



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



## FEATURES

- 6.86 mm x 6.47 mm x 3.0 mm size
- Magnetically shielded construction
- Metal alloy core
- Polarity marking available for EMI sensitive applications (see “EP” package code below for more information)
- Handles high transient current spikes without saturation
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## LINKS TO ADDITIONAL RESOURCES



## APPLICATIONS

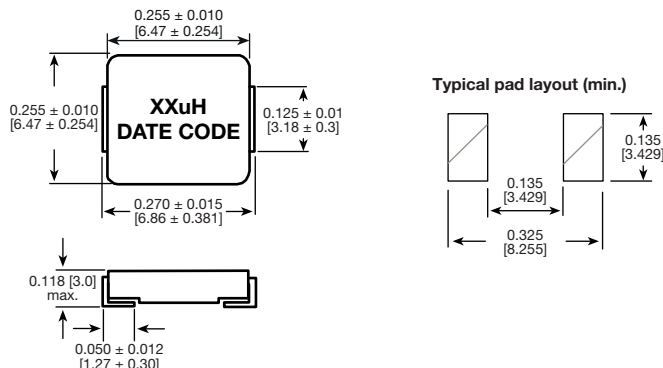
- Automotive domain control units (DCU) and transmission / engine control
- DC/DC converters for infotainment, navigation systems, braking systems, motors, LED lighting
- Power line noise suppression and filtering

## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER        | INDUCTANCE<br>± 20 % (μH)<br>AT 0 A | DCR 25 °C<br>(mΩ) |       | HEAT RATING<br>CURRENT<br>DC TYP. (A) <sup>(1)</sup> | SATURATION<br>CURRENT<br>DC TYP. (A) <sup>(2)</sup> |           | SRF<br>TYP.<br>(MHz) |
|--------------------|-------------------------------------|-------------------|-------|------------------------------------------------------|-----------------------------------------------------|-----------|----------------------|
|                    |                                     | TYP.              | MAX.  |                                                      | 20 % DROP                                           | 30 % DROP |                      |
| IHLP2525CZE_R33M5A | 0.33                                | 3.25              | 3.48  | 22.0                                                 | 16.0                                                | 23.0      | 112                  |
| IHLP2525CZE_R47M5A | 0.47                                | 3.87              | 4.14  | 20.0                                                 | 14.0                                                | 21.0      | 82.4                 |
| IHLP2525CZE_R68M5A | 0.68                                | 5.38              | 5.76  | 16.5                                                 | 17                                                  | 20        | 56.1                 |
| IHLP2525CZE_R82M5A | 0.82                                | 6.75              | 7.22  | 13.8                                                 | 16.8                                                | 22        | 68.6                 |
| IHLP2525CZE_1R0M5A | 1.0                                 | 7.9               | 8.45  | 12                                                   | 13                                                  | 15        | 53.2                 |
| IHLP2525CZE_1R5M5A | 1.5                                 | 12.3              | 13.2  | 10.6                                                 | 11.6                                                | 16        | 45.9                 |
| IHLP2525CZE_2R2M5A | 2.2                                 | 17.1              | 18.3  | 8.1                                                  | 10.8                                                | 12        | 31.2                 |
| IHLP2525CZE_3R3M5A | 3.3                                 | 26.5              | 28.4  | 6.8                                                  | 8.3                                                 | 11        | 28.6                 |
| IHLP2525CZE_4R7M5A | 4.7                                 | 35.9              | 38.4  | 5.6                                                  | 5.6                                                 | 6.5       | 25.5                 |
| IHLP2525CZE_5R6M5A | 5.6                                 | 42.6              | 45.6  | 5.3                                                  | 4.8                                                 | 6.5       | 22.8                 |
| IHLP2525CZE_6R8M5A | 6.8                                 | 53.8              | 57.6  | 4.4                                                  | 4.4                                                 | 5         | 19.6                 |
| IHLP2525CZE_100M5A | 10                                  | 71.9              | 76.9  | 4                                                    | 2.9                                                 | 4         | 14                   |
| IHLP2525CZE_150M5A | 15                                  | 98.9              | 105.9 | 3.7                                                  | 2.8                                                 | 4.5       | 10.4                 |
| IHLP2525CZE_220M5A | 22                                  | 163               | 174   | 2.8                                                  | 2.2                                                 | 3.5       | 8.3                  |

## 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
- <sup>(1)</sup> DC current (A) that will cause an approximate ΔT of 40 °C
- <sup>(2)</sup> DC current (A) that will cause L<sub>0</sub> to drop approximately 20 %

**DIMENSIONS** in inches [millimeters]

**DESCRIPTION**

|                       |                             |                              |              |                                |
|-----------------------|-----------------------------|------------------------------|--------------|--------------------------------|
| <b>IHLP-2525CZ-5A</b> | <b>22 <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>2 5 2 5 C Z</b> | <b>E K</b>         | <b>2 2 0</b>     | <b>M</b>             | <b>5 A</b> |
| PRODUCT FAMILY | SIZE               | PACKAGE CODE       | IMPEDANCE VALUE  | INDUCTANCE TOLERANCE | SERIES     |
|                |                    | EK = tape and reel | 220 = 22 $\mu$ H | M = $\pm 20\%$       |            |

**PACKAGE CODE OPTIONS**

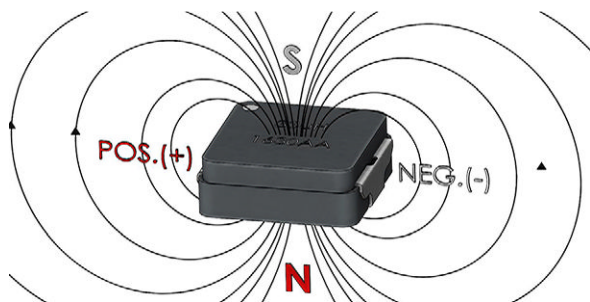
**EK** = tape and reel packaging (2500 pcs on 13-inch reel)  
**ER** = tape and reel packaging (2000 pcs on 13-inch reel)  
**EP** = tape and reel packaging (2000 pcs on 13-inch reel), includes polarity part marking

**Note**

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

## 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.

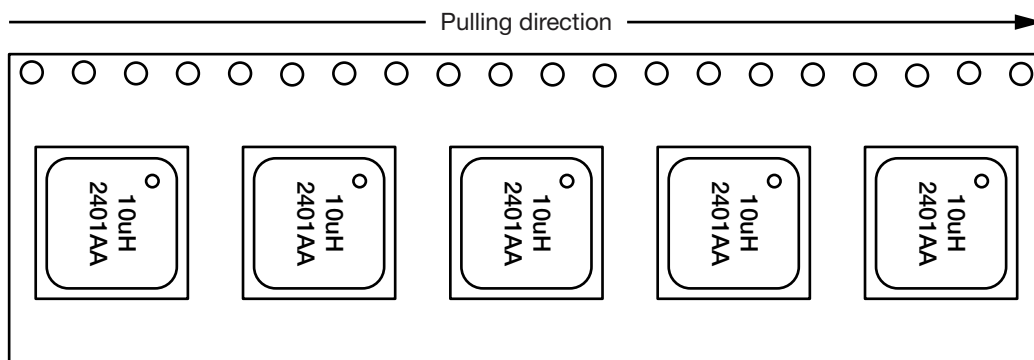
For the IHLP-2525CZ-5A series, the polarity mark also indicates the "start" or "inside" lead of the winding.

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.

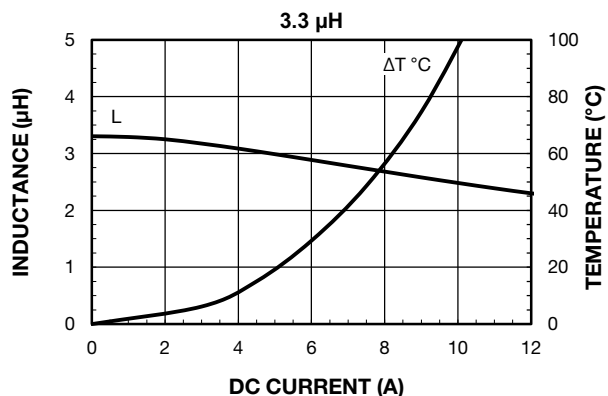
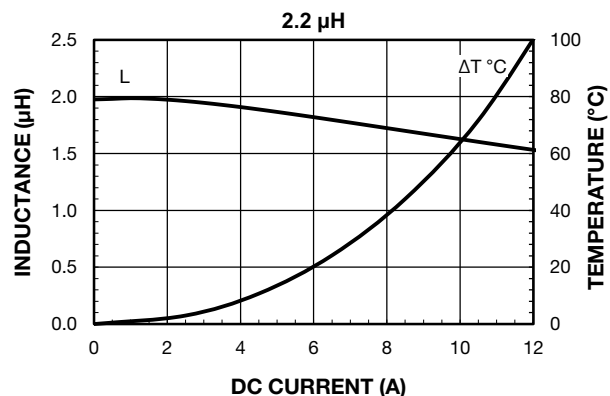
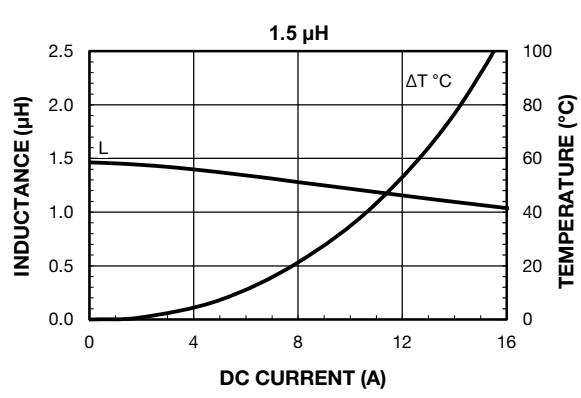
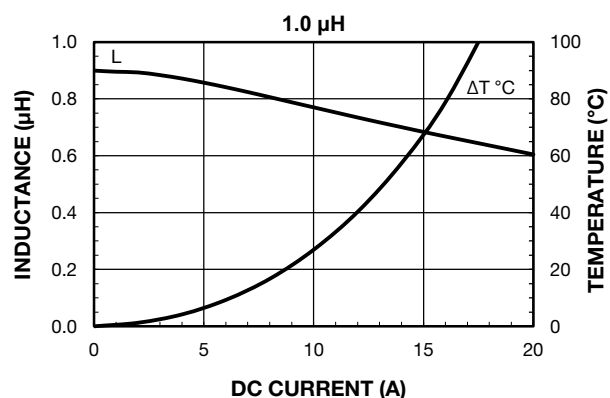
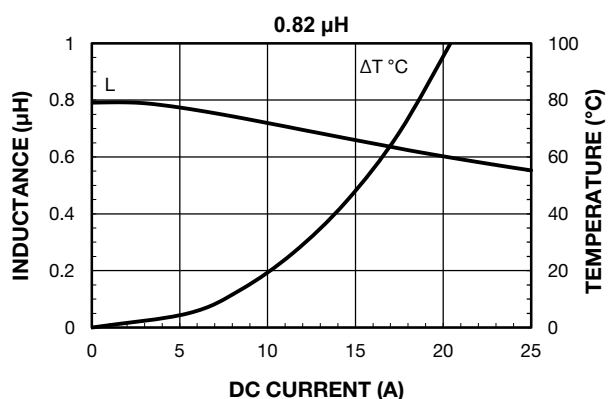
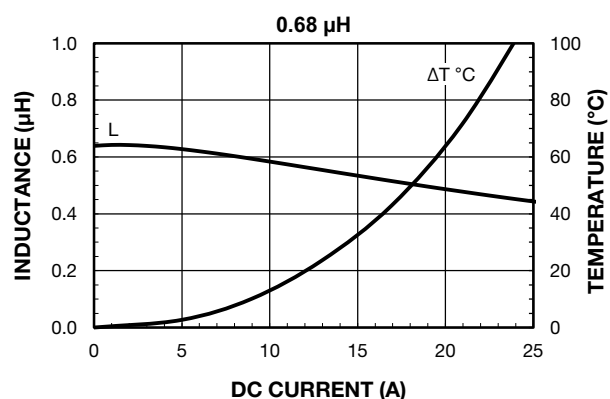
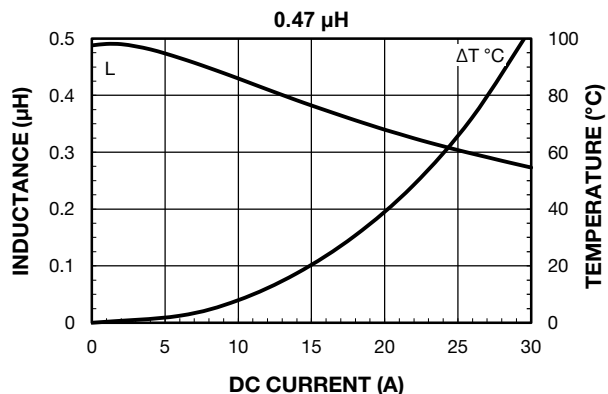
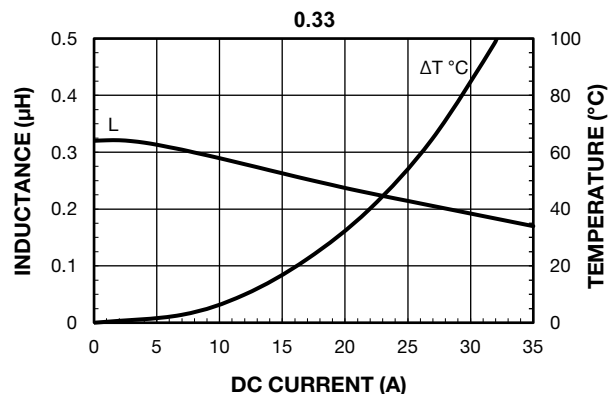
## PART MARKING / POCKET TAPE ORIENTATION

For IHLP with polarity marking option



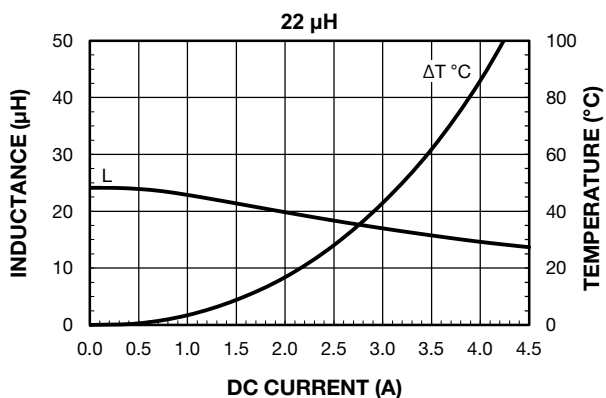
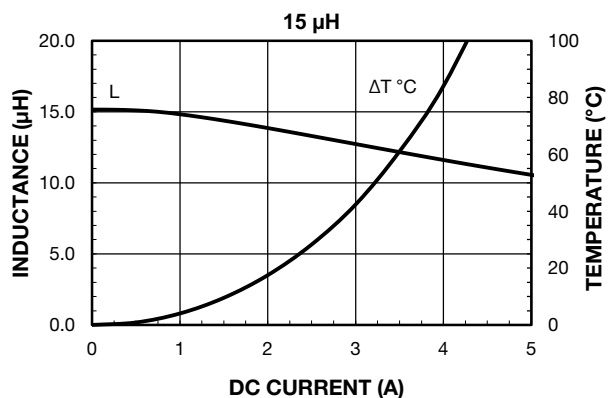
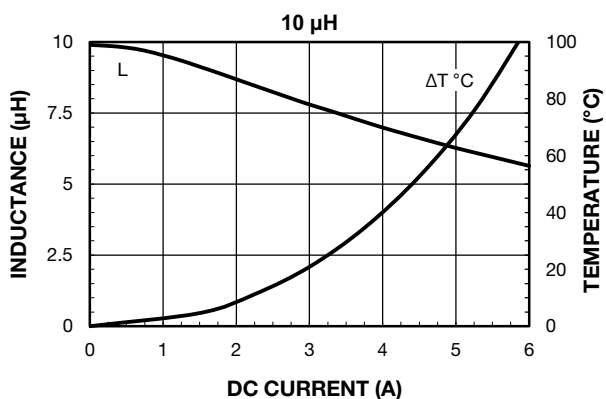
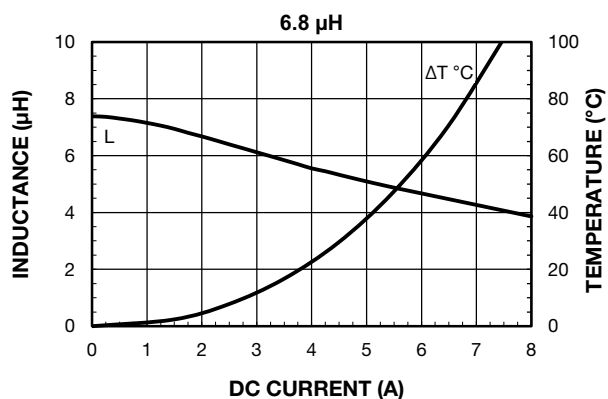
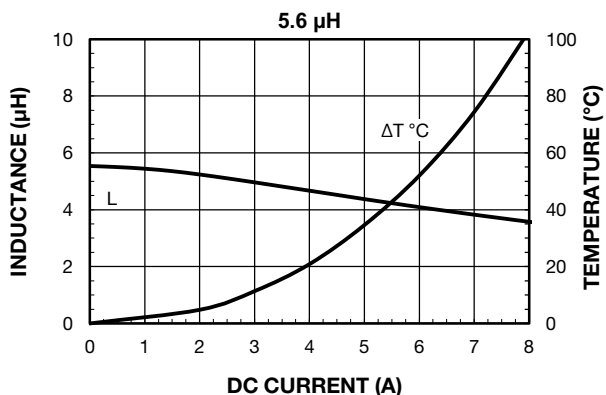
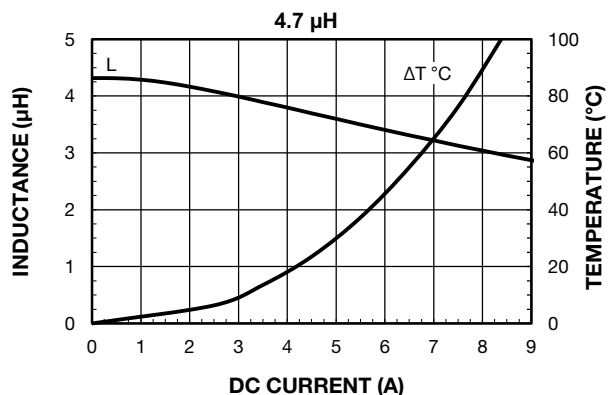


PERFORMANCE GRAPHS



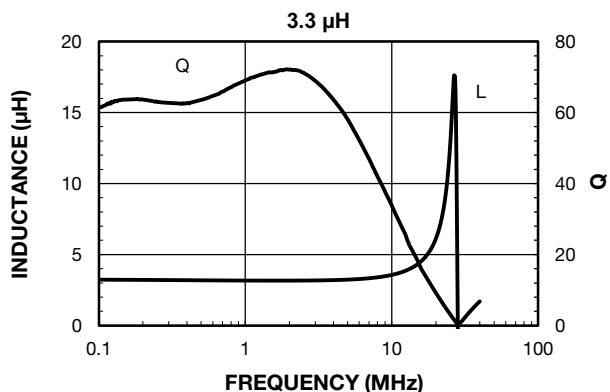
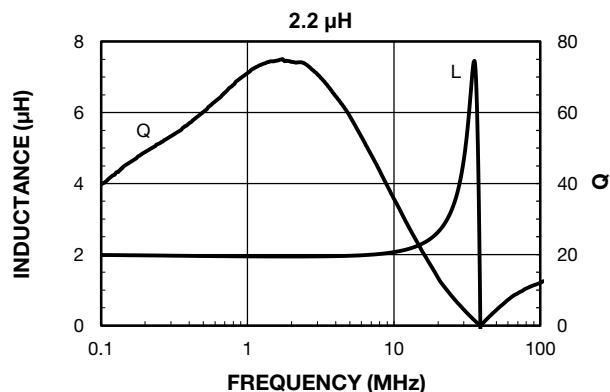
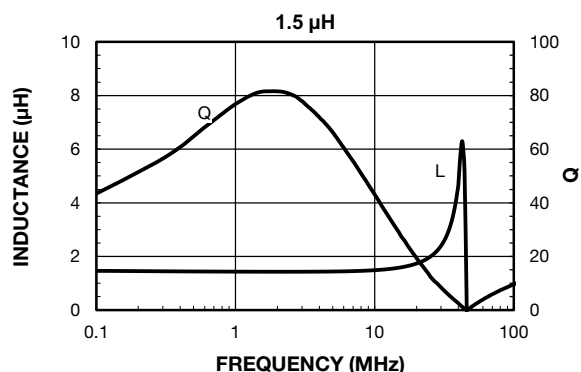
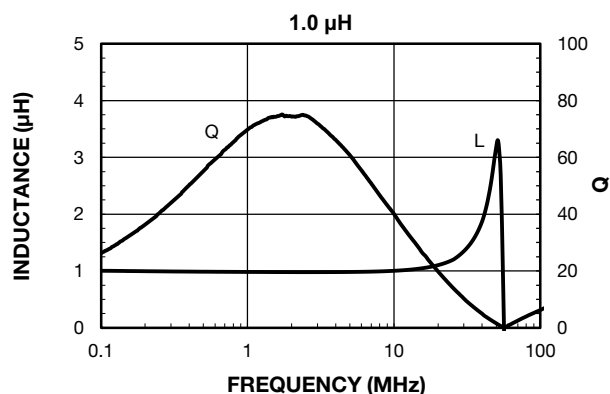
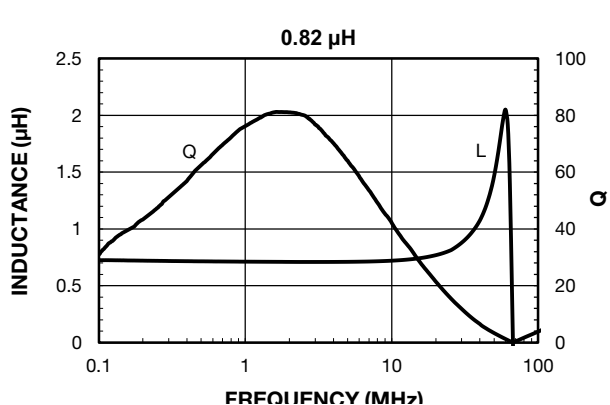
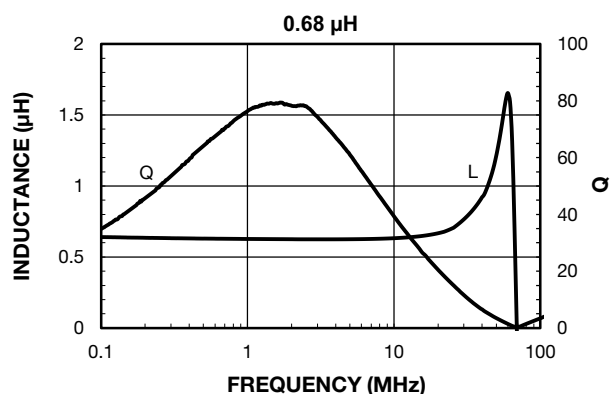
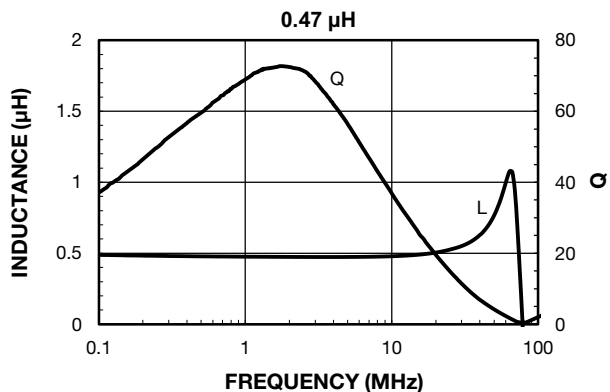
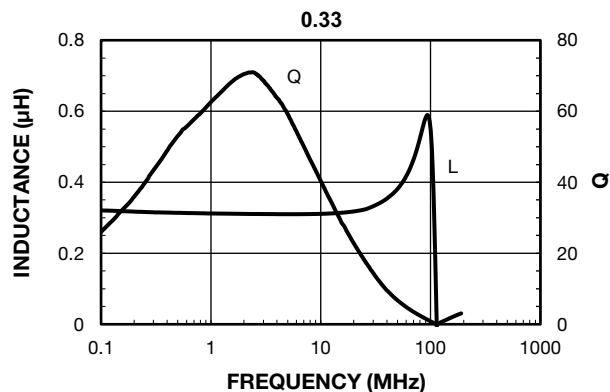


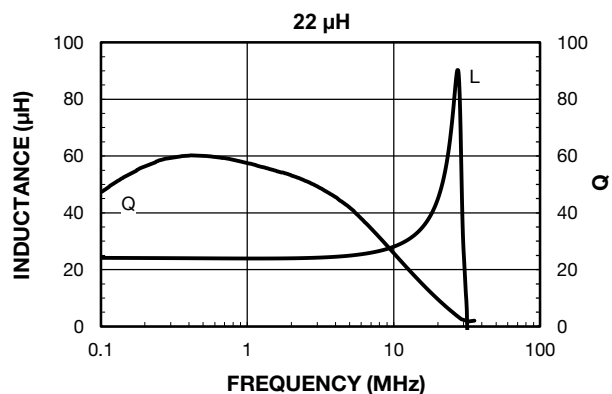
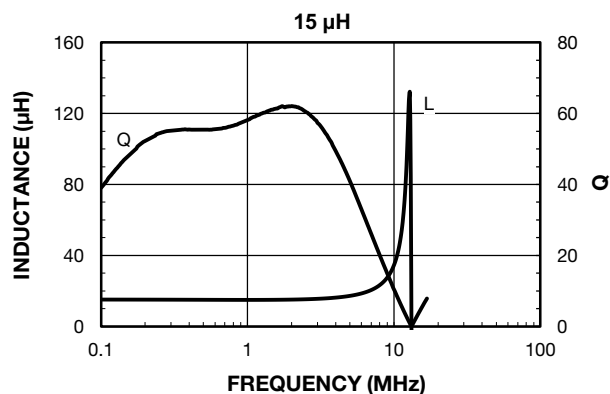
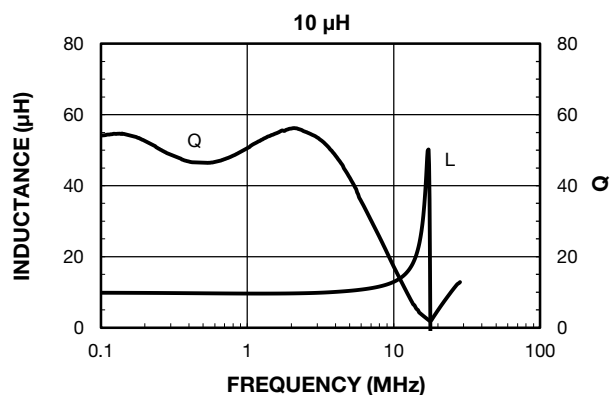
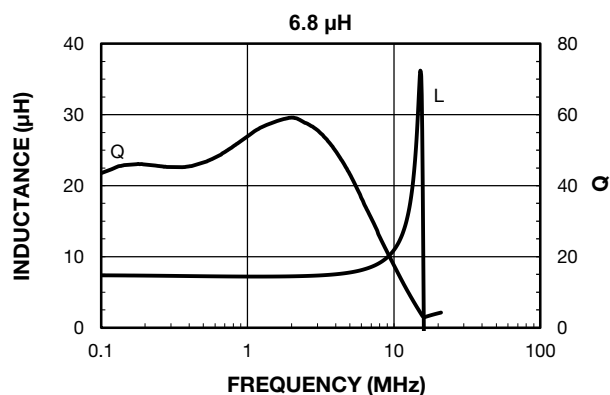
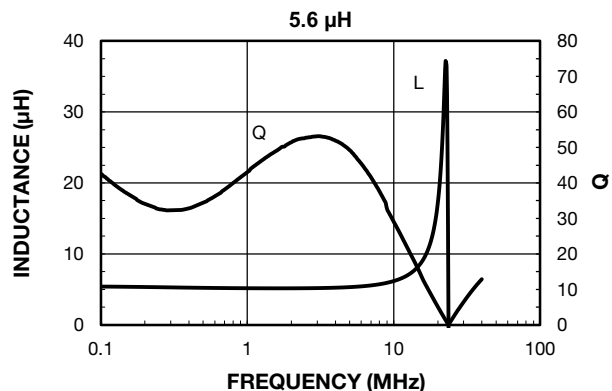
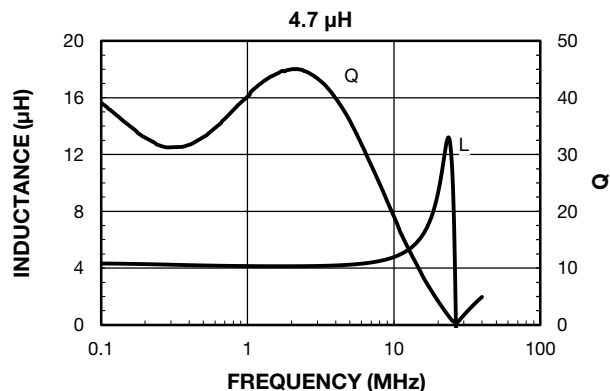
PERFORMANCE GRAPHS





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY



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




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