

# SGIHLP® - Space Grade (MIL-STD-981 Compliant) IHLP® Inductors



## STANDARD ELECTRICAL SPECIFICATIONS

| $L_0$<br>INDUCTANCE<br>$\pm 20\%$<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) |
|--|---------------------------------------|---------------------------------------|--|--|----------------------|
| 0.22   | 4.12                                  | 4.41                                  | 18   | 11   | 190                  |
| 0.33   | 5.07                                  | 5.53                                  | 16   | 9.8  | 117                  |
| 0.47   | 6.19                                  | 6.63                                  | 14.5   | 8.7  | 94.8                 |
| 0.68   | 9.28                                  | 9.93                                  | 11.3   | 8.2  | 77.7                 |
| 1.0  | 11.68                                 | 12.29                                 | 10.8   | 8  | 60.7                 |
| 1.5  | 18                                    | 19.8                                  | 7.9  | 7.1  | 49.2                 |
| 2.2  | 24.7                                  | 26                                    | 6.6  | 6.3  | 39.8                 |
| 3.3  | 44.0                                  | 47.0                                  | 5.3  | 5.5  | 33.4                 |
| 4.7  | 72.8                                  | 78.3                                  | 4.1  | 3.7  | 23.8                 |
| 6.8  | 104                                   | 111                                   | 3.2  | 2.2  | 18.8                 |
| 10   | 132                                   | 138                                   | 2.8  | 1.6  | 15.9                 |
| 15   | 195                                   | 208                                   | 2.4  | 1.6  | 14.1                 |

### Notes

- All test data is referenced to 25 °C ambient
- Operating temperature range -55 °C to +180 °C
- The part temperature (ambient + temp. rise) should not exceed 180 °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
- Rated operating voltage (across inductor) = 50 V
- Maximum net weight = 0.75 g
- <sup>(1)</sup> DC current (A) that will cause an approximate  $\Delta T$  of 40 °C
- <sup>(2)</sup> DC current (A) that will cause  $L_0$  to drop approximately 20 %

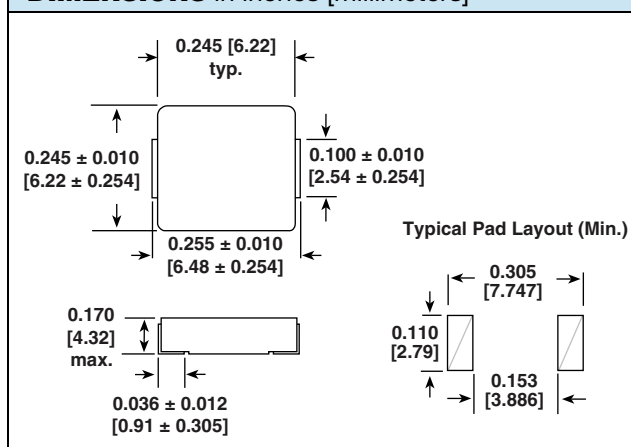
## FEATURES

- MIL-STD-981 class S compliant (see "Screening Codes")
- High temperature rating, up to 180 °C
- Shielded construction
- Lowest DCR/ $\mu\text{H}$ , in this package size
- Handles high transient current spikes without saturation
- Low profile package with high current saturation levels
- IHLP design; PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

## APPLICATIONS

- Low profile, high current power supplies
- High current POL converters
- DC/DC converters in distributed power systems
- Power converter for solar panels
- Noise suppression

## DIMENSIONS in inches [millimeters]



## DESCRIPTION

|                      |                                     |                              |                                      |
|----------------------|-------------------------------------|------------------------------|--------------------------------------|
| <b>SGIHLP-24DC-8</b> | <b>1.5 <math>\mu\text{H}</math></b> | <b><math>\pm 20\%</math></b> | <b>B = bulk / tray,<br/>T = tape</b> |
| MODEL                | INDUCTANCE VALUE                    | INDUCTANCE TOLERANCE         | PACKAGE CODE                         |

## GLOBAL PART NUMBER

|                |          |          |          |          |          |          |          |          |          |                                 |          |                     |          |          |          |           |          |
|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------------------------|----------|---------------------|----------|----------|----------|-----------|----------|
| <b>S</b>       | <b>G</b> | <b>I</b> | <b>H</b> | <b>L</b> | <b>P</b> | <b>2</b> | <b>4</b> | <b>D</b> | <b>C</b> | <b>B</b>                        | <b>1</b> | <b>R</b>            | <b>5</b> | <b>M</b> | <b>8</b> | <b>1</b>  | <b>S</b> |
| PRODUCT FAMILY |          |          |          |          |          | SIZE     |          |          |          | B = BULK /<br>TRAY,<br>T = TAPE |          | INDUCTANCE<br>VALUE |          | TOL.     | SERIES   | SCREENING |          |

## SCREENING CODES

|  |   |
|--|---|
| <b>1S:</b> MIL-STD-981 group A and B (full screen) | <b>1P:</b> basic production screen, product is not MIL-STD-981 compliant <sup>(1)</sup> |
|--|---|

### Note

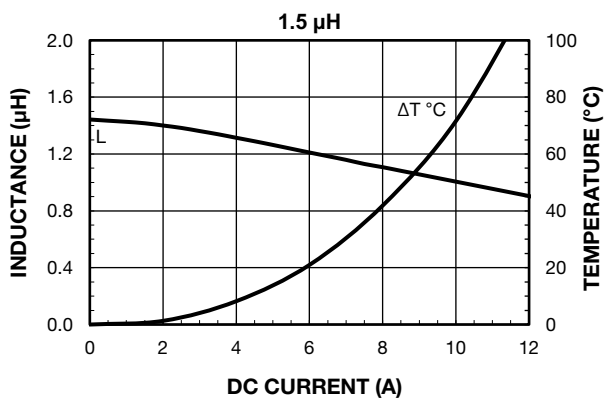
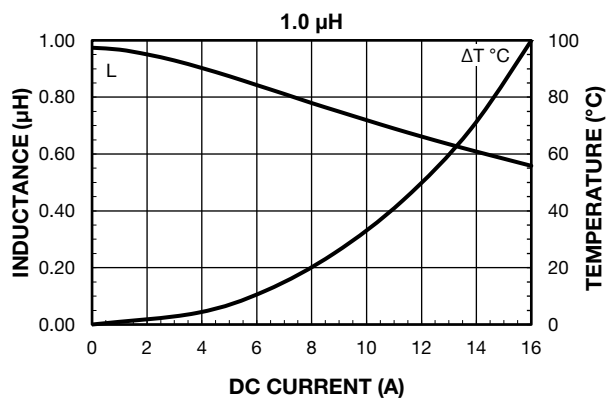
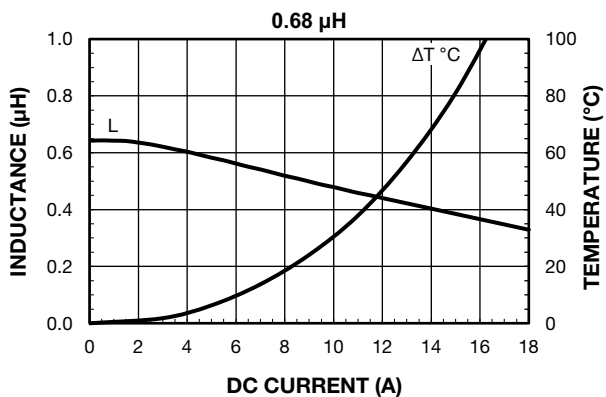
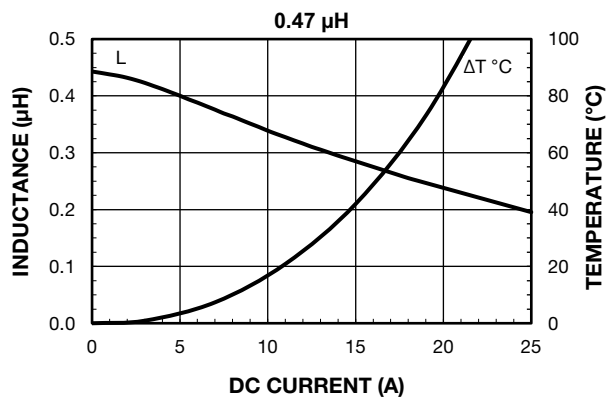
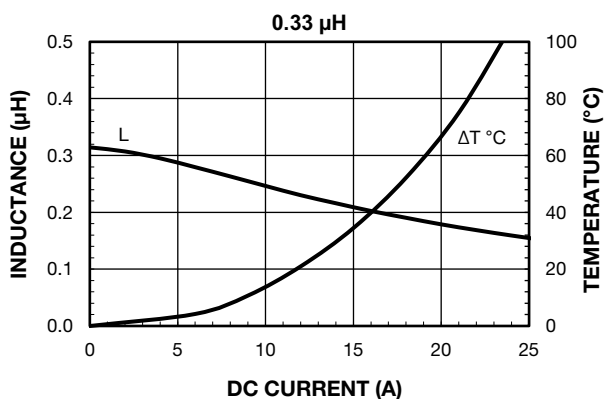
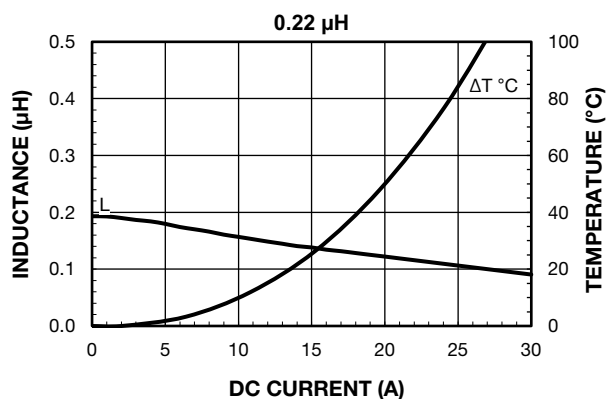
- <sup>(1)</sup> All 1P product is intended to be used for design validation testing only

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.

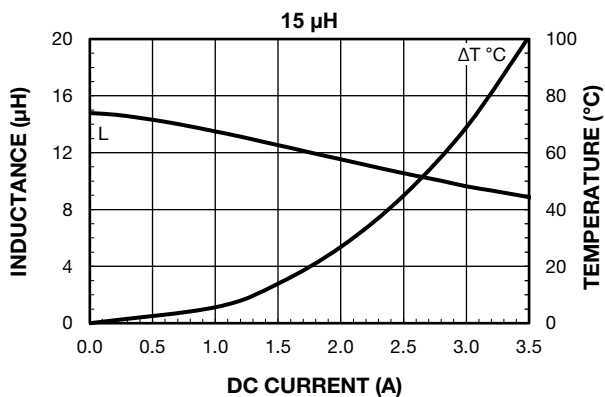
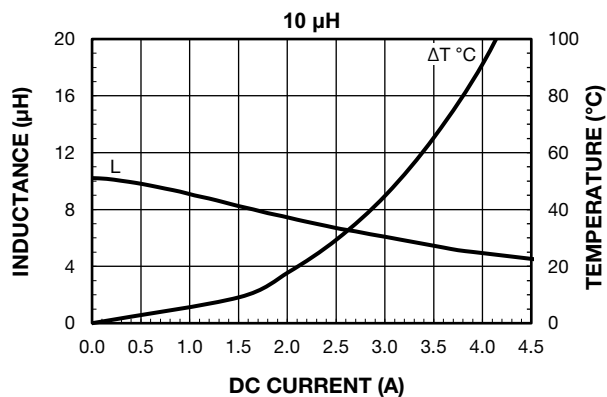
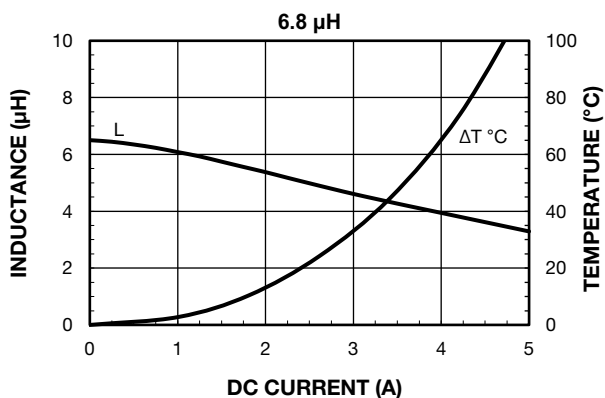
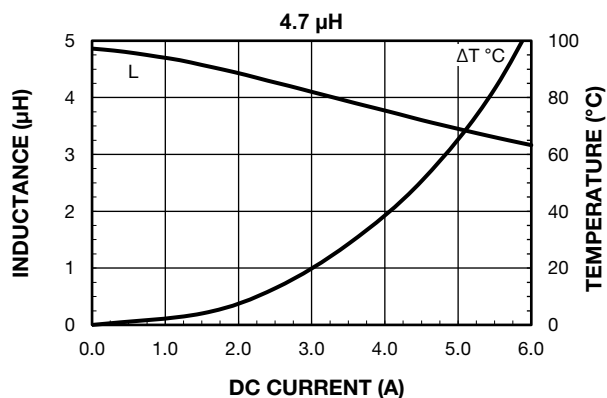
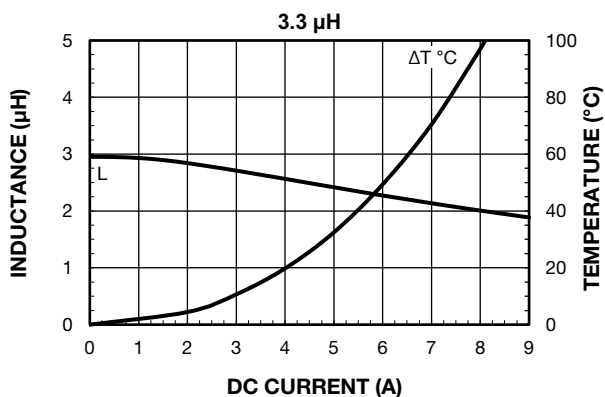
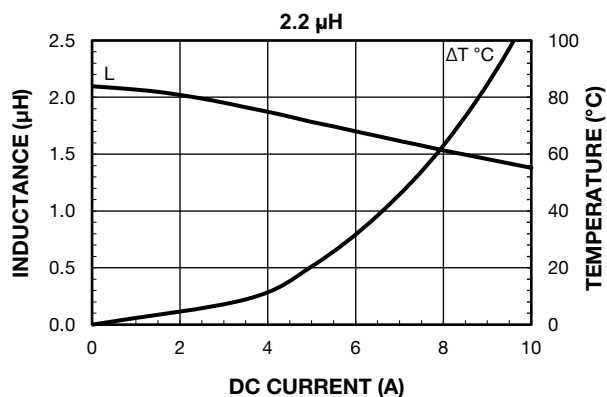


PERFORMANCE GRAPHS



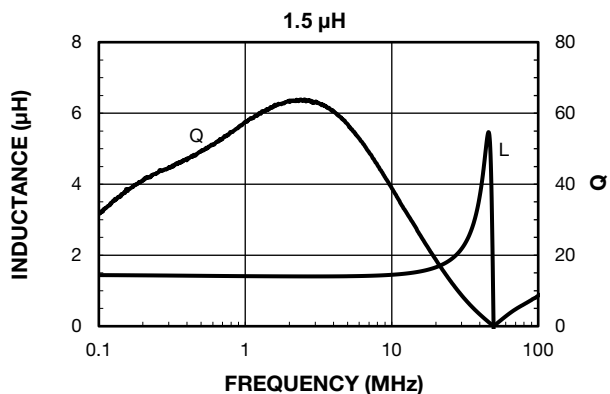
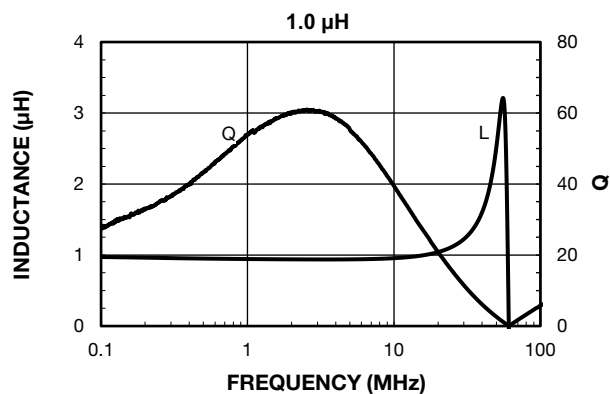
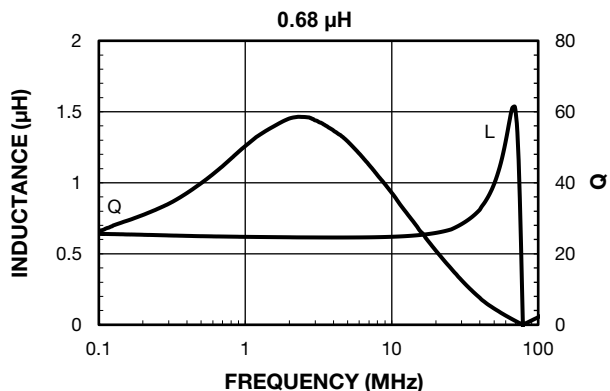
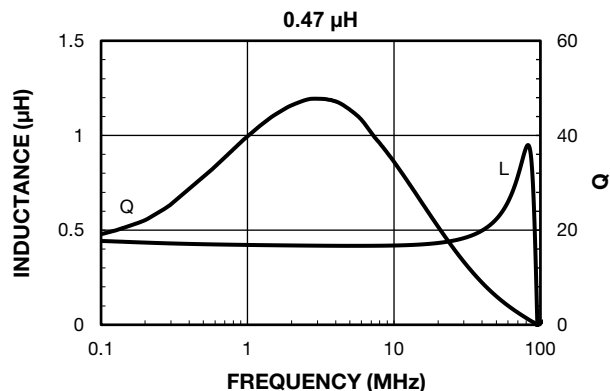
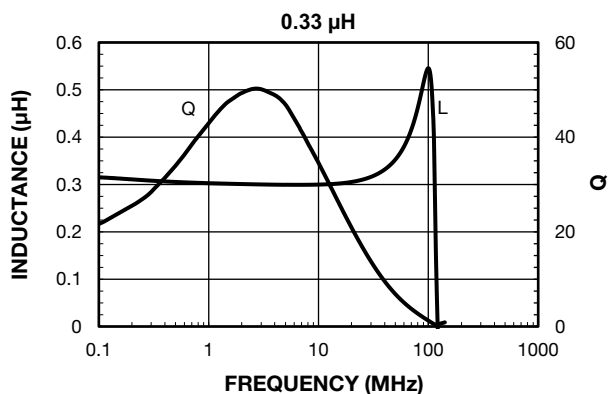
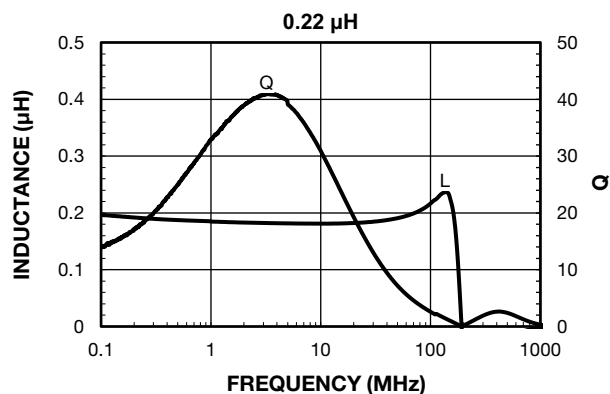


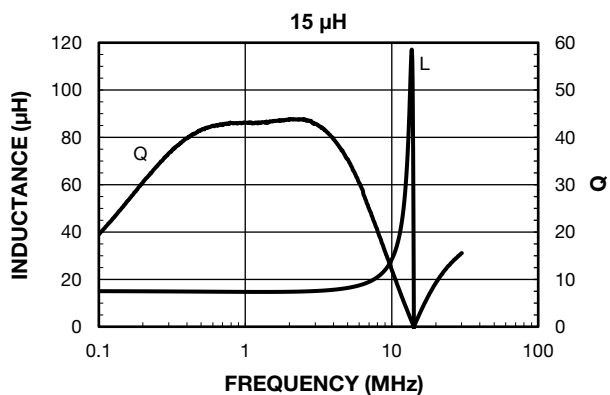
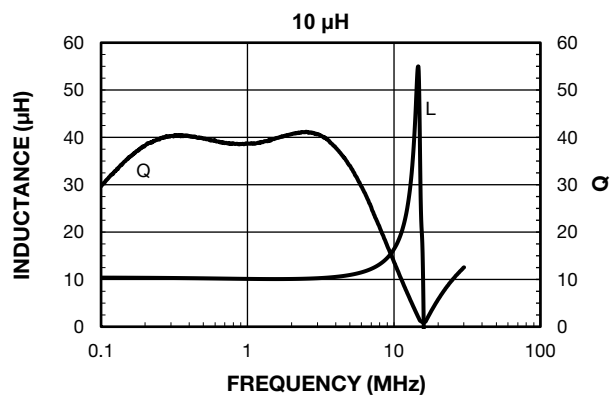
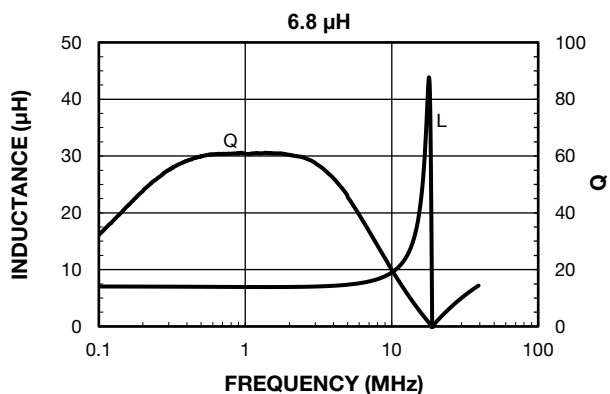
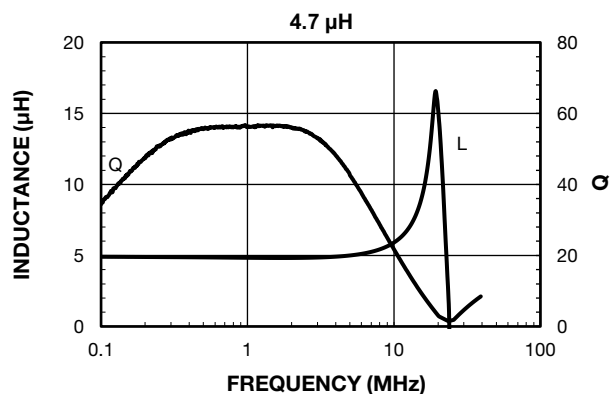
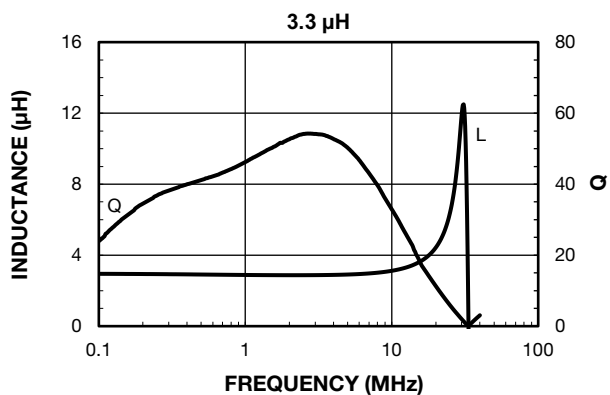
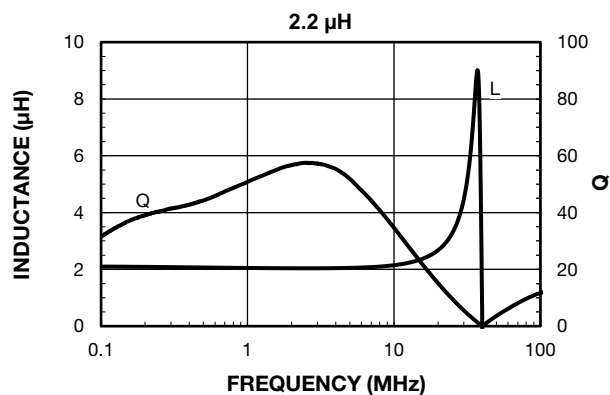
PERFORMANCE GRAPHS





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY



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




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