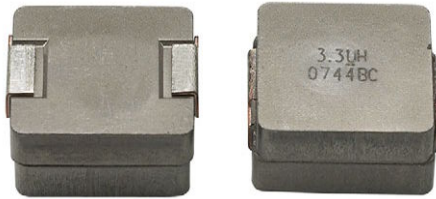


## Low Profile, High Current IHLP® Inductors



**DESIGN SUPPORT TOOLS** click logo to get started



| STANDARD ELECTRICAL SPECIFICATIONS   |                                       |                                       |  |  |                      |
|--|---------------------------------------|---------------------------------------|--|--|----------------------|
| $L_0$<br>INDUCTANCE<br>± 20 %<br>AT 100 kHz,<br>0.25 V, 0 A<br>( $\mu\text{H}$ ) | DCR<br>TYP.<br>25 °C<br>(m $\Omega$ ) | DCR<br>MAX.<br>25 °C<br>(m $\Omega$ ) | 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) |
| 1.0  | 1.65                                  | 1.77                                  | 40   | 26   | 33.4                 |
| 1.2  | 1.98                                  | 2.12                                  | 29   | 24.5   | 32.0                 |
| 1.5  | 2.4                                   | 2.57                                  | 27.5   | 23.5   | 29.2                 |
| 1.8  | 2.75                                  | 2.94                                  | 26   | 22.5   | 25.9                 |
| 2.2  | 3.43                                  | 3.67                                  | 25.5   | 21.5   | 23.3                 |
| 3.3  | 5.08                                  | 5.44                                  | 20.2   | 16.7   | 17.8                 |
| 4.7  | 7.41                                  | 7.93                                  | 17.4   | 18.5   | 15.8                 |
| 5.6  | 8.51                                  | 9.11                                  | 13.8   | 13.8   | 12.3                 |
| 6.8  | 11.3                                  | 12.09                                 | 14.2   | 8.7  | 13.4                 |
| 7.8  | 12.6                                  | 13.48                                 | 13.5   | 8.5  | 13.6                 |
| 8.2  | 13.2                                  | 14.12                                 | 13.2   | 7.6  | 10.3                 |
| 10   | 16.60                                 | 17.76                                 | 10.9   | 7.2  | 10.7                 |
| 12   | 19.00                                 | 20.33                                 | 10.6   | 6.9  | 7.59                 |
| 15   | 24.00                                 | 25.68                                 | 8.7  | 6.8  | 8.30                 |
| 22   | 31.30                                 | 33.49                                 | 8.3  | 5.5  | 6.43                 |

### 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.
  - Maximum recommended operating voltage (across inductor) = 75 V
- (1) DC current (A) that will cause an approximate  $\Delta T$  of 40 °C  
 (2) DC current (A) that will cause  $L_0$  to drop approximately 20 %

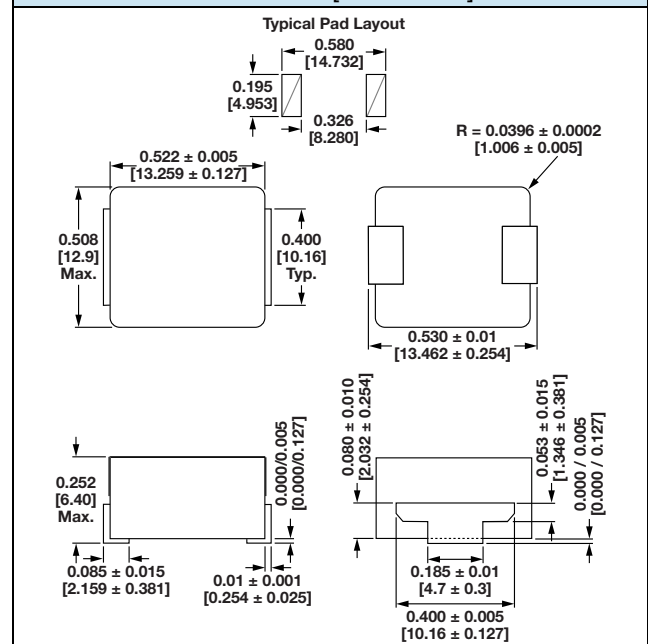
### FEATURES

- High temperature, up to 155 °C
- Shielded construction
- Excellent DC/DC energy storage up to 1 MHz to 2 MHz. Filter inductor applications up the SRF (see Standard Electrical Specifications table).
- Lowest DCR/ $\mu\text{H}$ , 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)
- Tin / lead SnPb plated (not dipped) terminals

### 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-5050FD-5L | 4.7 $\mu\text{H}$ | ± 20 %               | RZ           |
| MODEL          | INDUCTANCE VALUE  | INDUCTANCE TOLERANCE | PACKAGE CODE |

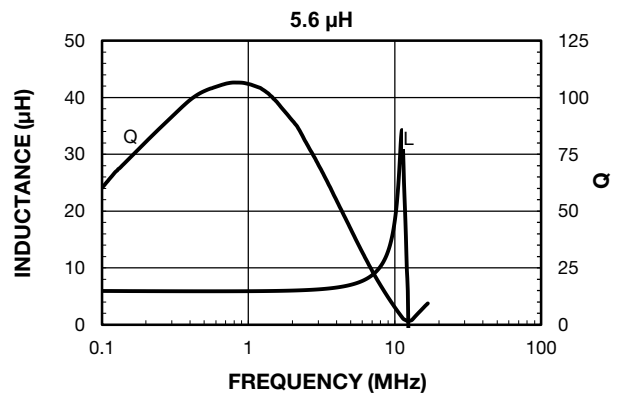
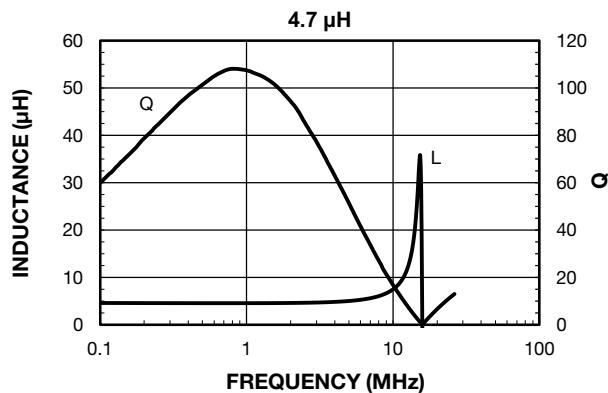
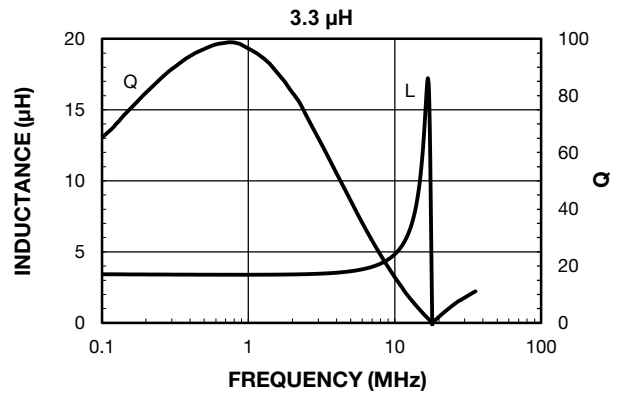
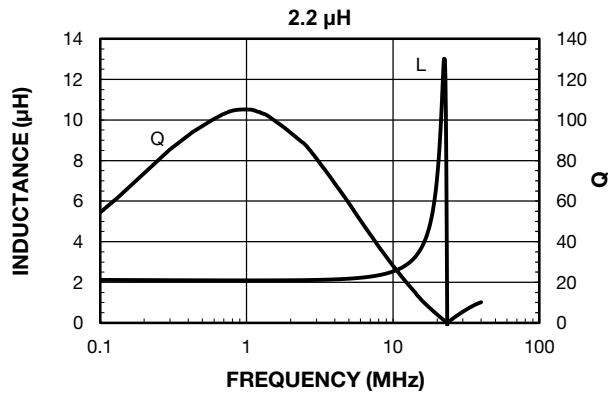
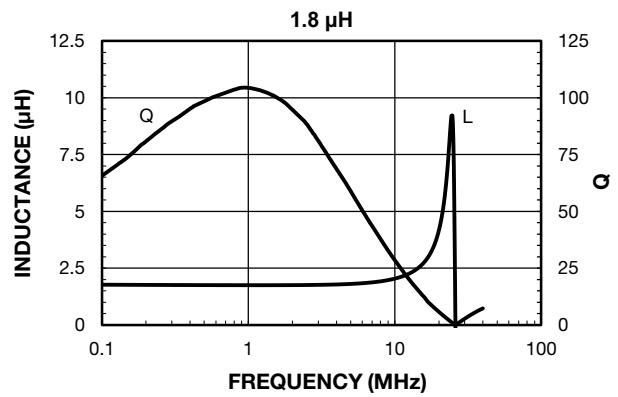
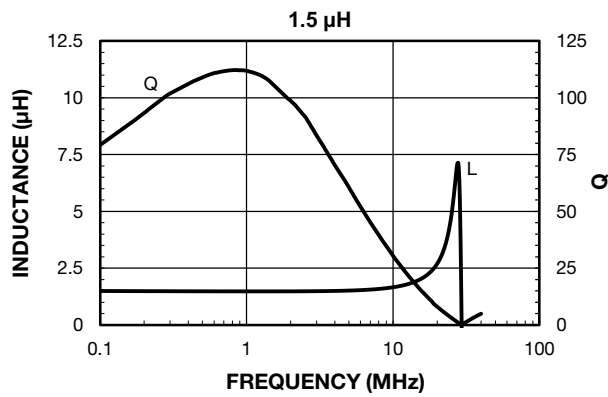
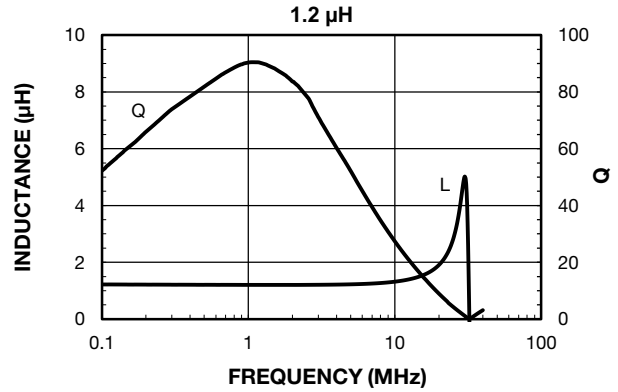
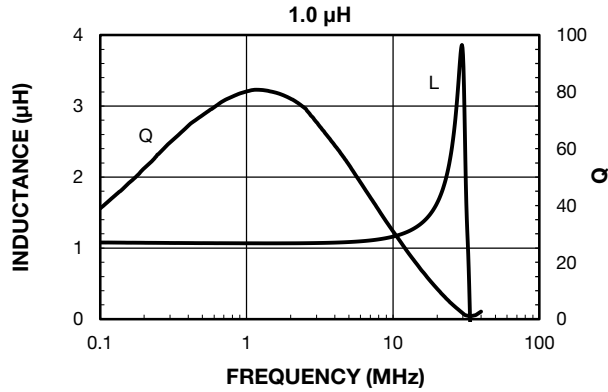
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|--------------------|---|---|---|------|---|---|---|--------------|---|------------------|---|---|------|--------|---|---|---|
| I                  | H | L | P | 5    | 0 | 5 | 0 | F            | D | R                | Z | 4 | R    | 7      | M | 5 | L |
| MODEL              |   |   |   | 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.

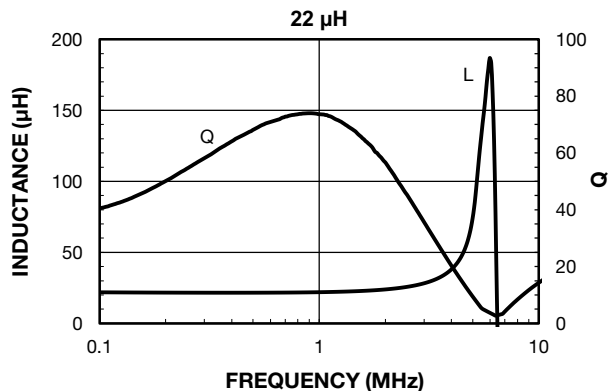
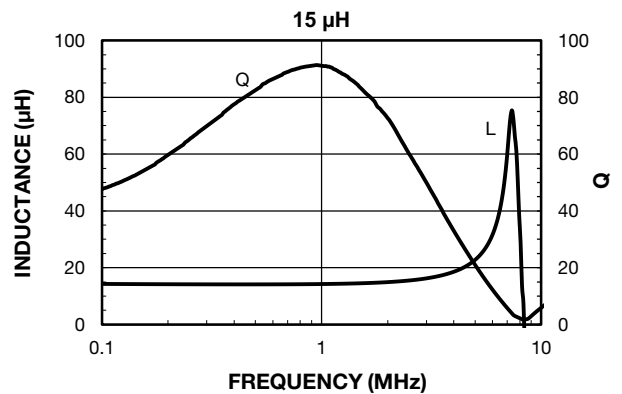
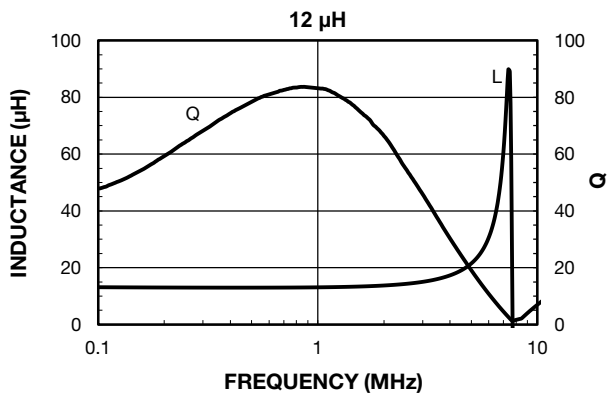
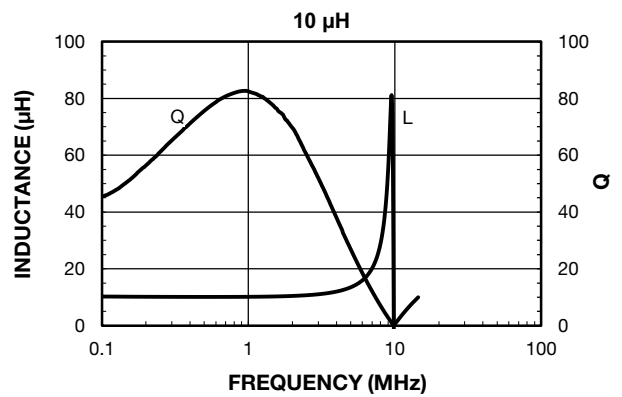
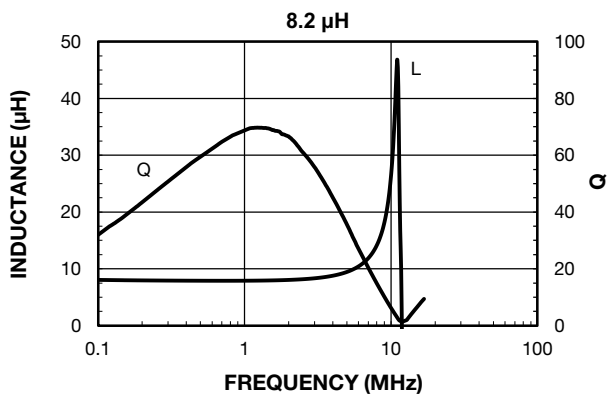
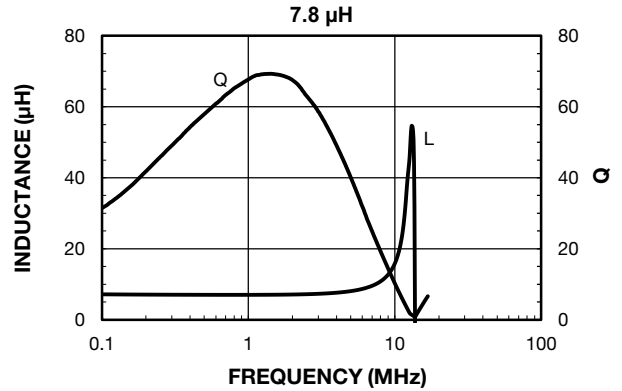
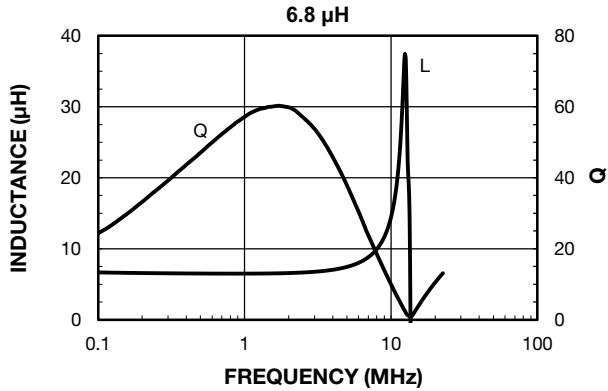


PERFORMANCE GRAPHS



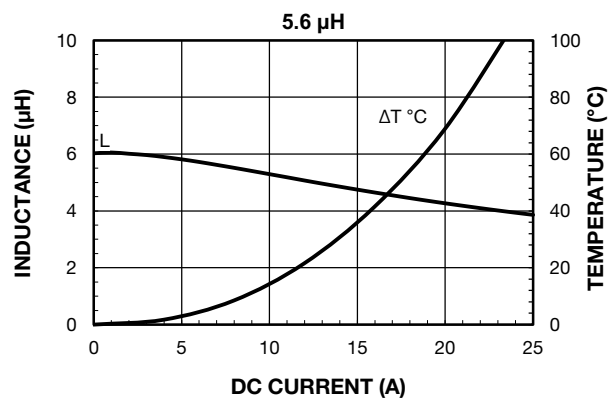
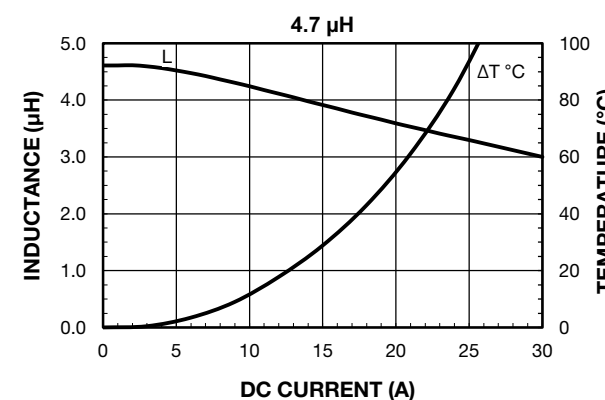
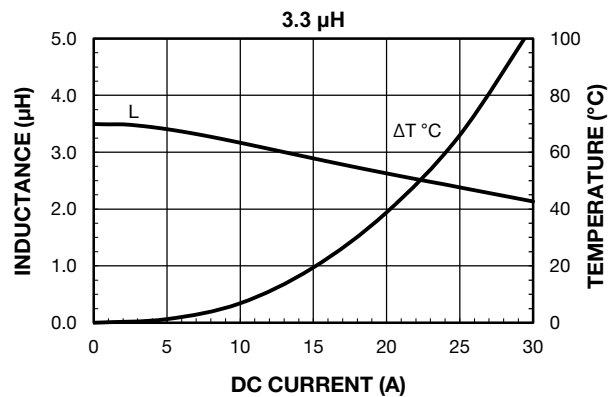
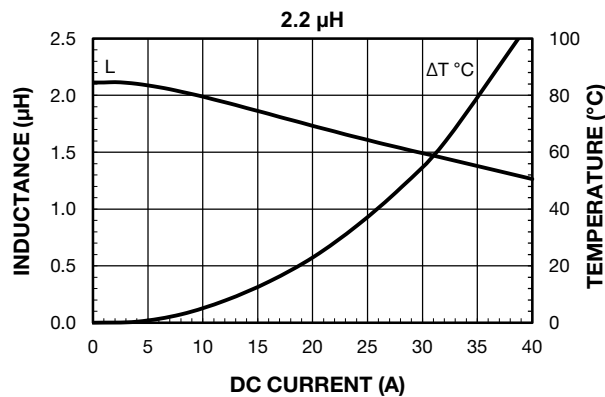
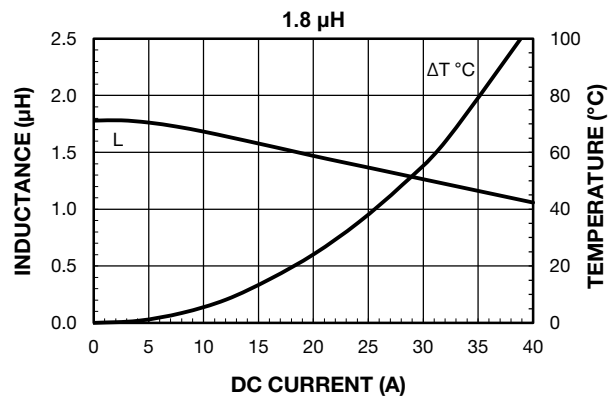
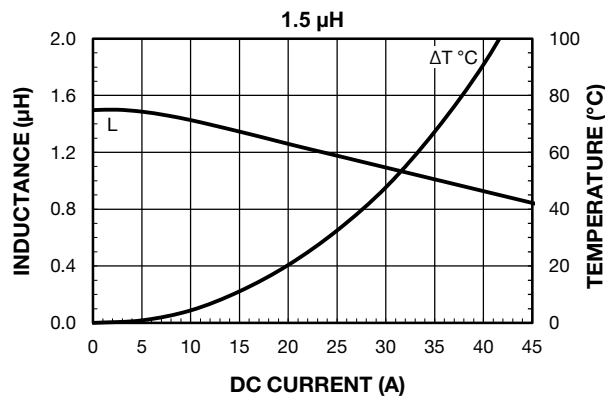
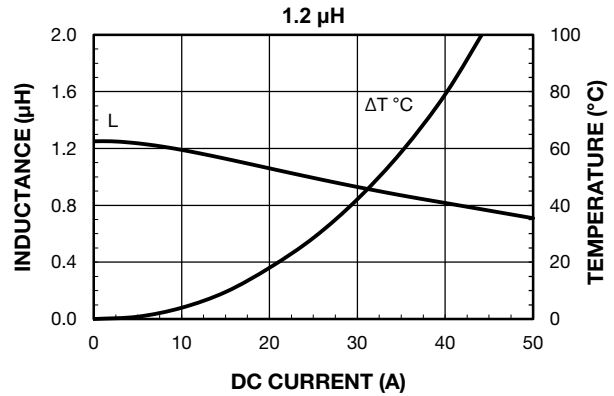
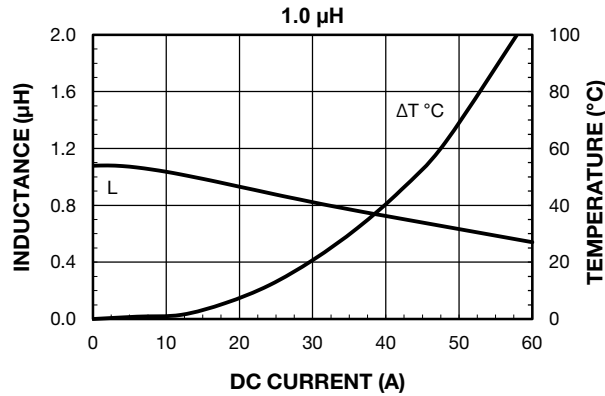


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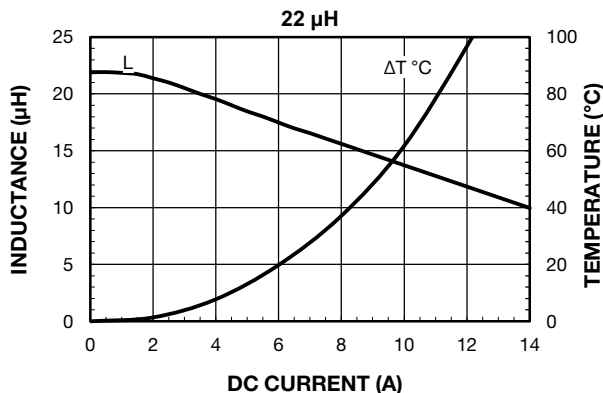
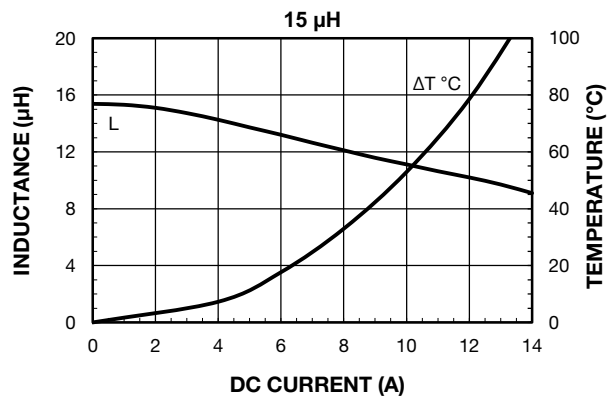
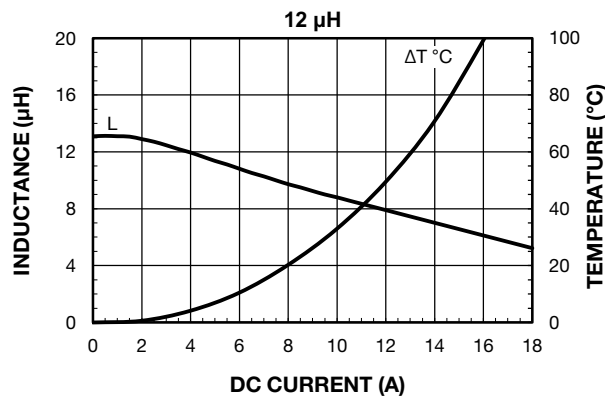
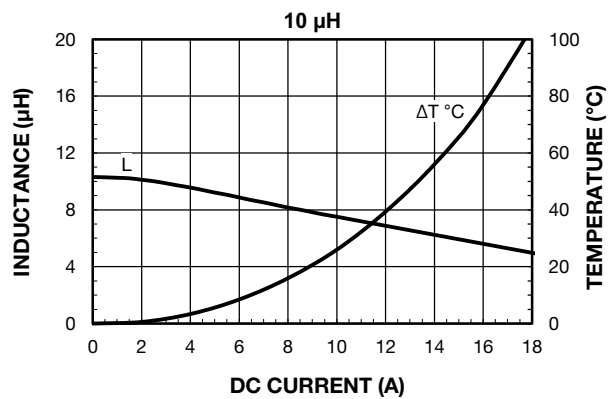
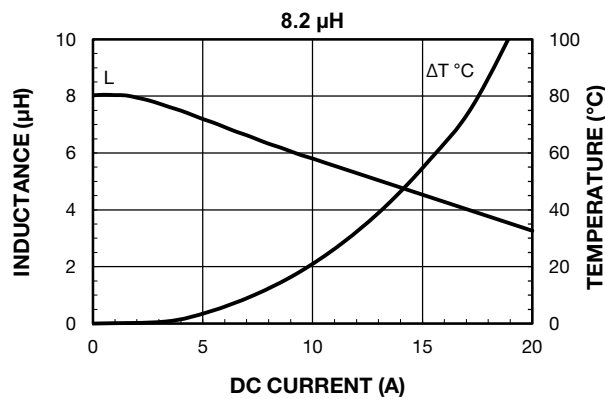
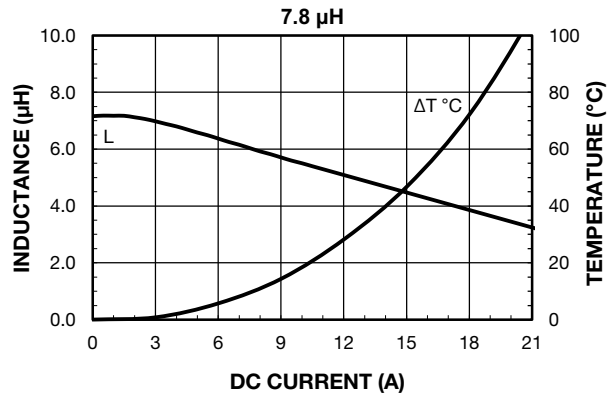
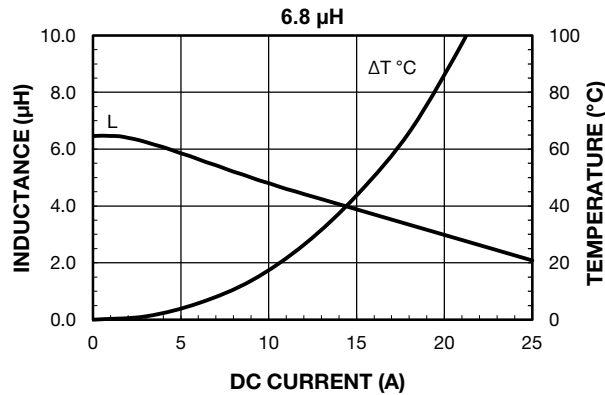


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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