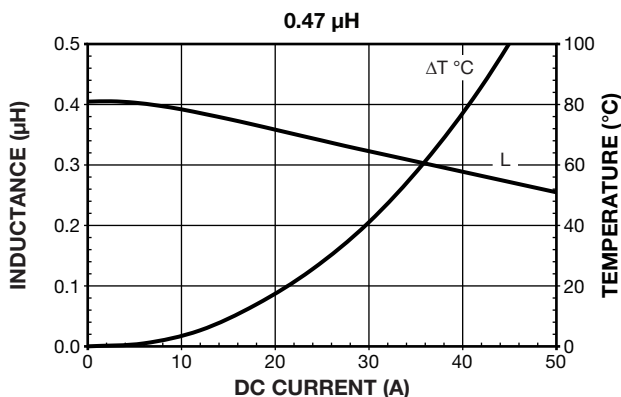
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| I              | H | L | P | 4    | 0 | 4 | 0 | D | Z | E            | R | 4                | R | 7 | M    | 5      | 1 |
| PRODUCT FAMILY |   |   |   | SIZE |   |   |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | TOL. | SERIES |   |

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

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

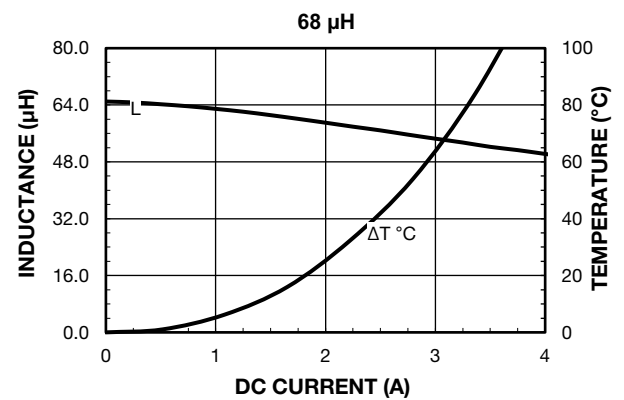
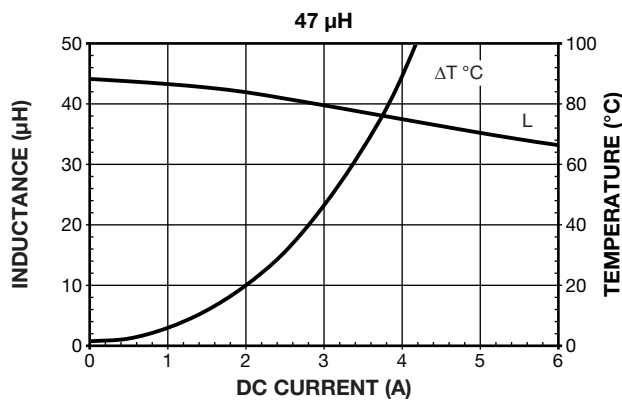
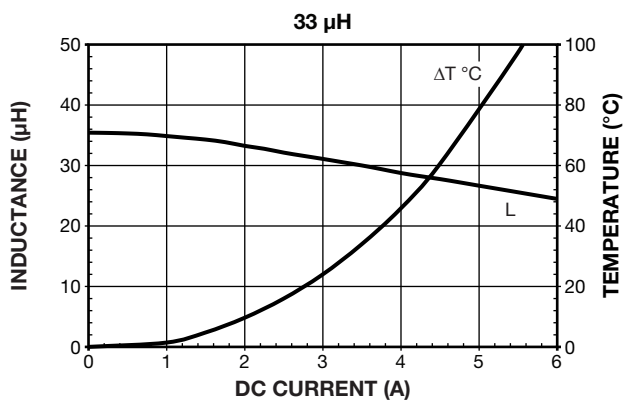
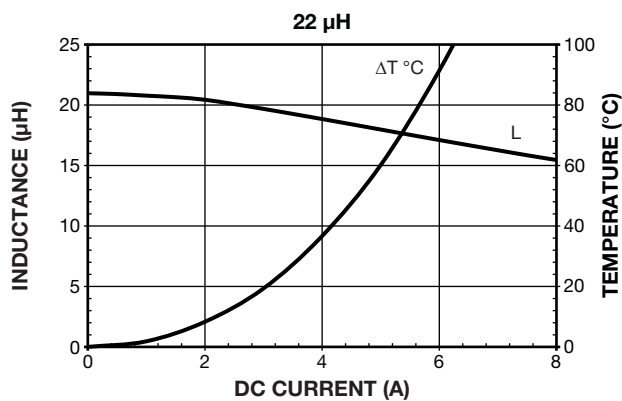
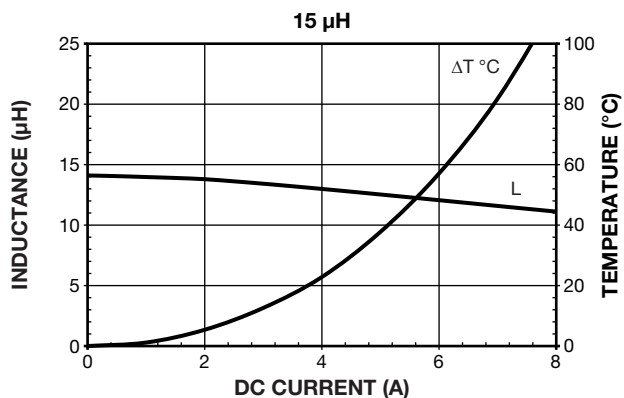
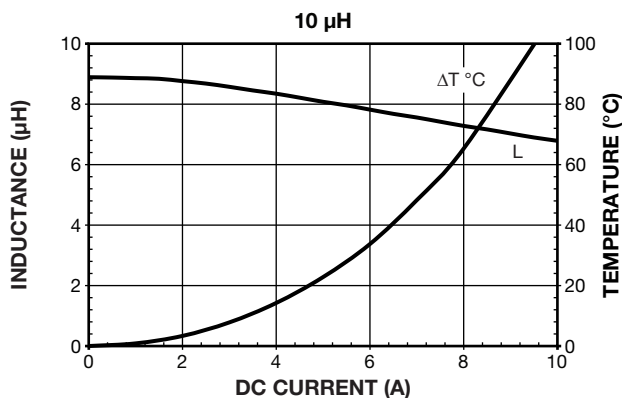


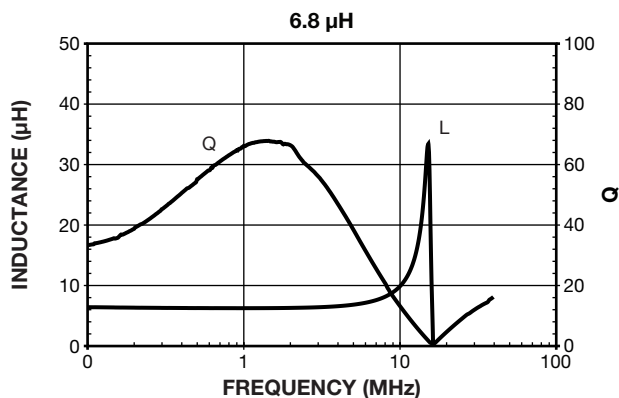
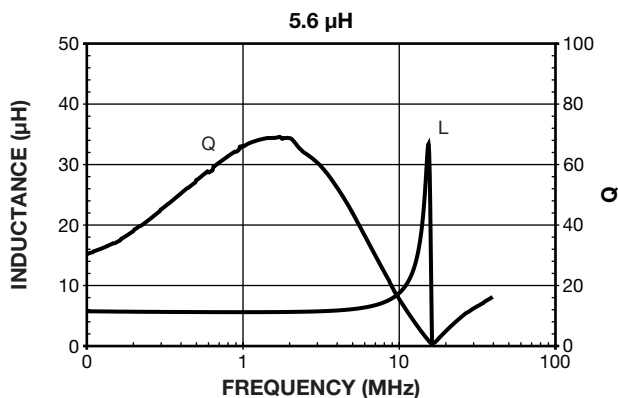
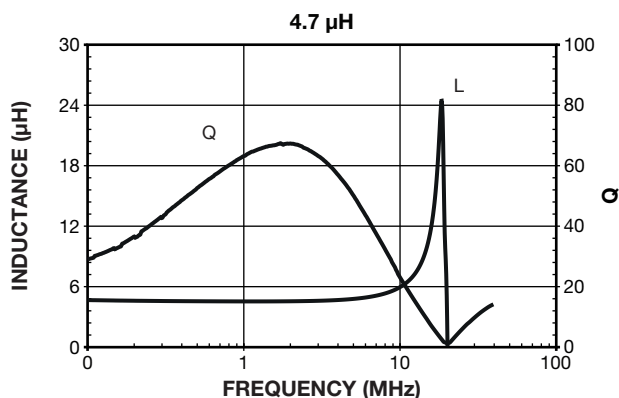
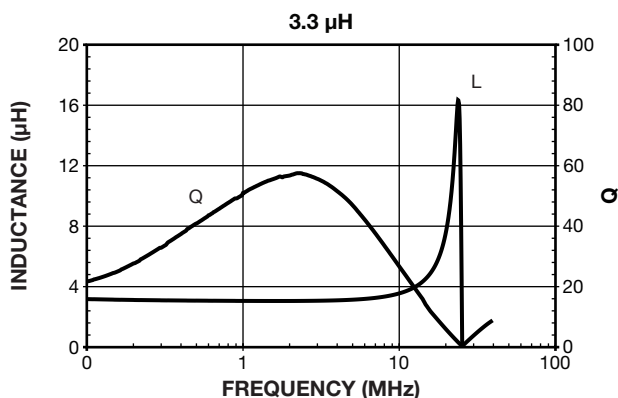
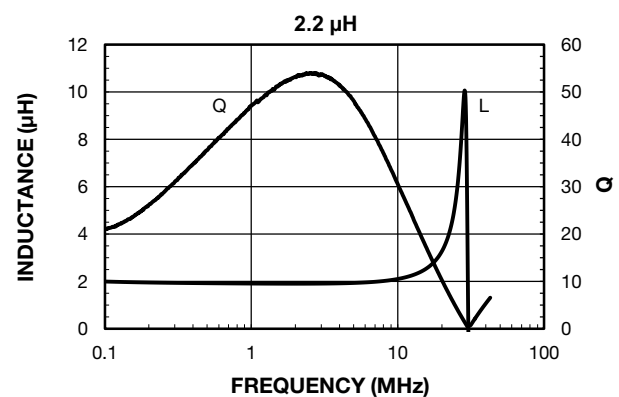
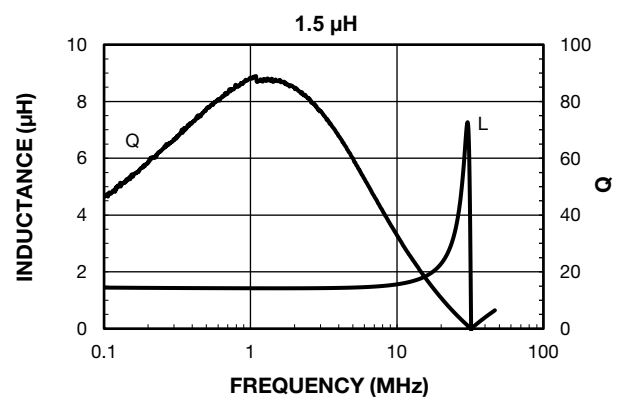
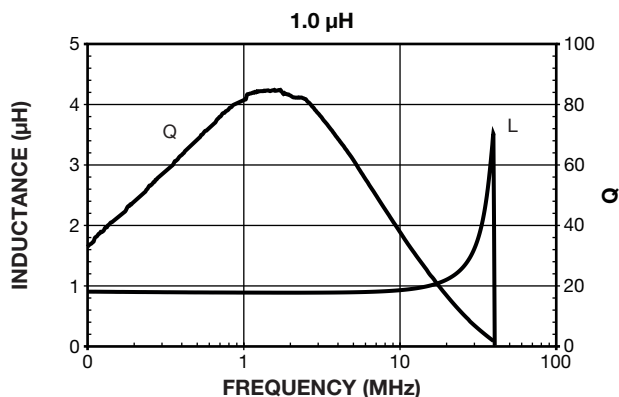
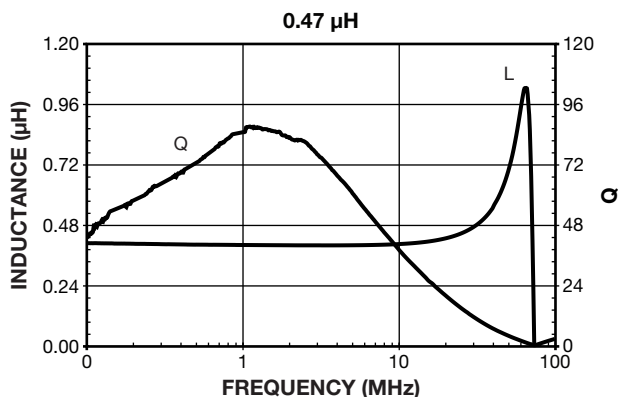
PERFORMANCE GRAPHS





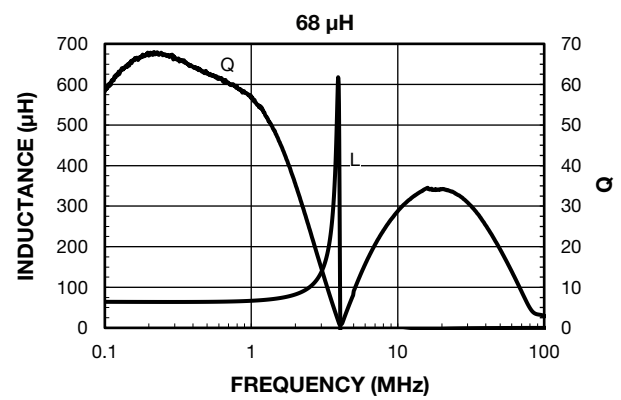
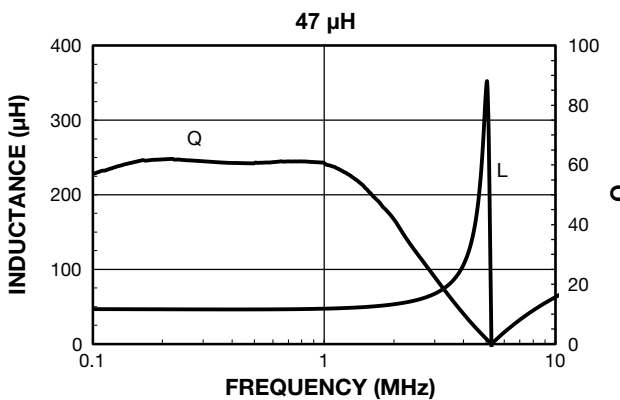
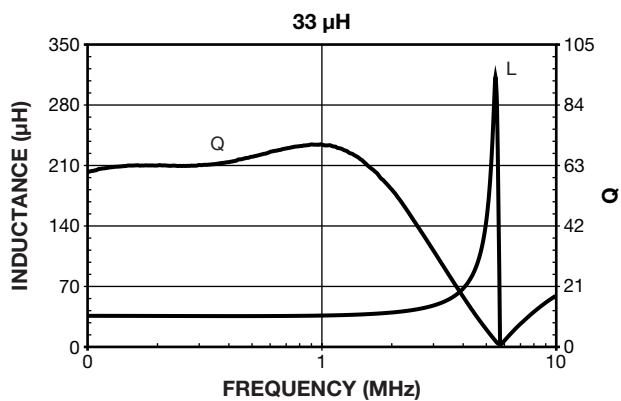
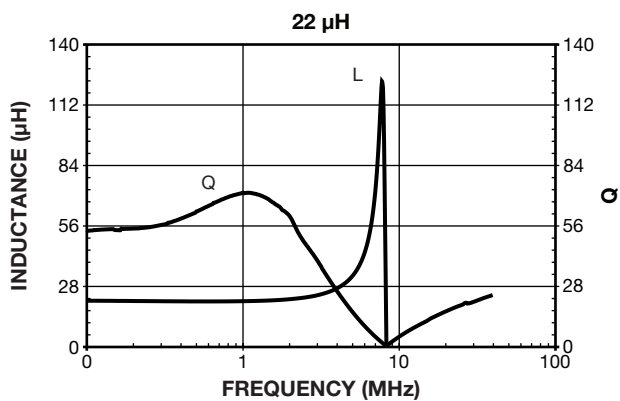
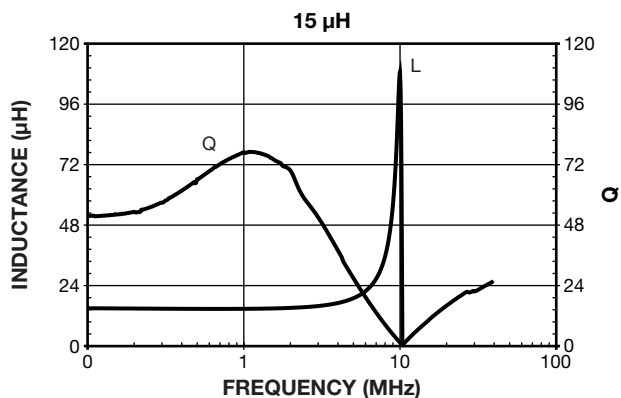
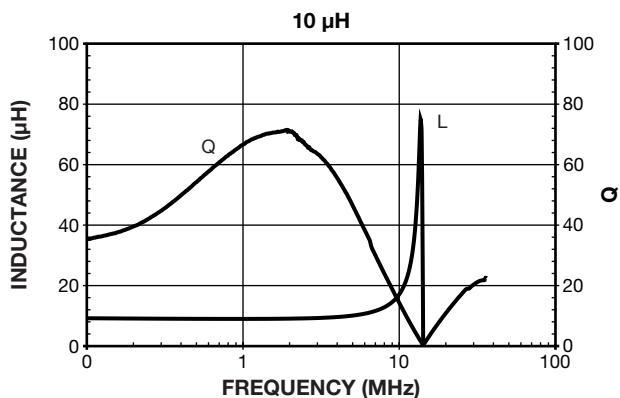
PERFORMANCE GRAPHS



**PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY**




PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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