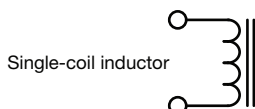
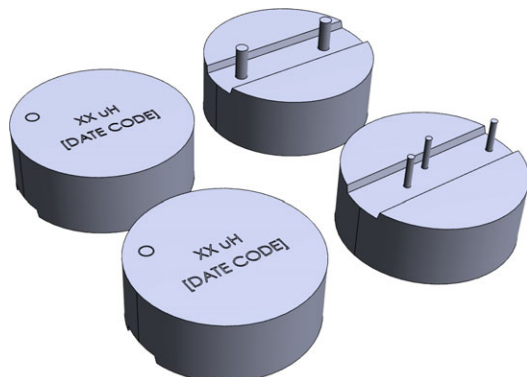


# Automotive High Current, Radial, Through-Hole Power Inductor



## FEATURES

- Magnetically shielded, metal alloy construction
- Size: 19.177 mm (dia.) x 8.738 mm
- Radial through-hole termination (THT) with third support lead for added mounting stability (for 33  $\mu$ H and higher)
- Flat surface for heat sink mounting
- Coil orientation mark for consistent EMI performance (dot indicates inside start lead)
- High temperature up to 155 °C
- AEC-Q200 qualified
- 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)

## LINKS TO ADDITIONAL RESOURCES



## APPLICATIONS

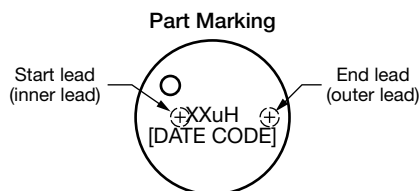
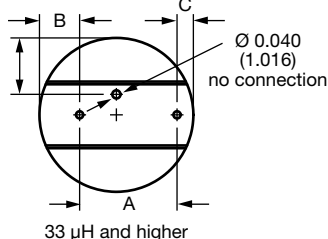
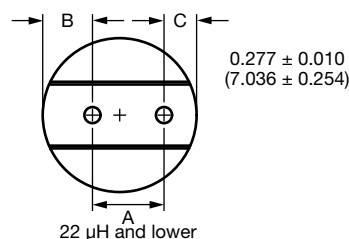
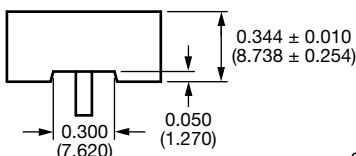
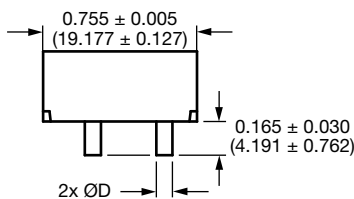
- 48 V / 12 V bi-directional converters
- DC/DC converters using GaN FETs
- Noise suppression for motors

## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER        | L <sub>0</sub> INDUCTANCE<br>$\pm 20\%$<br>AT 100 kHz,<br>0.25 V, 0 A<br>( $\mu$ H) | DCR TYP.<br>25 °C<br>(m $\Omega$ ) | DCR MAX.<br>25 °C<br>(m $\Omega$ ) | HEAT RATING<br>CURRENT<br>DC TYP.<br>(A) <sup>(1)</sup> | SATURATION CURRENT<br>DC TYP.<br>(A) <sup>(2)</sup> |           | SRF TYP.<br>(MHz) |
|--------------------|-------------------------------------------------------------------------------------|------------------------------------|------------------------------------|---------------------------------------------------------|-----------------------------------------------------|-----------|-------------------|
|                    |                                                                                     |                                    |                                    |                                                         | 20 % DROP                                           | 30 % DROP |                   |
| IHTH0750IZEBR47M5A | 0.47                                                                                | 0.47                               | 0.52                               | 83.0                                                    | 44.0                                                | 64.0      | 67.00             |
| IHTH0750IZEB1R0M5A | 1.0                                                                                 | 0.87                               | 0.92                               | 66.0                                                    | 44.0                                                | 70.0      | 35.70             |
| IHTH0750IZEB2R2M5A | 2.2                                                                                 | 1.51                               | 1.63                               | 45.0                                                    | 38.0                                                | 52.0      | 17.85             |
| IHTH0750IZEB3R3M5A | 3.3                                                                                 | 2.28                               | 2.40                               | 40.0                                                    | 33.0                                                | 46.0      | 16.70             |
| IHTH0750IZEB4R7M5A | 4.7                                                                                 | 2.85                               | 3.00                               | 30.0                                                    | 26.0                                                | 36.0      | 13.22             |
| IHTH0750IZEB6R8M5A | 6.8                                                                                 | 3.97                               | 4.18                               | 24.5                                                    | 22.0                                                | 31.0      | 9.50              |
| IHTH0750IZEB8R2M5A | 8.2                                                                                 | 5.7                                | 6.14                               | 20.0                                                    | 14.5                                                | 20.0      | 11.60             |
| IHTH0750IZEB100M5A | 10                                                                                  | 7.32                               | 7.70                               | 17.7                                                    | 13.0                                                | 18.0      | 9.77              |
| IHTH0750IZEB220M5A | 22                                                                                  | 12.56                              | 13.22                              | 12.7                                                    | 11.5                                                | 16.0      | 6.42              |
| IHTH0750IZEB330M5A | 33                                                                                  | 22.61                              | 23.80                              | 9.5                                                     | 10.0                                                | 14.0      | 4.58              |
| IHTH0750IZEB470M5A | 47                                                                                  | 35.34                              | 37.20                              | 6.8                                                     | 6.5                                                 | 9.0       | 4.28              |
| IHTH0750IZEB680M5A | 68                                                                                  | 46.47                              | 48.92                              | 6.2                                                     | 6.2                                                 | 8.5       | 2.74              |
| IHTH0750IZEB820M5A | 82                                                                                  | 55.20                              | 58.10                              | 5.2                                                     | 6.0                                                 | 8.0       | 3.09              |
| IHTH0750IZEB101M5A | 100                                                                                 | 60.80                              | 64.00                              | 5.0                                                     | 5.2                                                 | 7.0       | 2.63              |

### Notes

- All test data is referenced to 25 °C ambient
  - Operating temperature range -55 °C to +155 °C
  - Operating voltage rating (across inductor) = 100 V
  - 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
- (1) DC current (A) that will cause an approximate  $\Delta T$  of 40 °C
- (2) DC current (A) that will cause L<sub>0</sub> to drop approximately 20 % and 30 %, respectively

**DIMENSIONS** in inches [millimeters]


| VALUE   | A ± 0.010<br>(± 0.254) | B ± 0.010<br>(± 0.254) | C ± 0.010<br>(± 0.254) | D ± 0.005<br>(± 0.127) |
|---------|------------------------|------------------------|------------------------|------------------------|
| 0.47 µH | 0.351 (8.915)          | 0.244 (6.198)          | 0.160 (4.064)          | 0.079 (2.007)          |
| 1.0 µH  | 0.487 (12.370)         | 0.172 (4.369)          | 0.096 (2.438)          | 0.071 (1.803)          |
| 2.2 µH  | 0.487 (12.370)         | 0.172 (4.369)          | 0.096 (2.438)          | 0.071 (1.803)          |
| 3.3 µH  | 0.464 (11.786)         | 0.179 (4.547)          | 0.111 (2.819)          | 0.063 (1.600)          |
| 4.7 µH  | 0.464 (11.786)         | 0.179 (4.547)          | 0.111 (2.819)          | 0.056 (1.422)          |
| 6.8 µH  | 0.522 (13.259)         | 0.147 (3.734)          | 0.085 (2.159)          | 0.056 (1.422)          |
| 8.2 µH  | 0.427 (10.846)         | 0.245 (6.223)          | 0.082 (2.083)          | 0.050 (1.210)          |
| 10 µH   | 0.427 (10.846)         | 0.245 (6.223)          | 0.082 (2.083)          | 0.050 (1.210)          |
| 22 µH   | 0.450 (11.430)         | 0.226 (5.740)          | 0.079 (2.007)          | 0.039 (0.991)          |
| 33 µH   | 0.477 (12.116)         | 0.197 (5.004)          | 0.080 (2.032)          | 0.035 (0.889)          |
| 47 µH   | 0.435 (11.049)         | 0.247 (6.274)          | 0.072 (1.829)          | 0.031 (0.787)          |
| 68 µH   | 0.435 (11.049)         | 0.247 (6.274)          | 0.072 (1.829)          | 0.031 (0.787)          |
| 82 µH   | 0.458 (11.633)         | 0.227 (5.766)          | 0.070 (1.778)          | 0.028 (0.711)          |
| 100 µH  | 0.458 (11.633)         | 0.227 (5.766)          | 0.070 (1.778)          | 0.028 (0.711)          |

**DESCRIPTION**

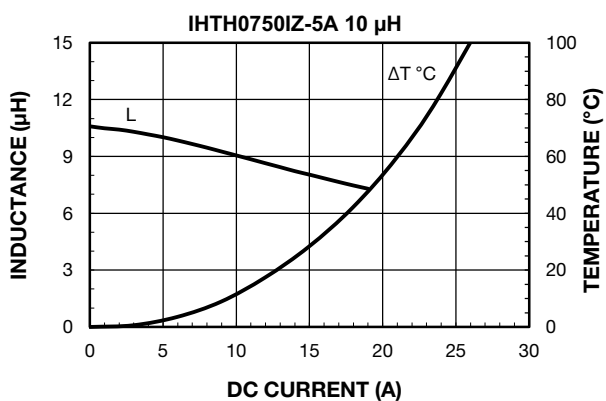
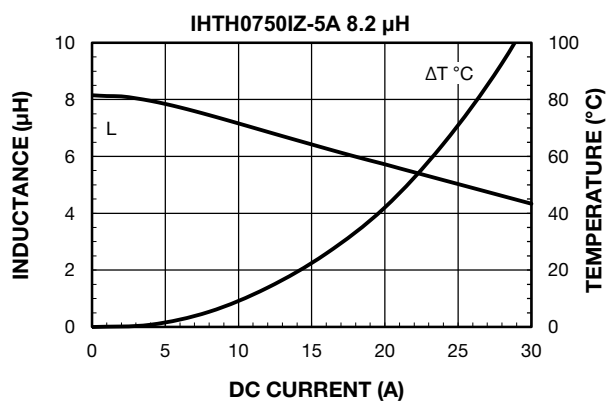
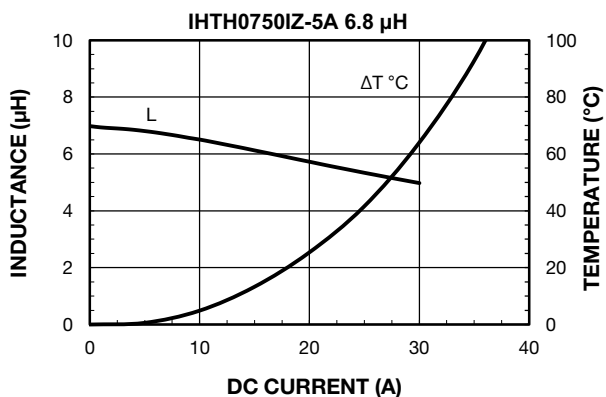
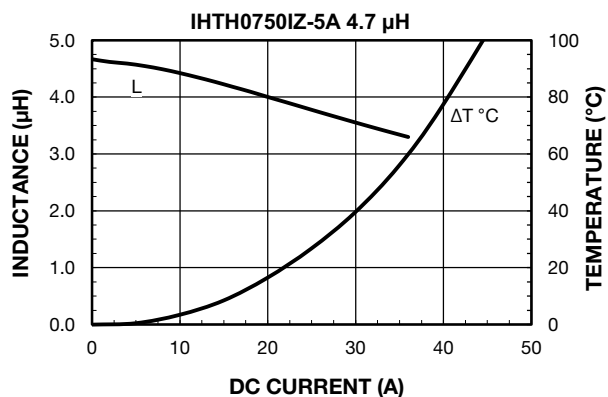
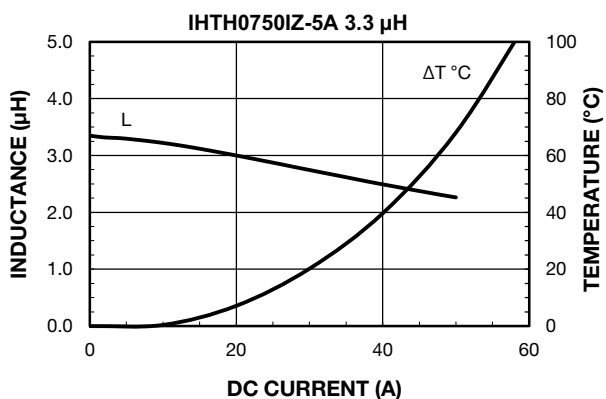
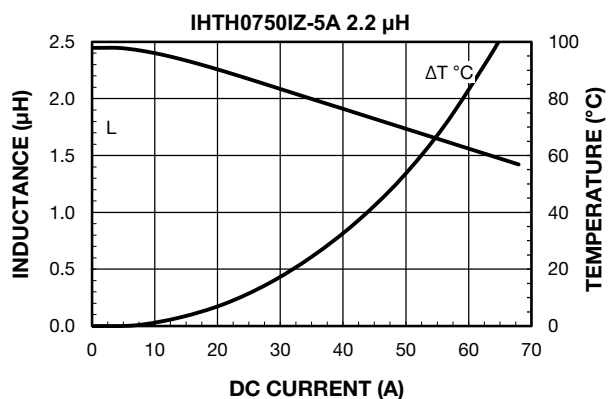
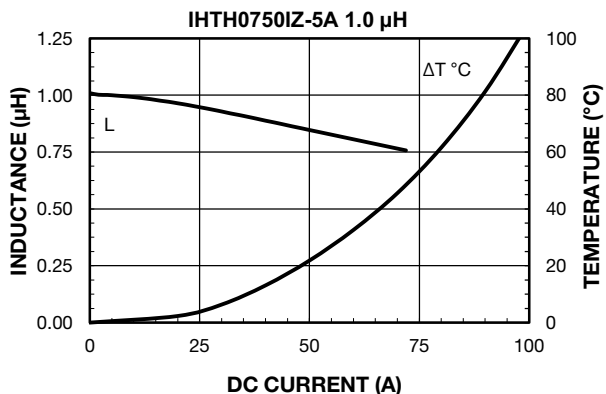
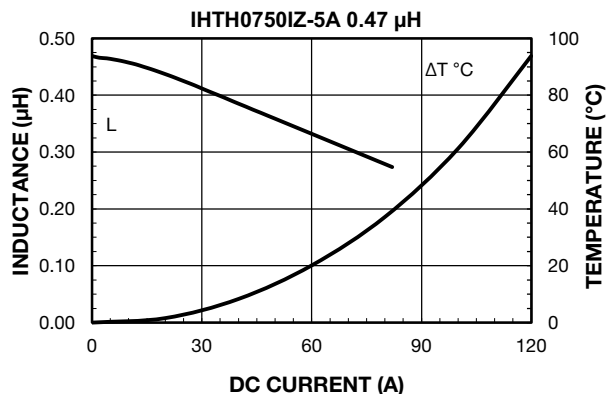
|                       |                  |                      |
|-----------------------|------------------|----------------------|
| <b>IHTH-0750IZ-5A</b> | <b>4.7 µH</b>    | <b>± 20 %</b>        |
| MODEL                 | INDUCTANCE VALUE | INDUCTANCE TOLERANCE |

**GLOBAL PART NUMBER**

|                |                    |                  |                     |                      |            |
|----------------|--------------------|------------------|---------------------|----------------------|------------|
| <b>I H T H</b> | <b>0 7 5 0 I Z</b> | <b>E B</b>       | <b>4 R 7</b>        | <b>M</b>             | <b>5 A</b> |
| PRODUCT FAMILY | SIZE               | PACKAGE CODE     | INDUCTANCE VALUE    | INDUCTANCE TOLERANCE | SERIES     |
|                |                    | <b>EB = tray</b> | <b>4R7 = 4.7 µH</b> | <b>M = ± 20 %</b>    |            |

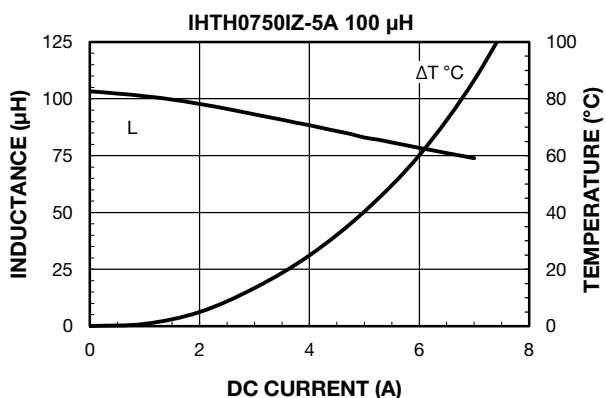
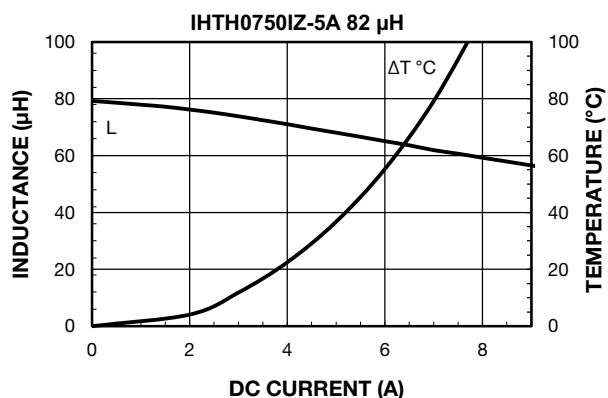
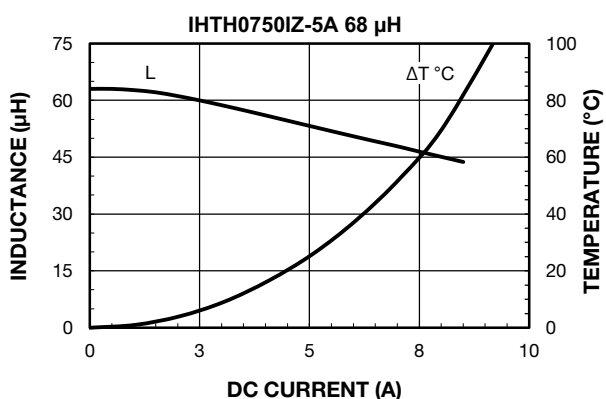
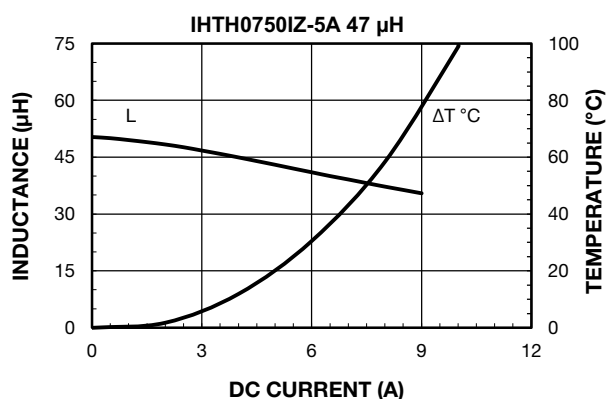
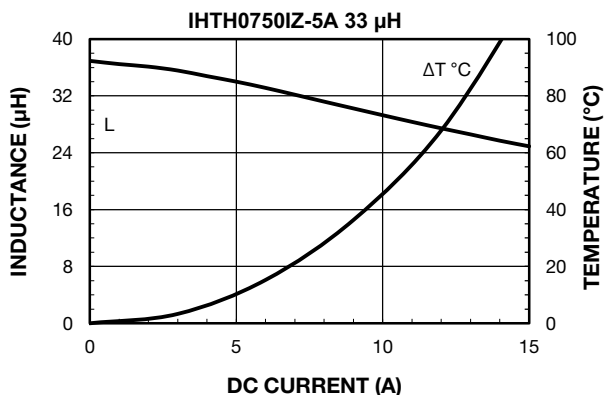
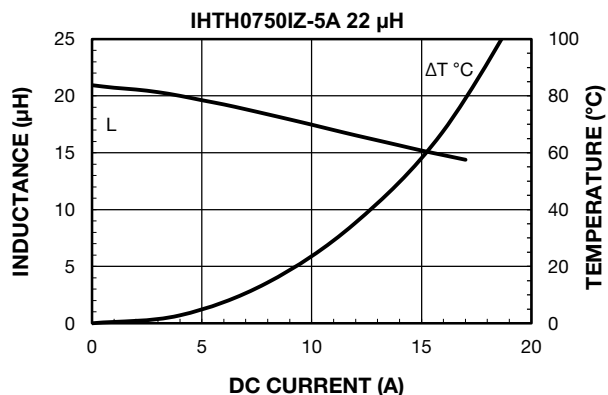


PERFORMANCE GRAPHS



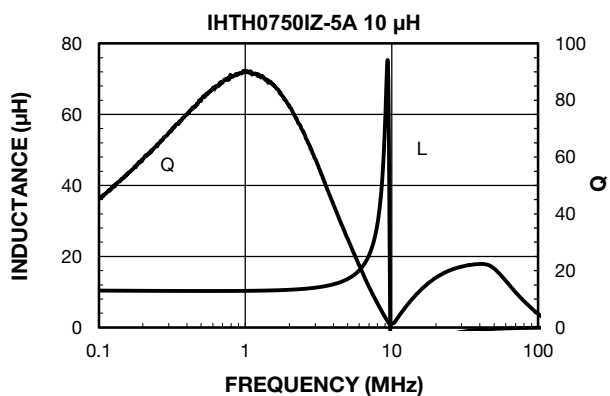
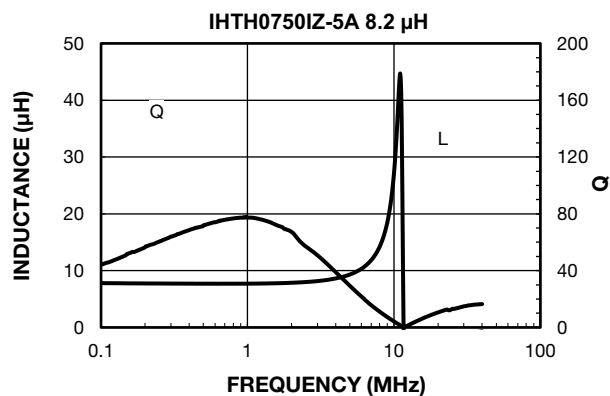
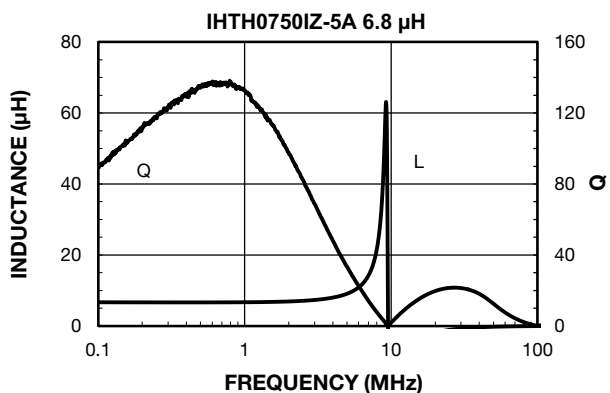
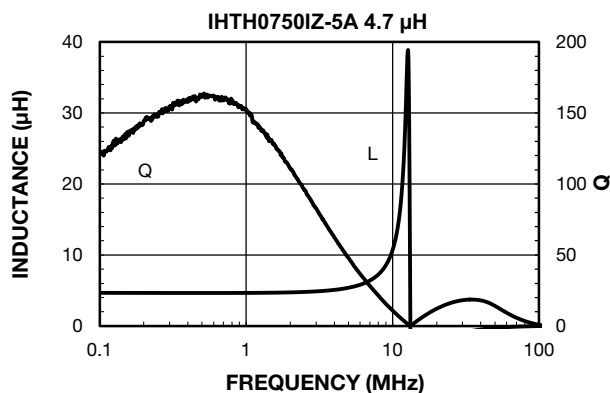
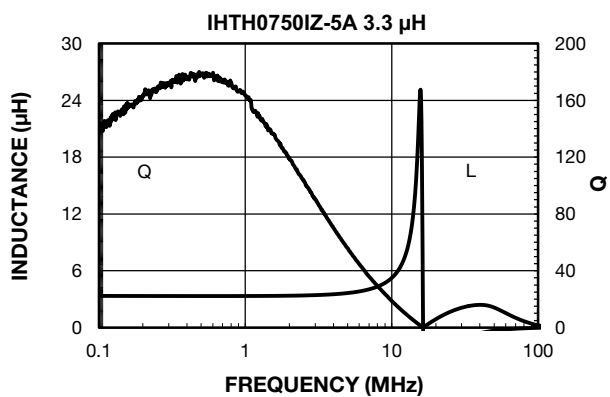
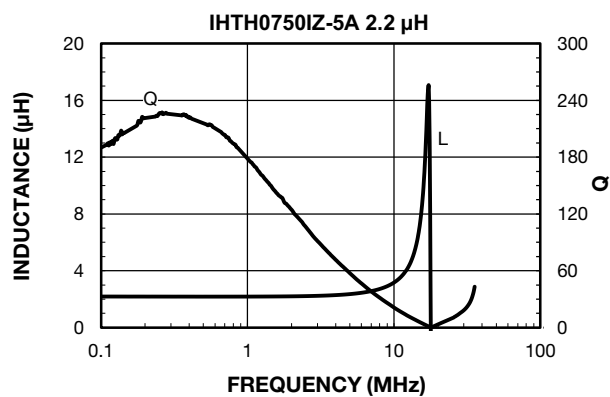
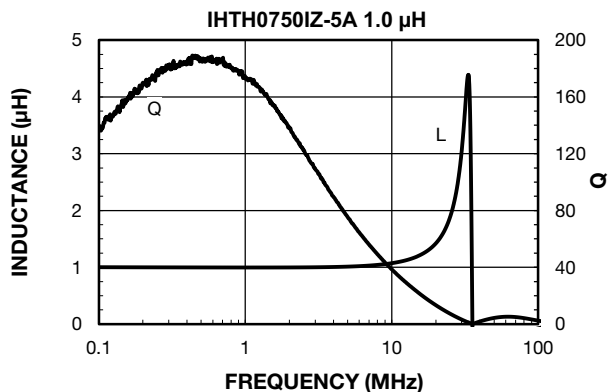
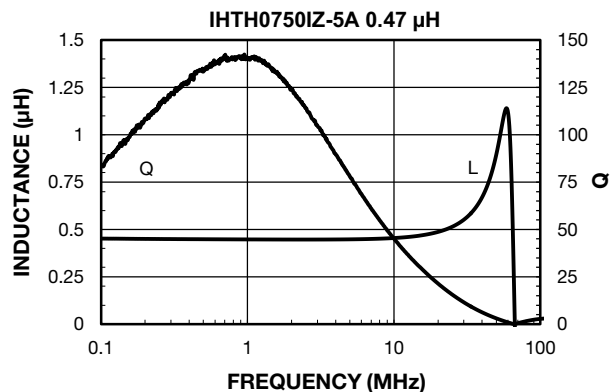


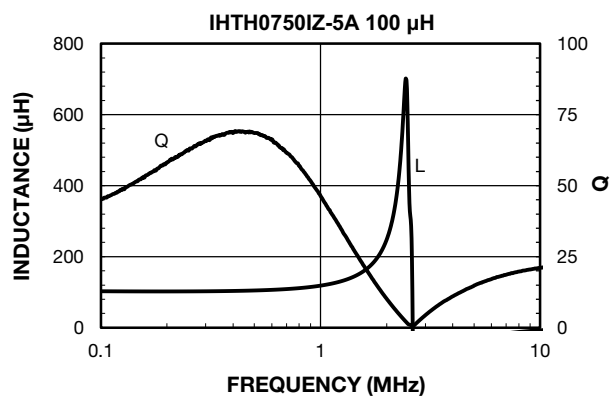
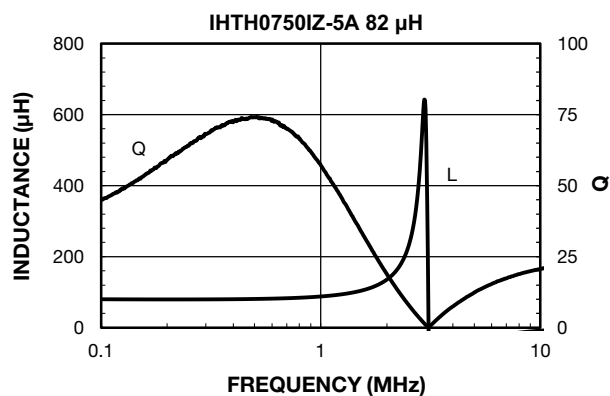
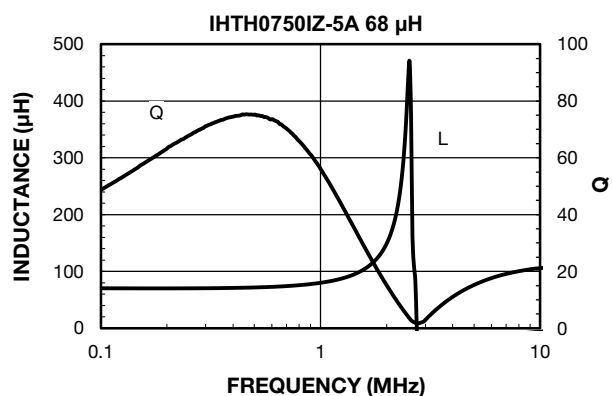
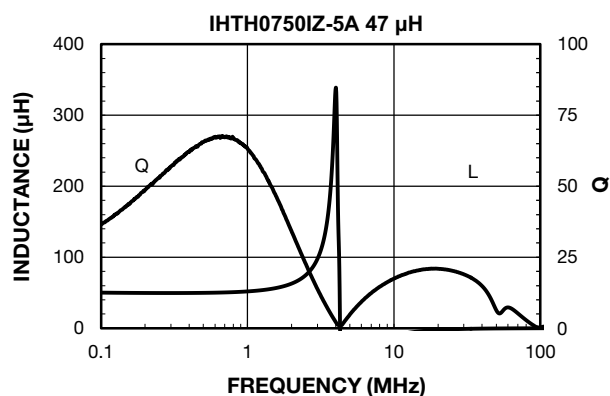
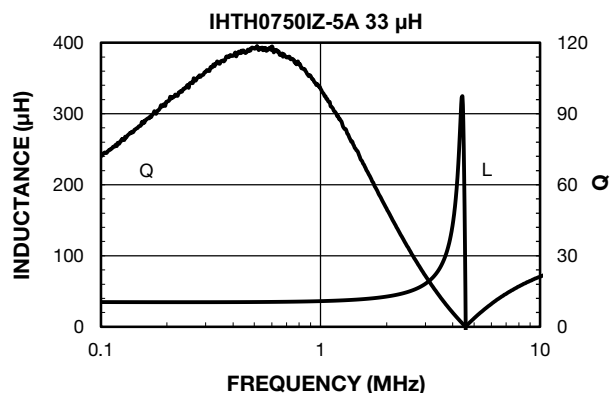
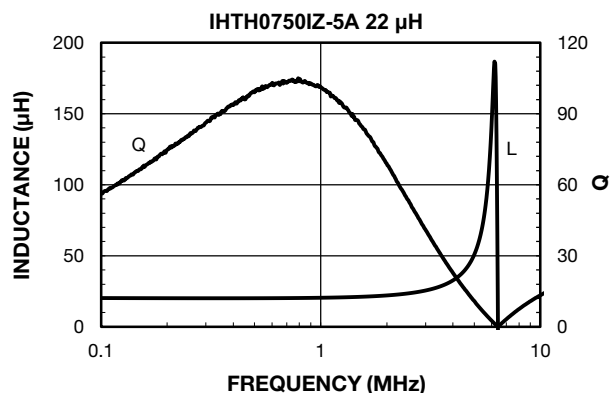
PERFORMANCE GRAPHS





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY



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




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