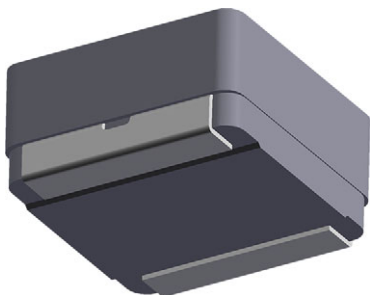


## IHLP® Automotive Inductors, Wide Terminal for High Shock and Vibration



### FEATURES

- 13.2 mm x 12.8 mm x 6.4 mm size
- Wide terminal for improved mechanical stability and shock and vibration performance
- High temperature up to 155 °C
- Magnetically shielded construction
- AEC-Q200 qualified
- Material categorization:  
for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE

**RoHS**  
COMPLIANT

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

### LINKS TO ADDITIONAL RESOURCES



Product Page

### APPLICATIONS

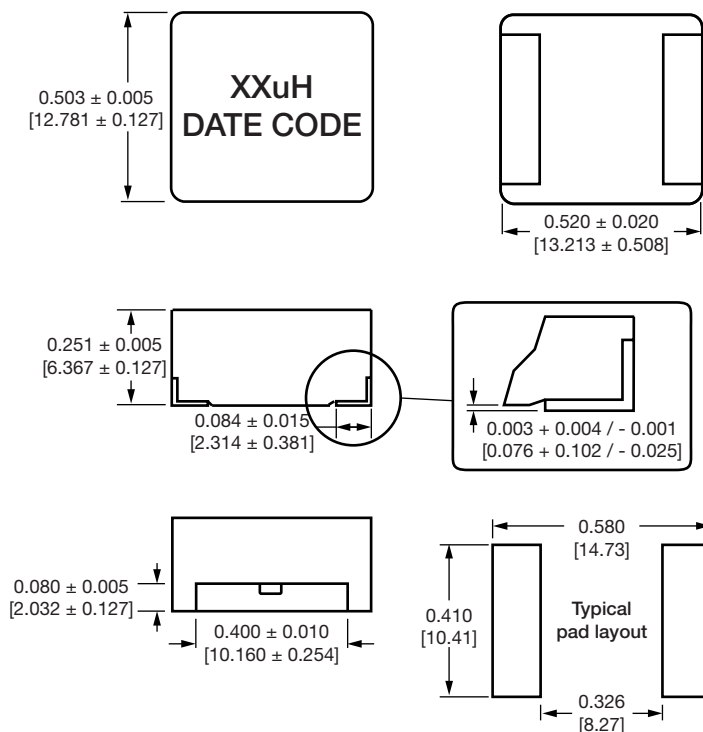
- Engine and transmission control units
- DC/DC converters for infotainment, navigation systems, lighting
- Noise suppression and filtering
- 50 g shock and vibration applications

### STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER        | L <sub>0</sub> INDUCTANCE<br>± 20 %<br>AT 100 kHz, 0.25 V, 0 A<br>(μH) | DCR<br>TYP.<br>25 °C<br>(mΩ) | DCR<br>MAX.<br>25 °C<br>(mΩ) | HEAT RATING<br>CURRENT<br>DC TYP.<br>(A) <sup>(1)</sup> | SATURATION CURRENT<br>DC TYP.<br>(A) |                          | SRF<br>TYP.<br>(MHz) |
|--------------------|------------------------------------------------------------------------|------------------------------|------------------------------|---------------------------------------------------------|--------------------------------------|--------------------------|----------------------|
|                    |                                                                        |                              |                              |                                                         | 20 % DROP <sup>(2)</sup>             | 30 % DROP <sup>(3)</sup> |                      |
| IHLP505WFDE_R22M5A | 0.22                                                                   | 0.73                         | 0.81                         | 66                                                      | 68                                   | 95                       | 113                  |
| IHLP505WFDE_R33M5A | 0.33                                                                   | 0.83                         | 0.92                         | 62                                                      | 44                                   | 57                       | 79.9                 |
| IHLP505WFDE_R47M5A | 0.47                                                                   | 1.05                         | 1.16                         | 54                                                      | 42                                   | 55                       | 65.6                 |
| IHLP505WFDE_R56M5A | 0.56                                                                   | 1.24                         | 1.33                         | 50                                                      | 32                                   | 45                       | 63.1                 |
| IHLP505WFDE_R68M5A | 0.68                                                                   | 1.33                         | 1.42                         | 40                                                      | 29                                   | 41                       | 48.1                 |
| IHLP505WFDE_1R0M5A | 1                                                                      | 1.65                         | 1.77                         | 40                                                      | 26                                   | 40                       | 33.4                 |
| IHLP505WFDE_1R2M5A | 1.2                                                                    | 1.98                         | 2.12                         | 29                                                      | 24.5                                 | 34                       | 32                   |
| IHLP505WFDE_1R5M5A | 1.5                                                                    | 2.4                          | 2.57                         | 27.5                                                    | 23.5                                 | 35                       | 29.2                 |
| IHLP505WFDE_1R8M5A | 1.8                                                                    | 2.75                         | 2.94                         | 26                                                      | 22.5                                 | 32                       | 25.9                 |
| IHLP505WFDE_2R2M5A | 2.2                                                                    | 3.43                         | 3.67                         | 25.5                                                    | 21.5                                 | 30                       | 23.3                 |
| IHLP505WFDE_3R3M5A | 3.3                                                                    | 5.08                         | 5.44                         | 20.2                                                    | 16.7                                 | 23                       | 17.8                 |
| IHLP505WFDE_4R7M5A | 4.7                                                                    | 7.41                         | 7.93                         | 19.7                                                    | 18.5                                 | 26                       | 15.8                 |
| IHLP505WFDE_5R6M5A | 5.6                                                                    | 8.51                         | 9.11                         | 16.8                                                    | 14.2                                 | 20                       | 12.3                 |
| IHLP505WFDE_6R8M5A | 6.8                                                                    | 11.3                         | 12.09                        | 14.9                                                    | 14.1                                 | 20                       | 13.4                 |
| IHLP505WFDE_7R8M5A | 7.8                                                                    | 12.6                         | 13.48                        | 13.5                                                    | 8.5                                  | 12                       | 13.4                 |
| IHLP505WFDE_8R2M5A | 8.2                                                                    | 13.2                         | 14.12                        | 13.2                                                    | 7.6                                  | 11                       | 10.3                 |
| IHLP505WFDE_100M5A | 10                                                                     | 16.6                         | 17.76                        | 12.1                                                    | 7.8                                  | 11                       | 10.7                 |
| IHLP505WFDE_120M5A | 12                                                                     | 19                           | 20.33                        | 11.4                                                    | 7.9                                  | 11                       | 9.5                  |
| IHLP505WFDE_150M5A | 15                                                                     | 24                           | 25.68                        | 10.1                                                    | 7.7                                  | 11                       | 8.8                  |
| IHLP505WFDE_220M5A | 22                                                                     | 31.3                         | 33.49                        | 9                                                       | 6.3                                  | 9                        | 6.6                  |
| IHLP505WFDE_330M5A | 33                                                                     | 46.03                        | 49.25                        | 6.9                                                     | 6.2                                  | 9                        | 5.5                  |
| IHLP505WFDE_470M5A | 47                                                                     | 77                           | 79.6                         | 5.6                                                     | 4.5                                  | 6.4                      | 3.9                  |
| IHLP505WFDE_820M5A | 82                                                                     | 141.1                        | 150.98                       | 3.7                                                     | 3.7                                  | 5.2                      | 3                    |
| IHLP505WFDE_101M5A | 100                                                                    | 175                          | 187                          | 3.1                                                     | 4.3                                  | 5.1                      | 2.8                  |

#### 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, 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<sub>0</sub> to drop approximately 20 %
- (3) DC current (A) that will cause L<sub>0</sub> to drop approximately 30 %

**DIMENSIONS** in inches [millimeters]

**DESCRIPTION**

|                      |                              |                              |              |                                |
|----------------------|------------------------------|------------------------------|--------------|--------------------------------|
| <b>IHLP505WFD-5A</b> | <b>4.7 <math>\mu</math>H</b> | <b><math>\pm 20\%</math></b> | <b>EK</b>    | <b>e3</b>                      |
| MODEL                | INDUCTANCE VALUE             | INDUCTANCE TOLERANCE         | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

|                |                    |                           |                          |                       |            |
|----------------|--------------------|---------------------------|--------------------------|-----------------------|------------|
| <b>I H L P</b> | <b>5 0 5 W F D</b> | <b>E K</b>                | <b>4 R 7</b>             | <b>M</b>              | <b>5 A</b> |
| PRODUCT FAMILY | SIZE               | PACKAGE CODE              | INDUCTANCE               | INDUCTANCE TOLERANCE  | SERIES     |
|                |                    | <b>EK</b> = tape and reel | <b>4R7</b> = 4.7 $\mu$ H | <b>M</b> = $\pm 20\%$ |            |

**PACKAGE CODE OPTIONS**

**EK** = tape and reel packaging (500 pcs on 13-inch reel)

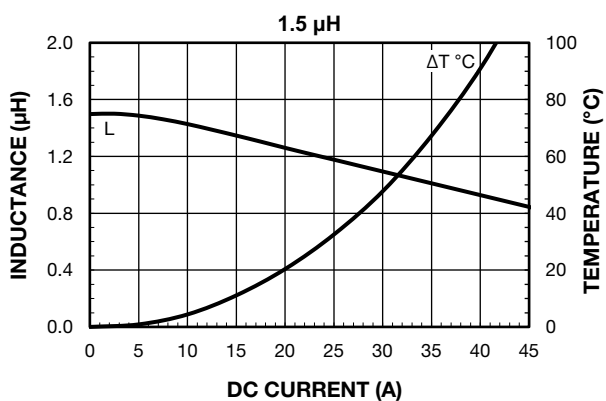
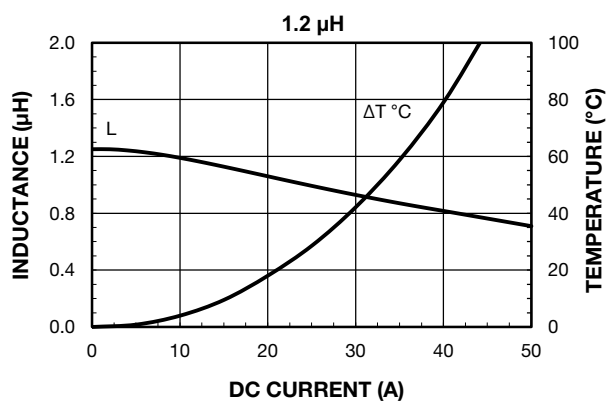
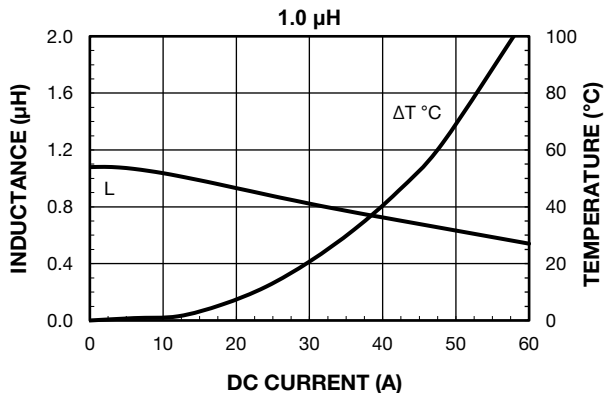
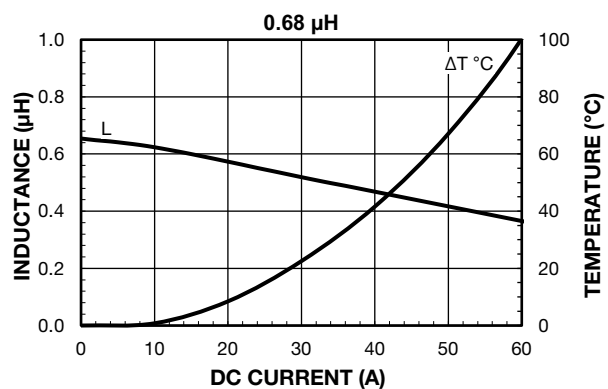
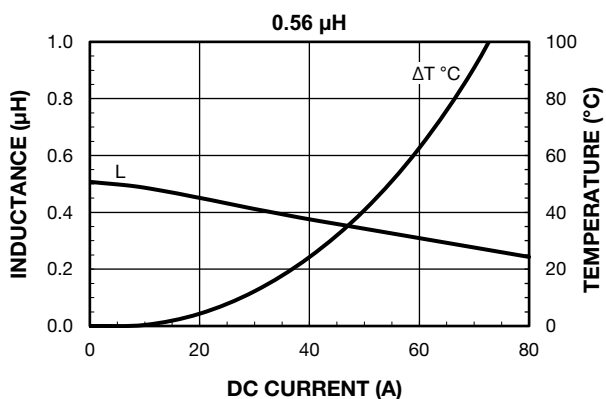
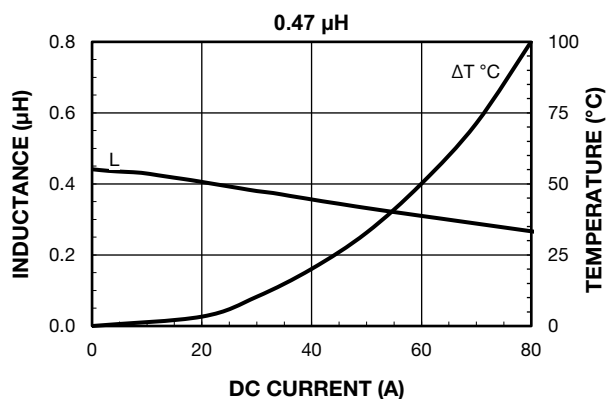
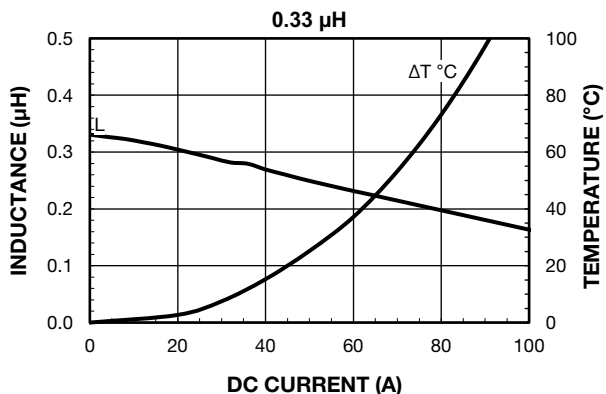
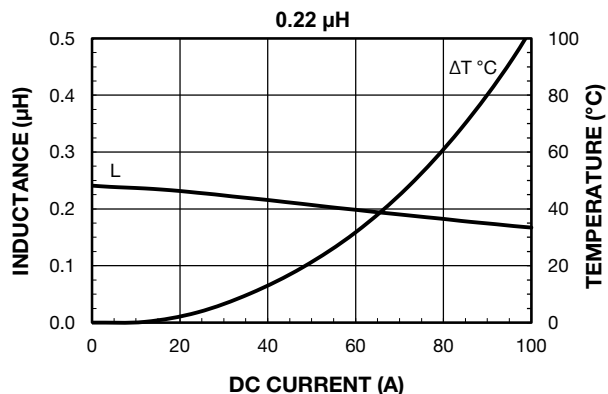
**ER** = tape and reel packaging (250 pcs on 13-inch reel)

**Note**

- For additional packaging details see ["Packaging Methods"](#)

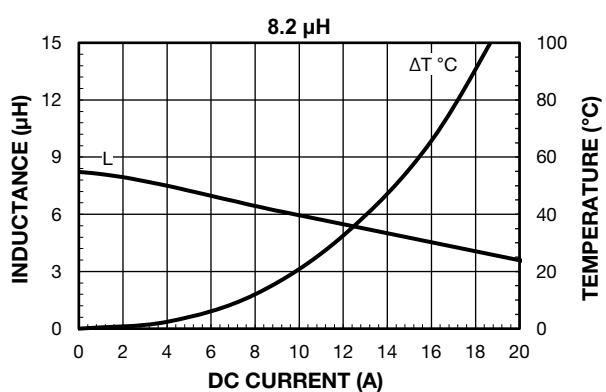
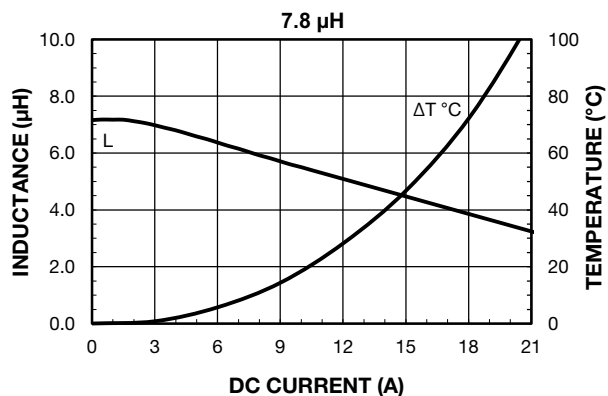
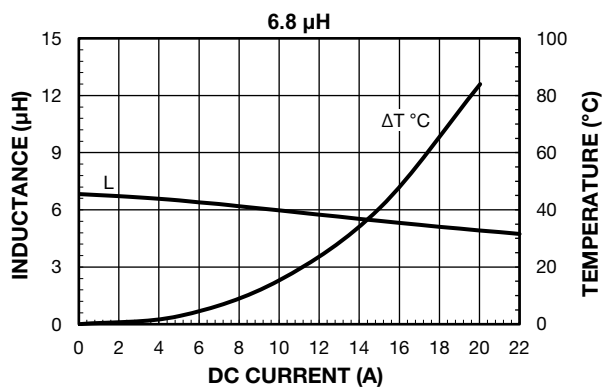
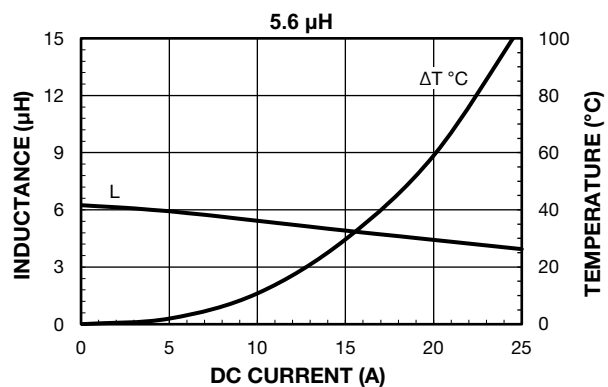
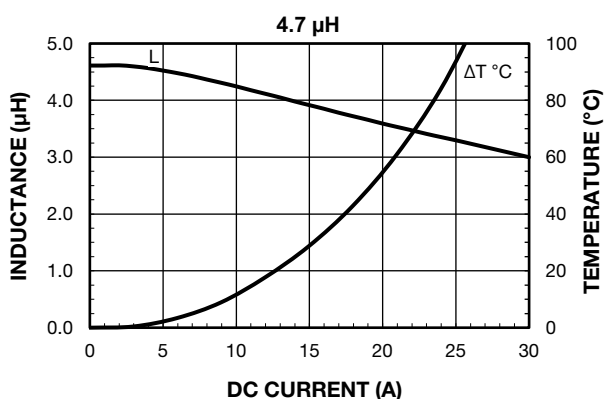
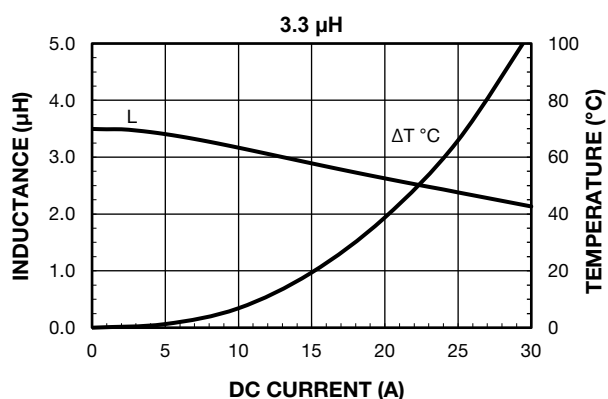
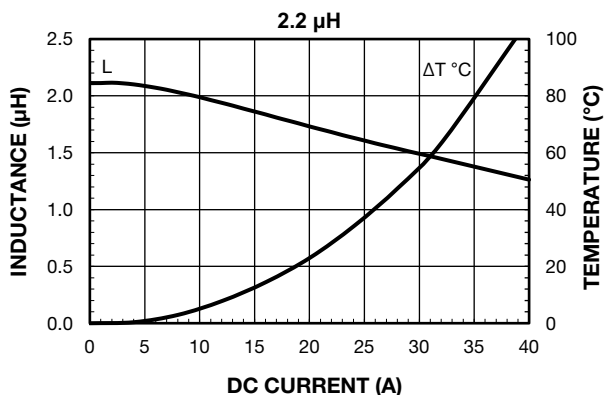
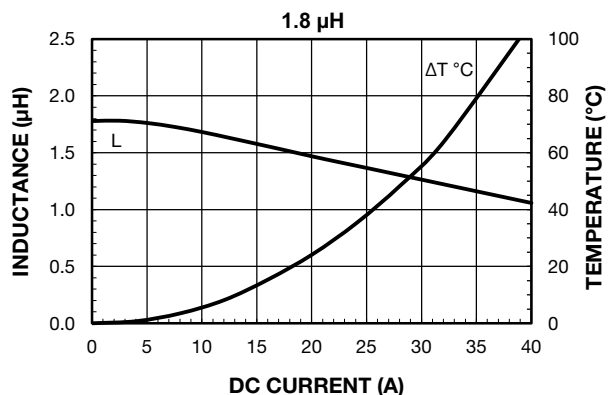


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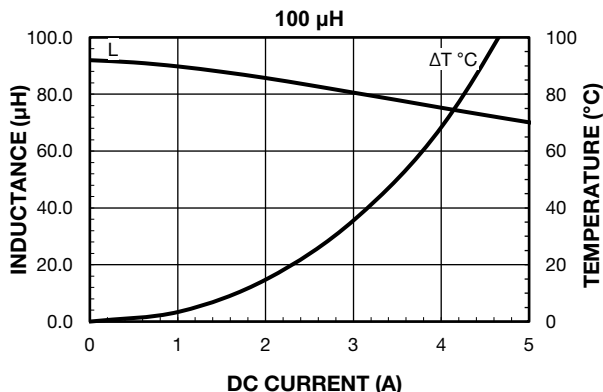
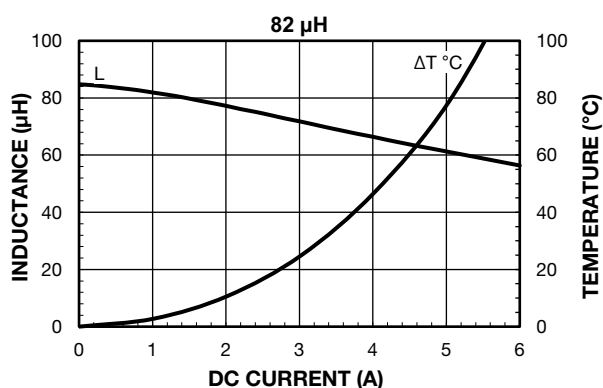
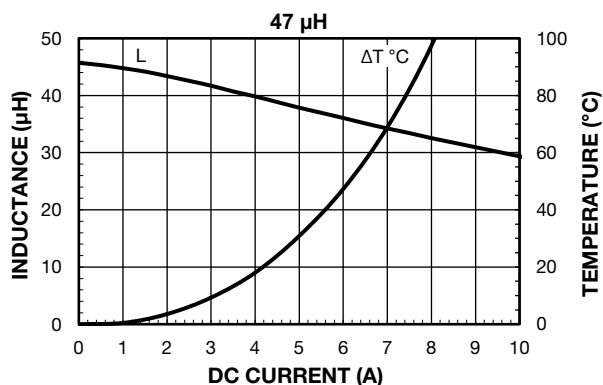
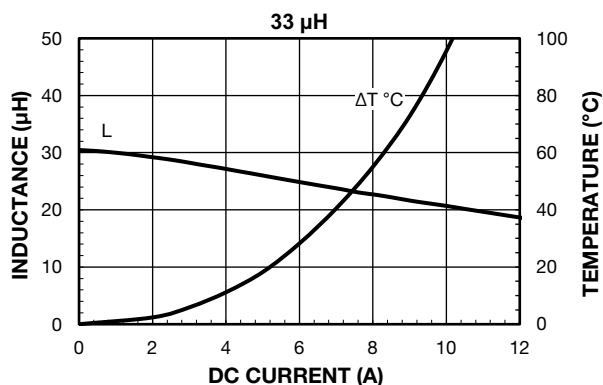
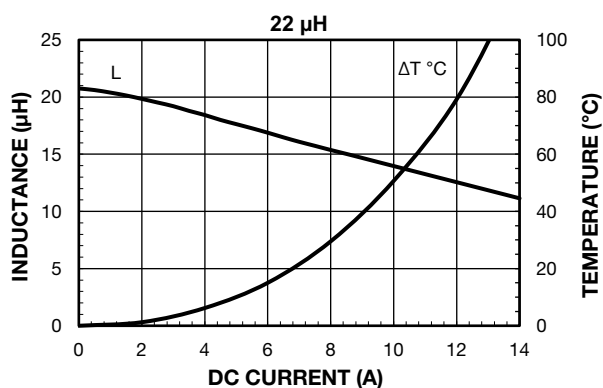
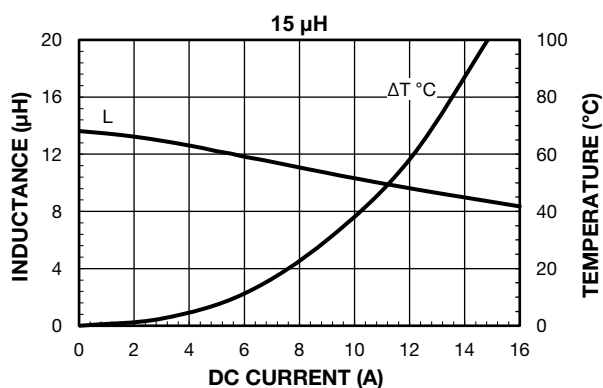
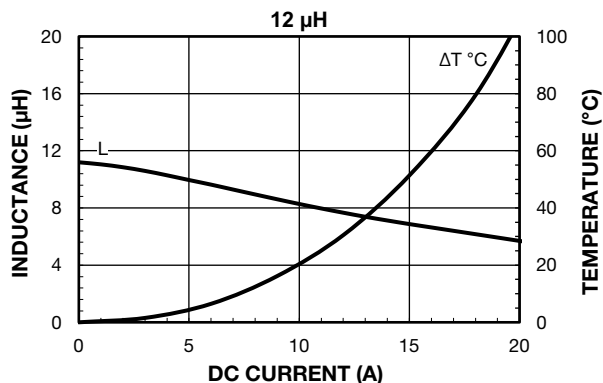
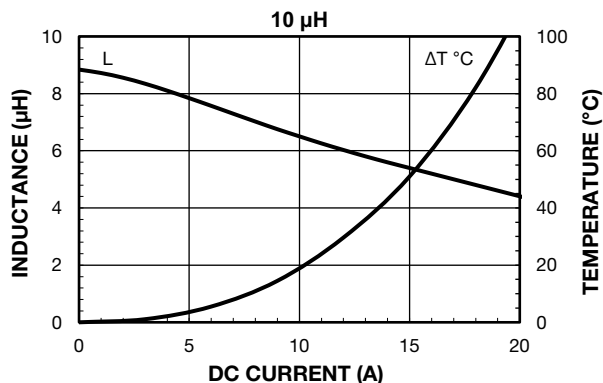


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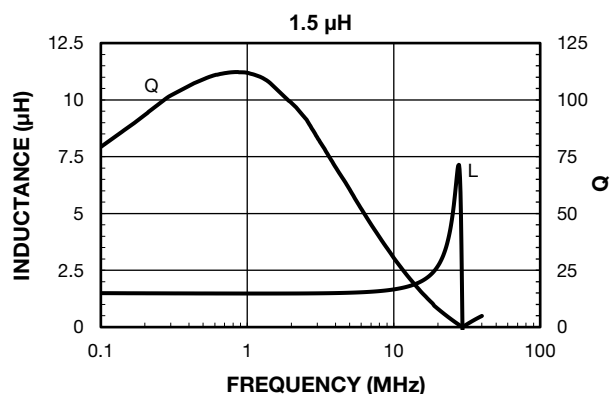
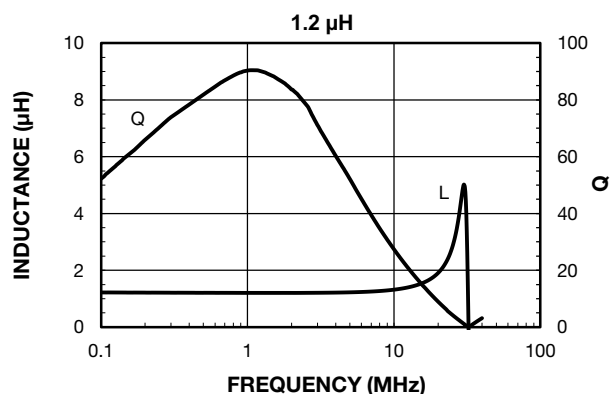
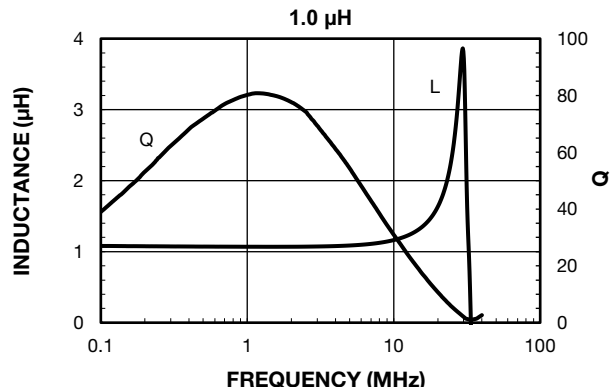
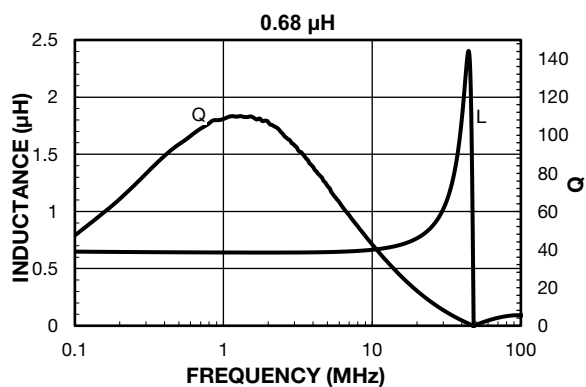
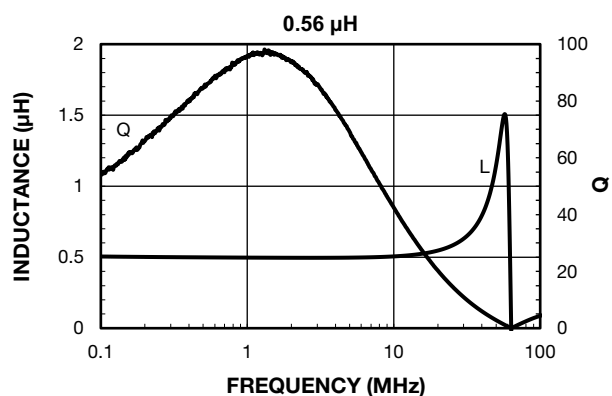
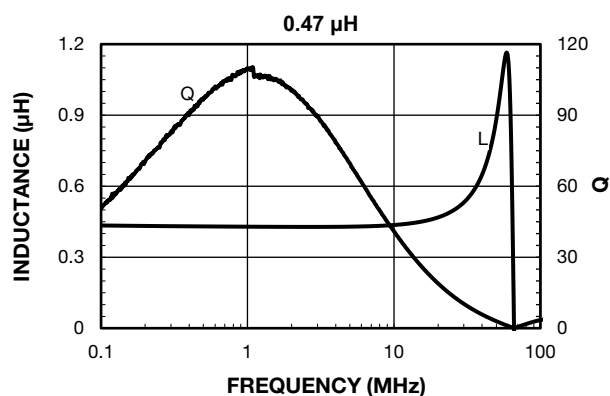
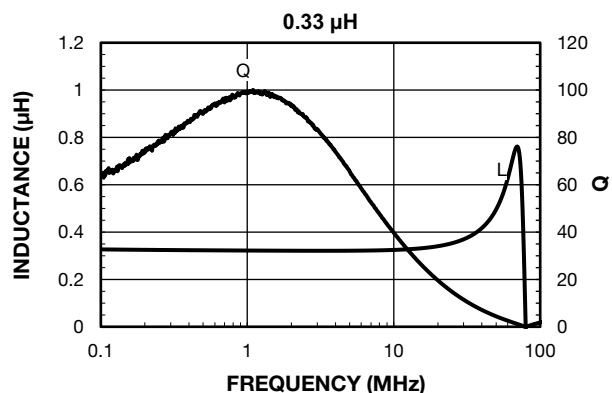
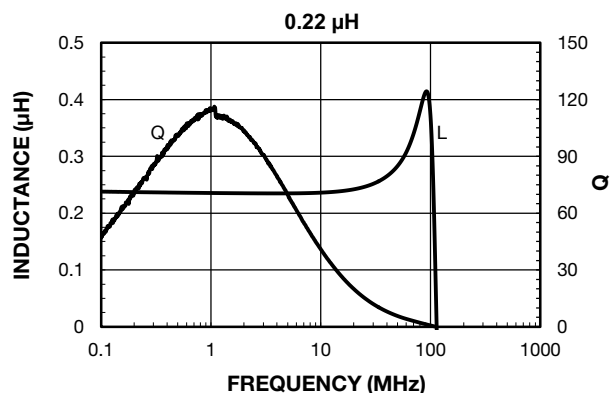


PERFORMANCE GRAPHS



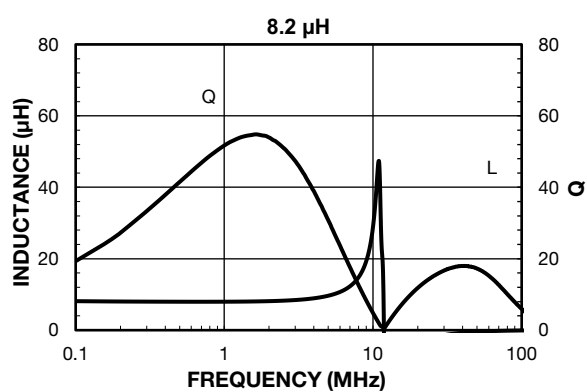
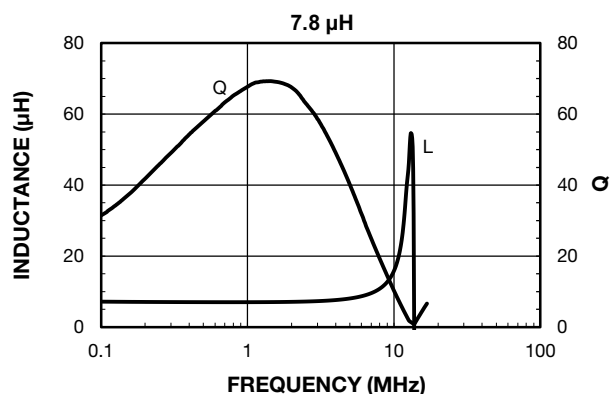
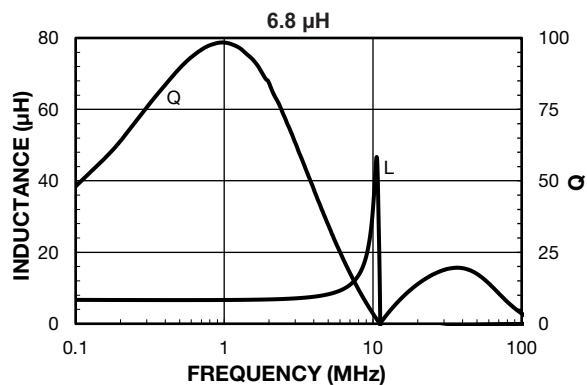
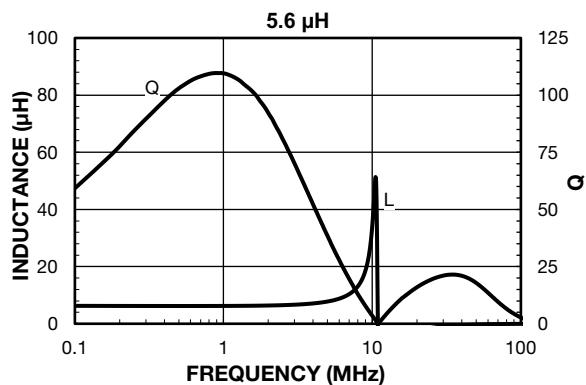
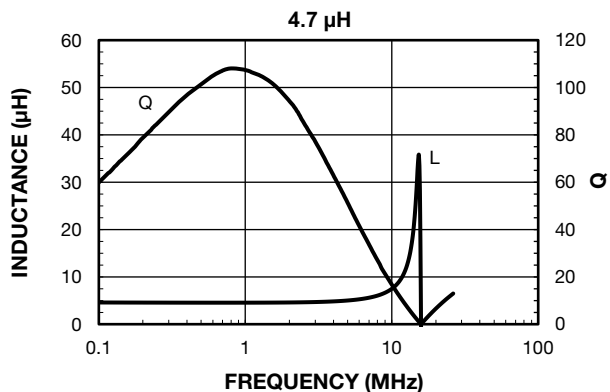
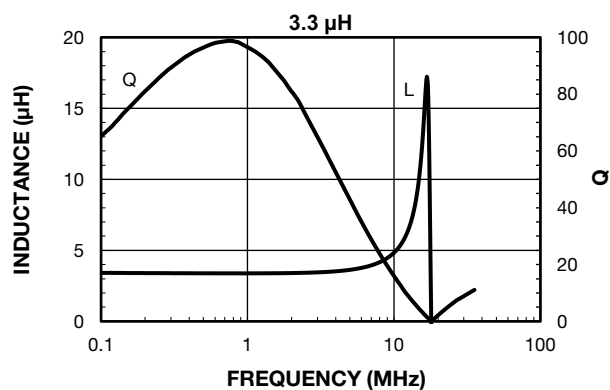
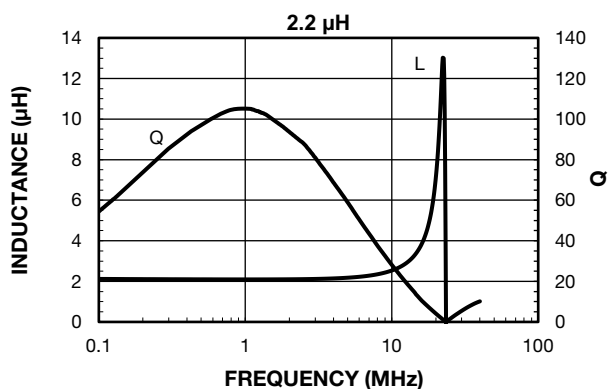
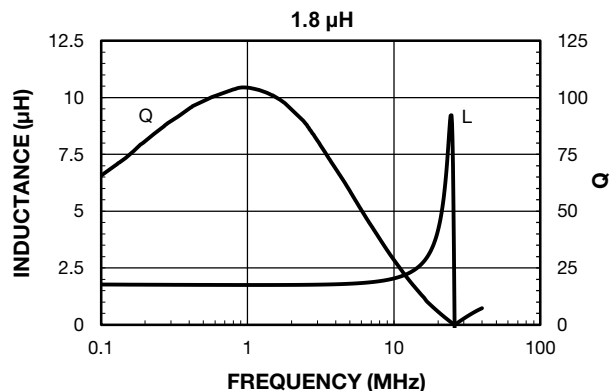


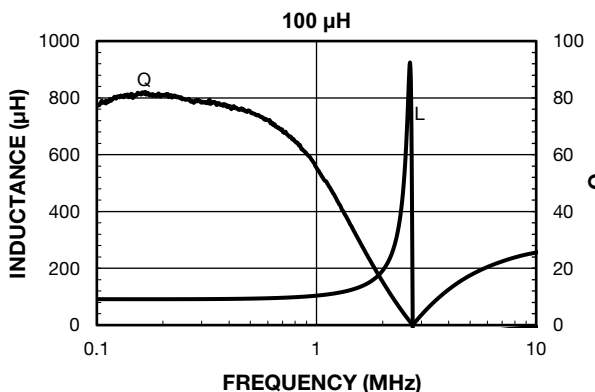
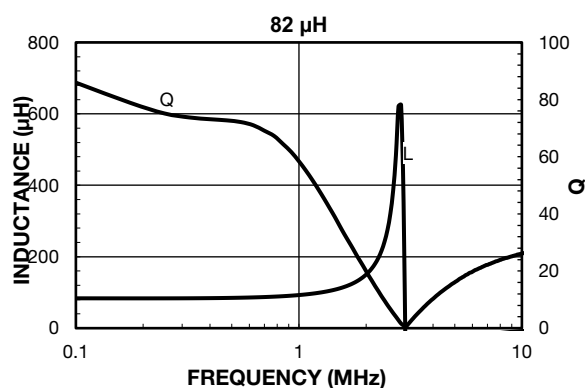
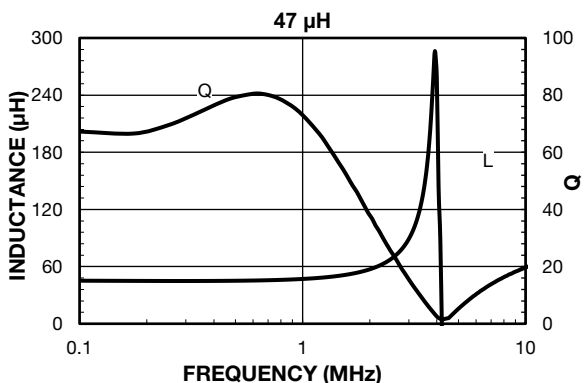
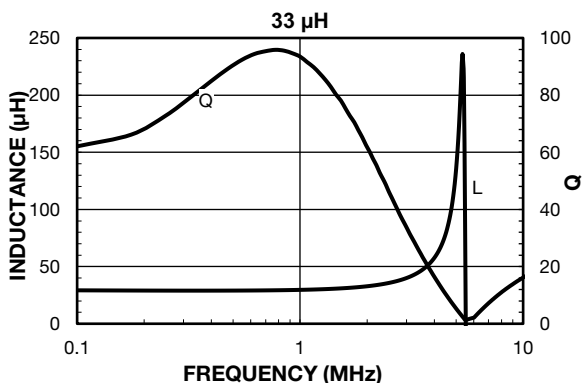
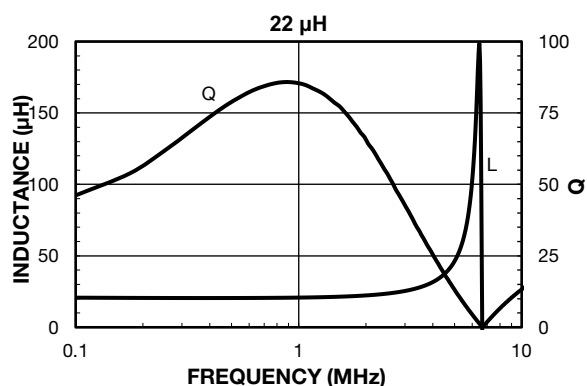
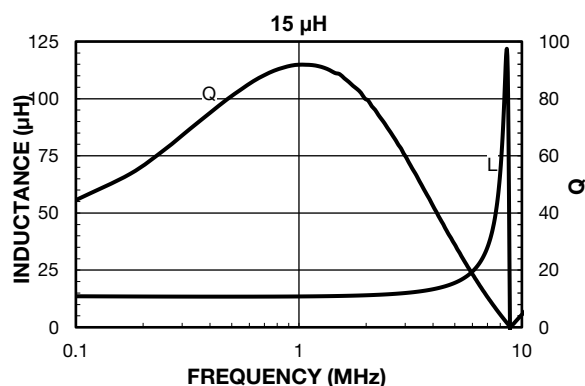
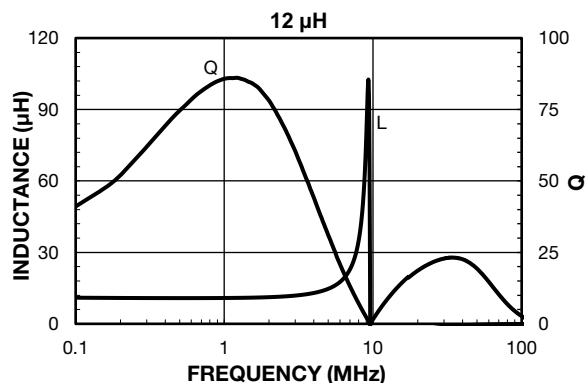
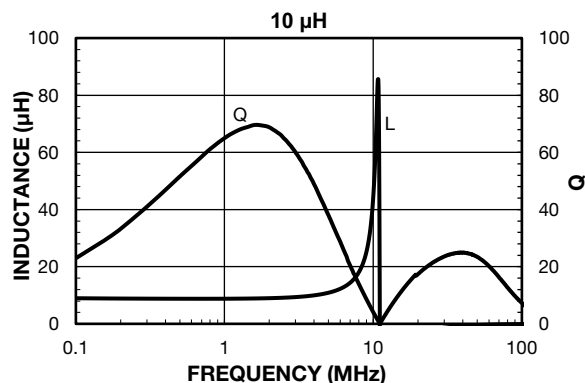
PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY



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




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