

## Low Profile, High Current Inductors with e-field Shield



Manufactured under one or more of the following:  
**US Patents; 6,198,375/6,204,744/6,449,829/6,460,244.**  
 Several foreign patents, and other patents pending.

| STANDARD ELECTRICAL SPECIFICATIONS  |                              |                              |  |  |
|---|------------------------------|------------------------------|--|--|
| L <sub>0</sub><br>INDUCTANCE<br>± 20 % 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>(3)</sup> | SATURATION<br>CURRENT<br>DC TYP.<br>(A) <sup>(4)</sup> |
| 0.47  | 1.55                         | 1.66                         | 30.0   | 28.5   |
| 1.0   | 2.87                         | 3.07                         | 23.5   | 24.0   |
| 2.2   | 8.15                         | 8.76                         | 15.0   | 12.0   |
| 3.3   | 11.0                         | 11.81                        | 11.0   | 12.0   |
| 4.7   | 14.3                         | 15.32                        | 9.8  | 9.2  |
| 5.6   | 16.5                         | 17.60                        | 9.3  | 9.0  |
| 6.8   | 20.9                         | 22.36                        | 9.1  | 9.0  |
| 10  | 30.9                         | 33.06                        | 6.5  | 8.5  |
| 15  | 47.0                         | 50.29                        | 5.1  | 7.7  |
| 22  | 70.5                         | 75.44                        | 4.1  | 6.4  |
| 33  | 110                          | 117.70                       | 3.7  | 4.2  |
| 47  | 167                          | 178.00                       | 2.5  | 4.5  |

**Notes**

- All test data is referenced to 25 °C ambient
- Operating temperature range -55 °C to +155 °C
- DC current (A) that will cause an approximate ΔT of 40 °C
- DC current (A) that will cause L<sub>0</sub> to drop approximately 20 %
- 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.

**FEATURES**

- High temperature, up to 155 °C
- Shielded construction
- Frequency range up to 1 MHz
- Integrated e-field shield eliminates need for separate shielding
- 20 dB e-field reduction at 1 cm
- Measured vertically from top center of device
- Lowest DCR/μH, in this package size
- Handles high transient current spikes without saturation
- Coplanarity of the 4 terminals ≤ 100 μm
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE GRADE

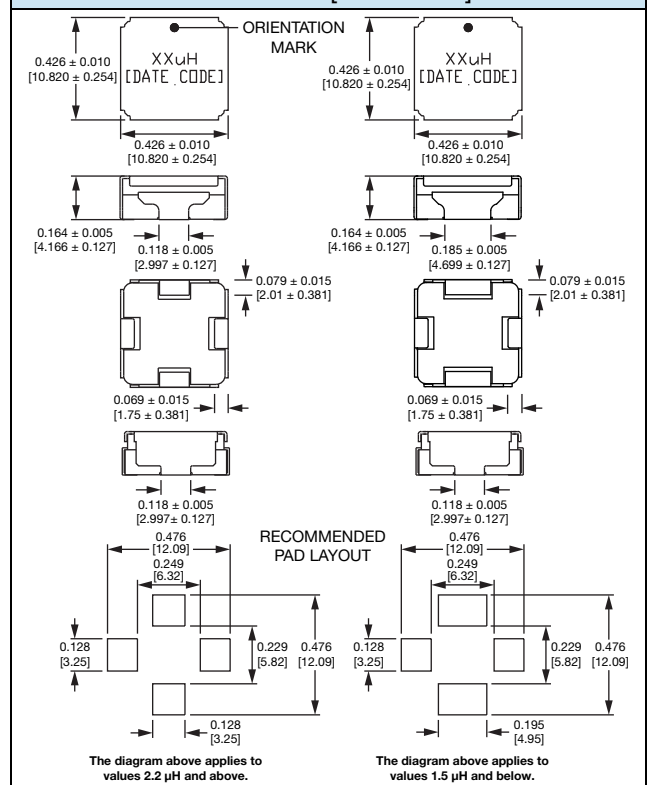


RoHS COMPLIANT

**APPLICATIONS**

- Engine and transmission control units
- Diesel injection drivers
- Noise suppression for motors
  - Windshield wipers, power seats, power mirrors, heating and ventilation blowers, HID lighting
- LED drivers

**DIMENSIONS** in inches [millimeters]

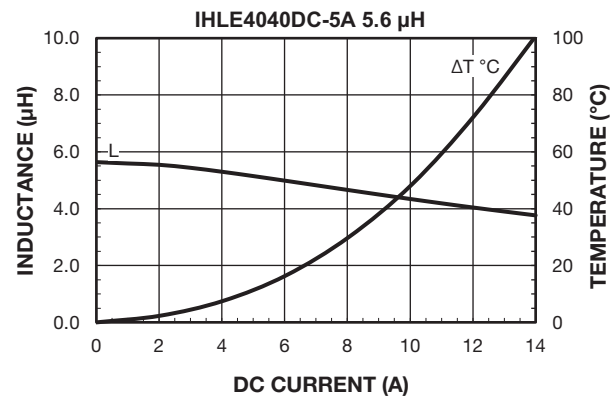
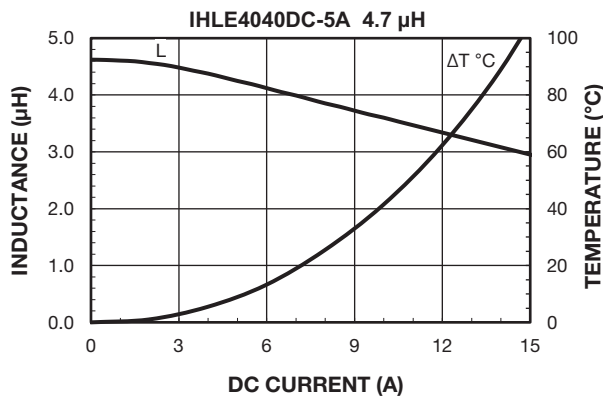
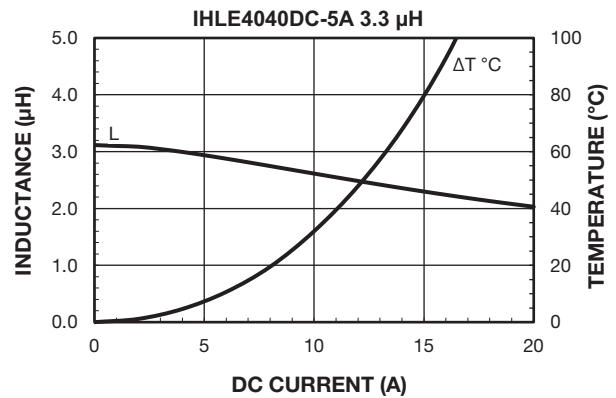
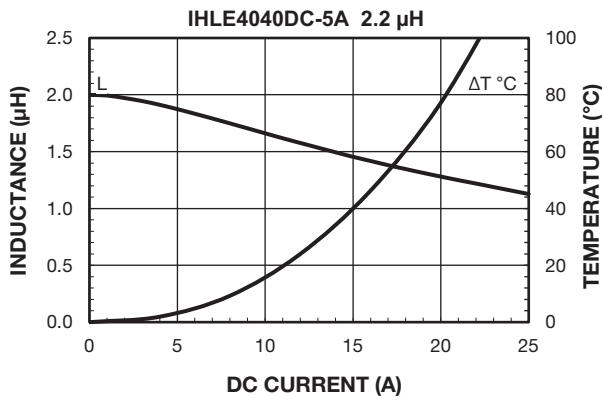
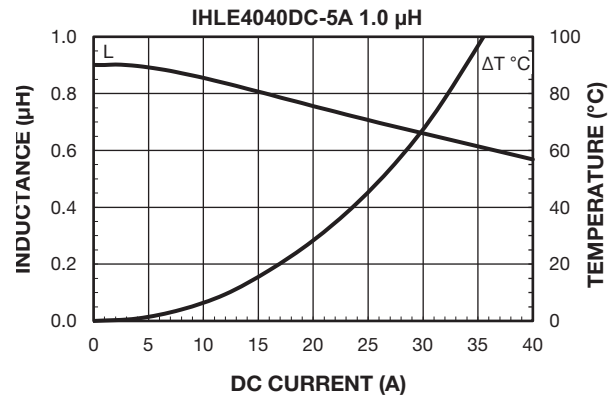
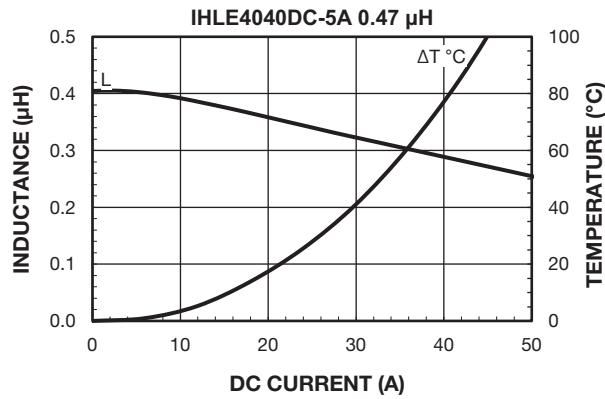


| DESCRIPTION    |                  |                      |              |                                |
|----------------|------------------|----------------------|--------------|--------------------------------|
| MODEL          | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |
| IHLE-4040DC-5A | 33 μH            | ± 20 %               | ER           | e3                             |

| GLOBAL PART NUMBER |   |   |   |      |   |   |   |              |   |                  |   |   |      |        |   |   |   |
|--------------------|---|---|---|------|---|---|---|--------------|---|------------------|---|---|------|--------|---|---|---|
| I                  | H | L | E | 4    | 0 | 4 | 0 | D            | C | E                | R | 3 | 3    | 0      | M | 5 | A |
| PRODUCT FAMILY     |   |   |   | SIZE |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | TOL. | SERIES |   |   |   |

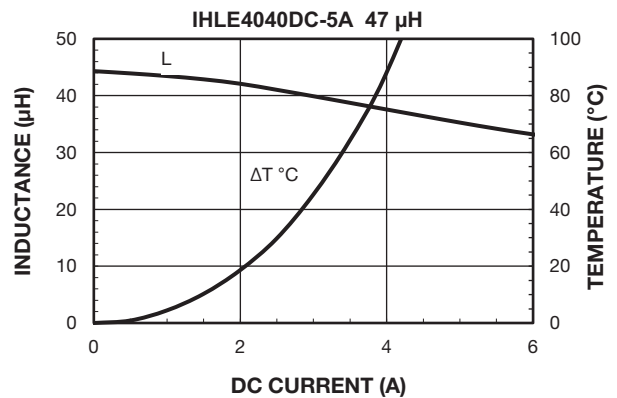
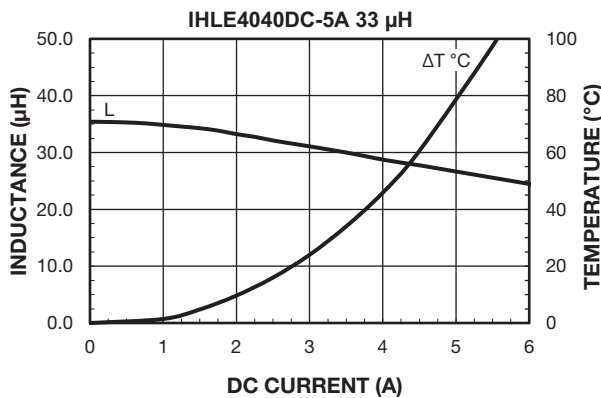
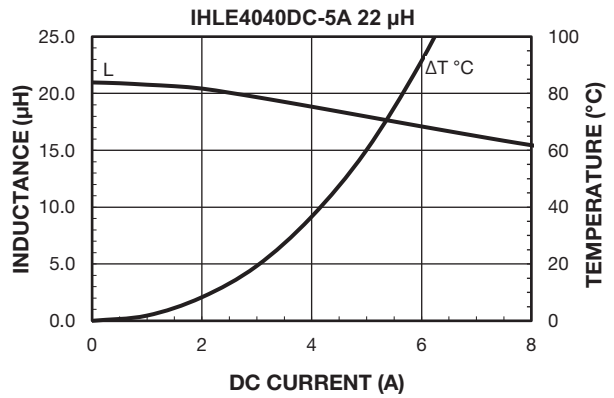
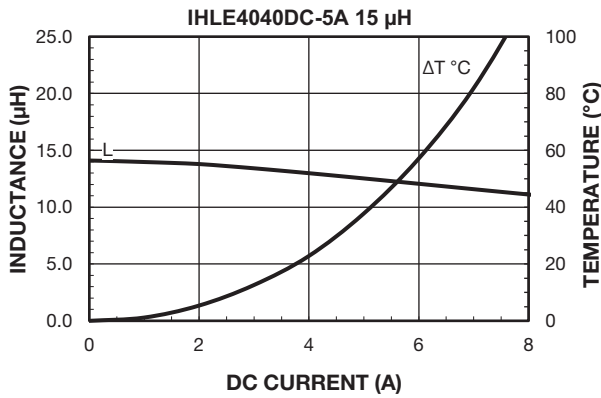
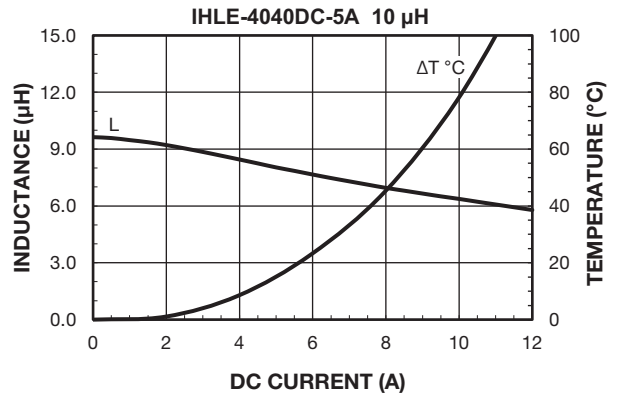
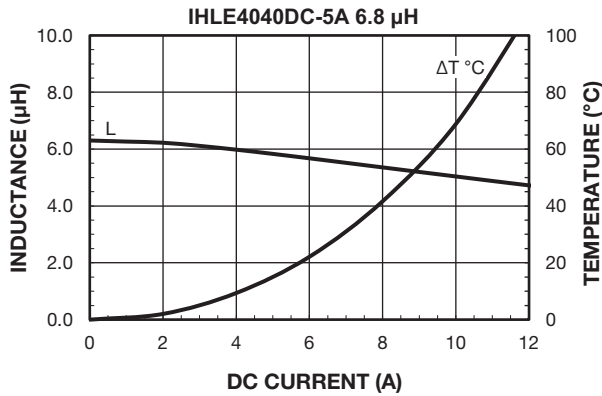


PERFORMANCE GRAPHS



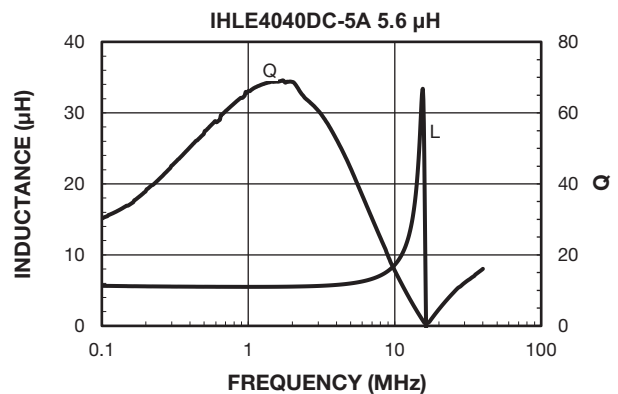
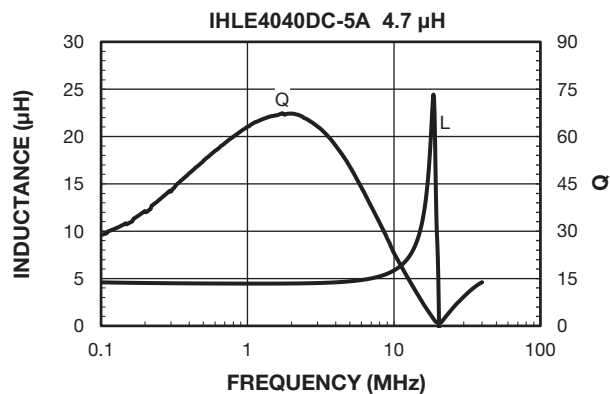
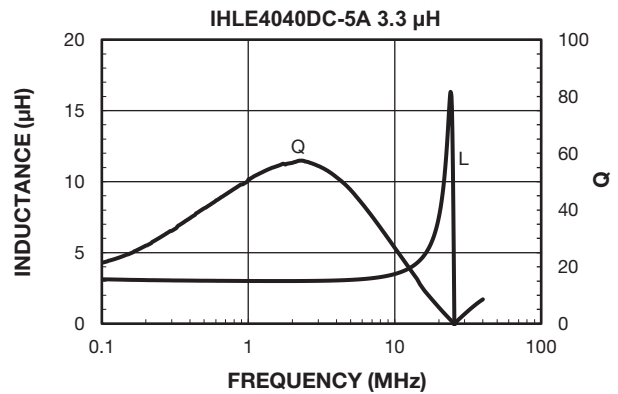
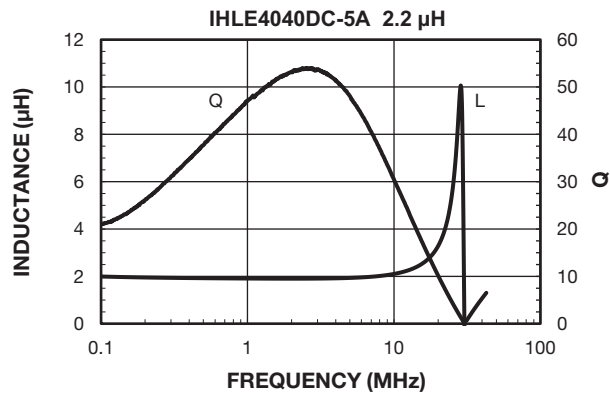
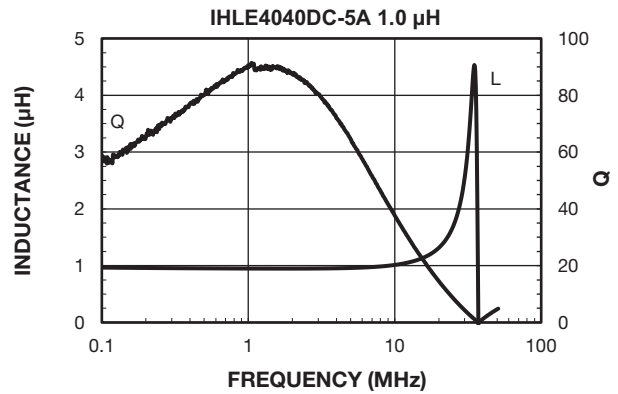
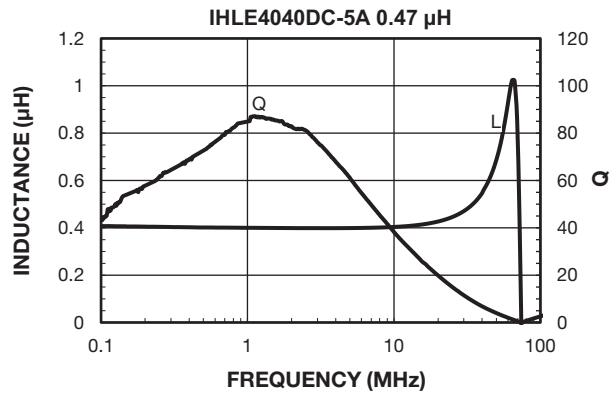


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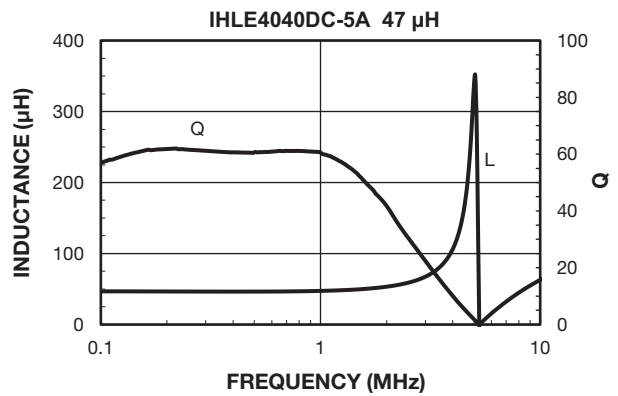
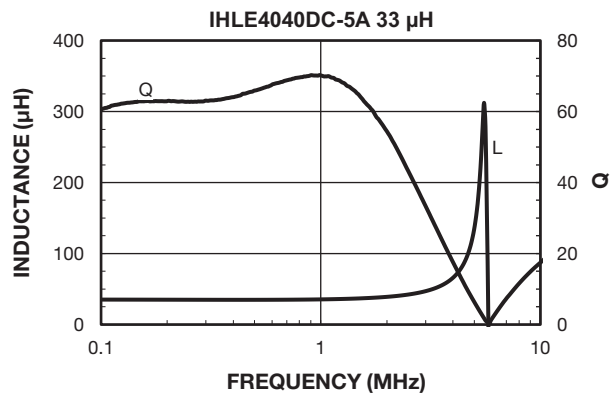
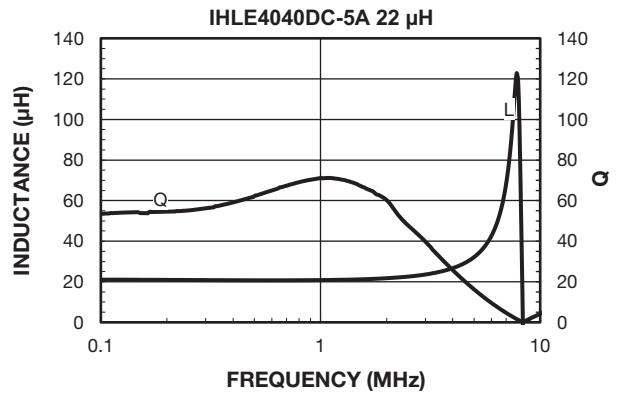
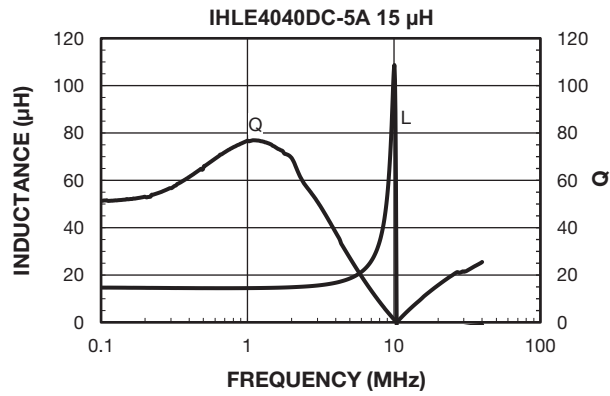
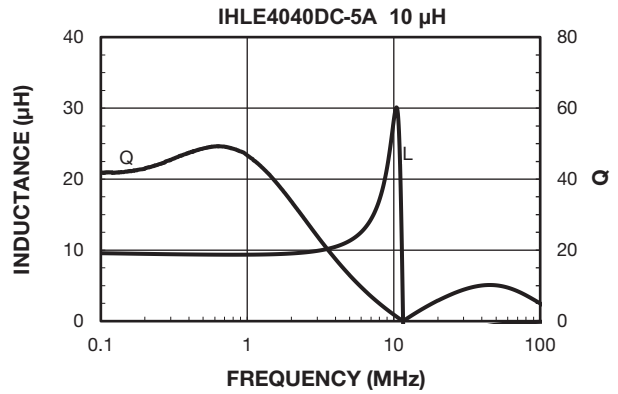
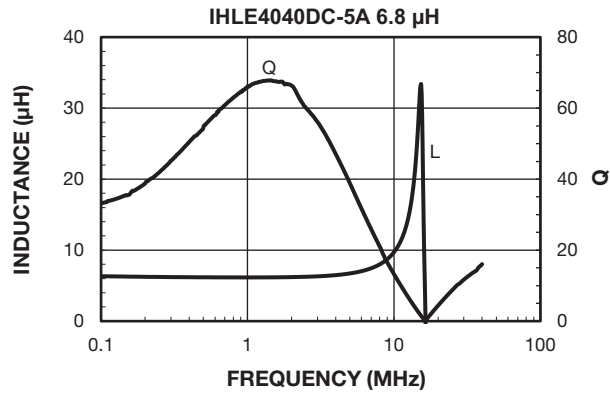


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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