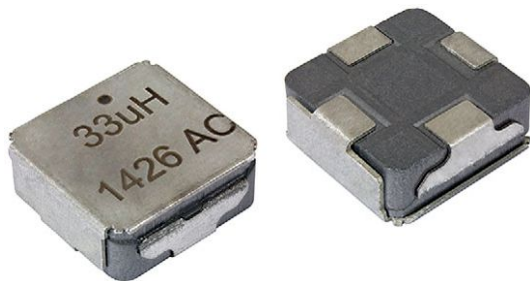


## IHLE® High Current Inductors With E-Field Shield



### LINKS TO ADDITIONAL RESOURCES



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS					
$L_0$ INDUCTANCE $\pm 20\%$ AT 100 kHz, 0.25 V, 0 A ( $\mu$ H)	DCR TYP. 25 °C (m $\Omega$ )	DCR MAX. 25 °C (m $\Omega$ )	HEAT RATING CURRENT DC TYP. (A) <sup>(1)</sup>	SATURATION CURRENT DC TYP. (A) <sup>(2)</sup>	SRF TYP. (MHz)
0.47	1.55	1.66	30.0	28.5	72.1
1.0	2.87	3.07	23.5	24.0	37.2
1.5	4.2	4.5	22.0	17.9	32
2.2	8.15	8.76	15.0	12.0	30.1
3.3	11.0	11.81	11.0	12.0	25.5
4.7	14.3	15.32	9.8	9.2	20.1
5.6	16.5	17.60	9.3	9.0	16.3
6.8	20.9	22.36	9.1	9.0	16.3
10	30.9	33.06	6.5	8.5	11.5
15	47.0	50.29	5.1	7.7	10.4
22	70.5	75.44	4.1	6.4	8.30
33	110	117.70	3.7	4.2	5.79
47	167	178	3.1	4.1	5.22
68	240	252	2.4	3.5	4.02

#### 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
  - Rated operating voltage, across inductor (V1) = 50 V
  - Rated isolation voltage, inductor lead to shield (V2) = 50 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 %

**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.

### FEATURES

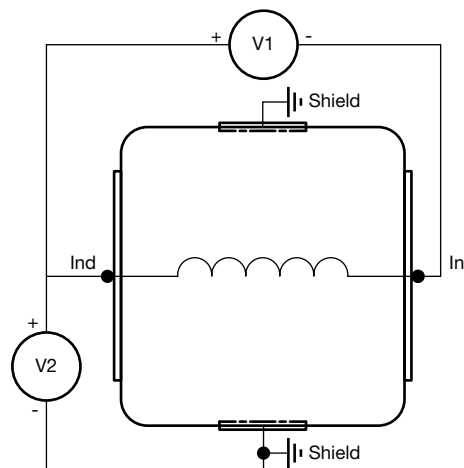
- High temperature, up to 155 °C
- Integrated E-Shield for maximum EMI reduction <sup>(1)</sup>
- Excellent DC/DC energy storage up to 1 MHz to 2 MHz. Filter inductor applications up the SRF (see standard electrical specifications table).
- Integrated E-Field shield eliminates need for separate shielding
- 20 dB E-Field reduction at 1 cm  
- Measured vertically from top center of device
- Lowest DCR/ $\mu$ H, in this package size
- Handles high transient current spikes without saturation
- Coplanarity of the 4 terminals  $\leq 100 \mu$ m
- IHLE design; PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

#### Note

- (1) Maximum E-Field reduction is realized when the IHLE shield is connected to ground

### 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)
- Telecom infrastructure

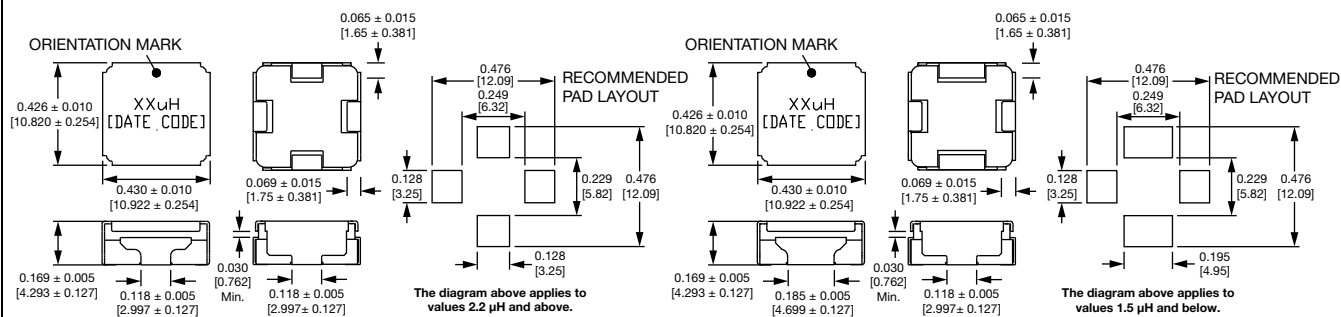


**DESCRIPTION**

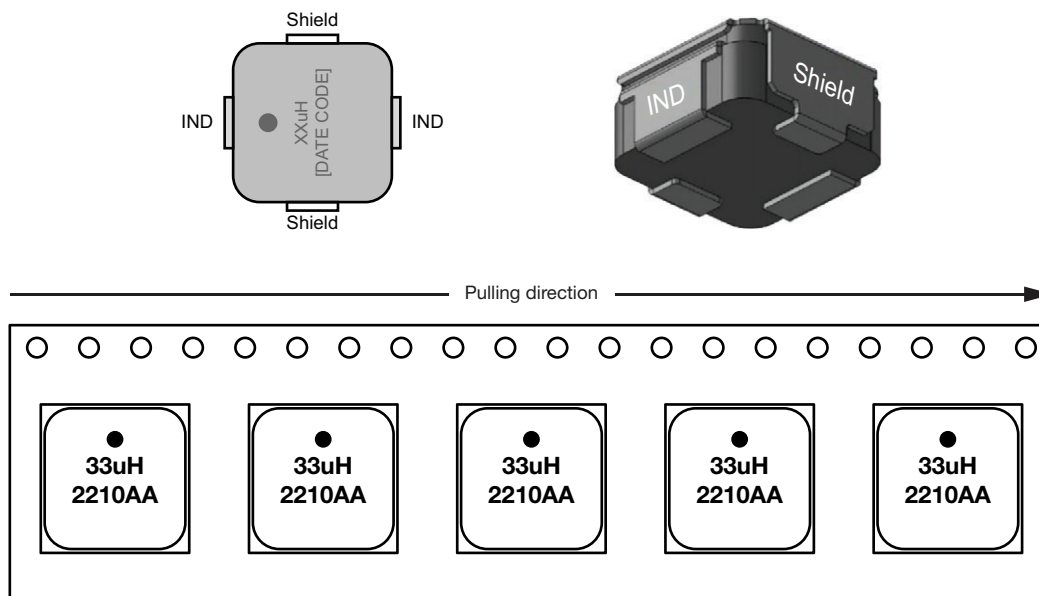
<b>IHLE-4040DD-51</b>	<b>33 <math>\mu</math>H</b>	<b><math>\pm 20\%</math></b>	<b>ER</b>	<b>e3</b>
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

**GLOBAL PART NUMBER**

I	H	L	E	4	0	4	0	D	D	E	R	3	3	0	M	5	1
PRODUCT FAMILY				SIZE				PACKAGE CODE		INDUCTANCE VALUE			TOL.	SERIES			

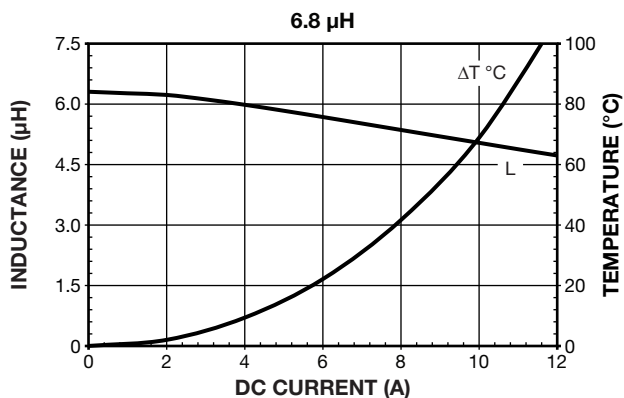
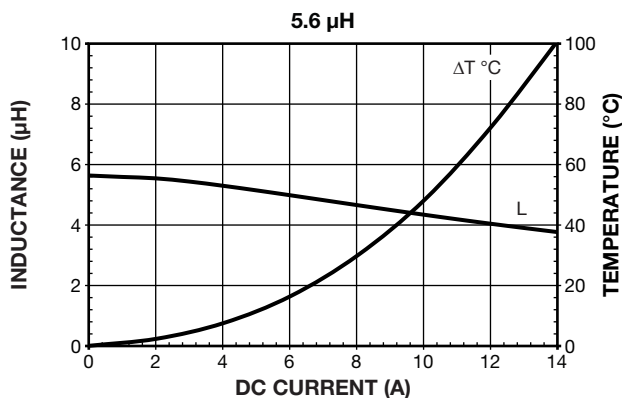
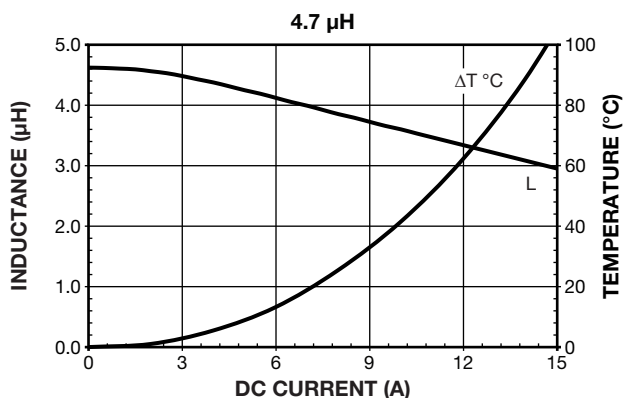
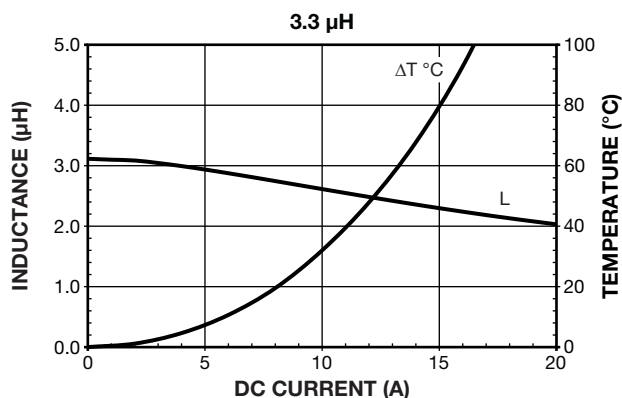
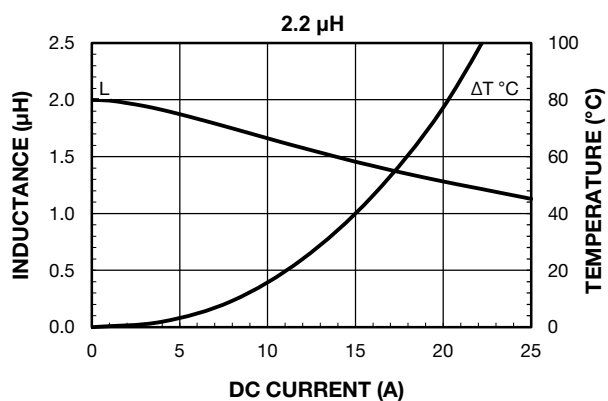
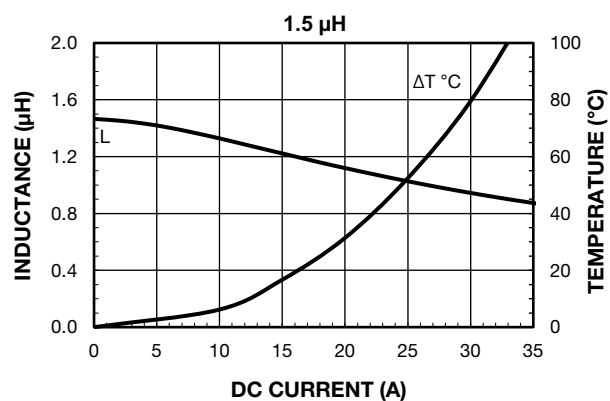
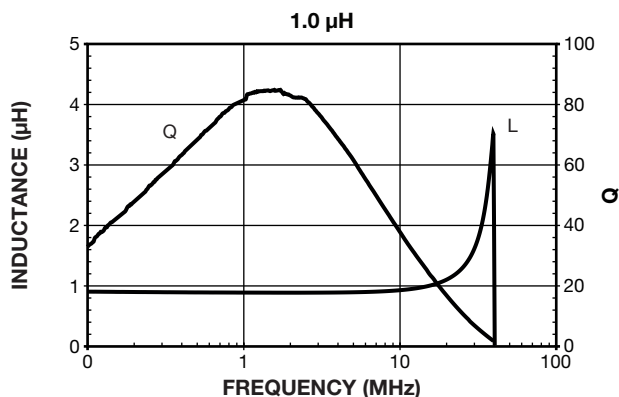
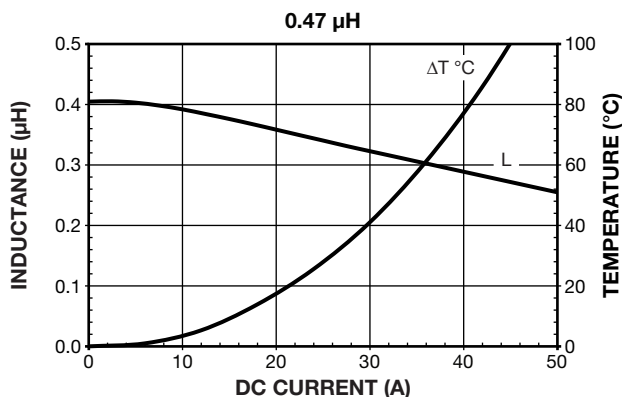
**DIMENSIONS** in inches [millimeters]**Notes**

- Dot indicate the coil termination
- Coplanarity of 4 terminals: 0.004" [0.10]

**PART MARKING / POCKET TAPE ORIENTATION**

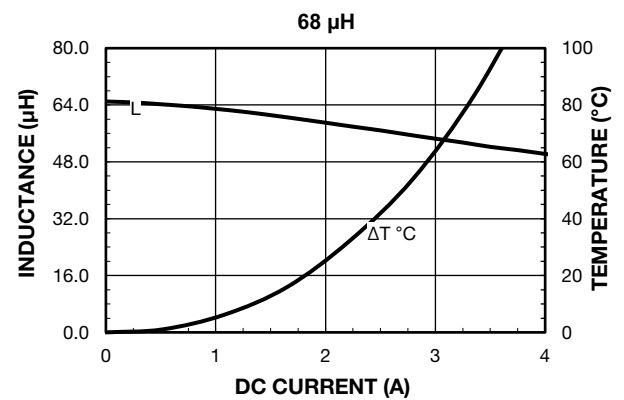
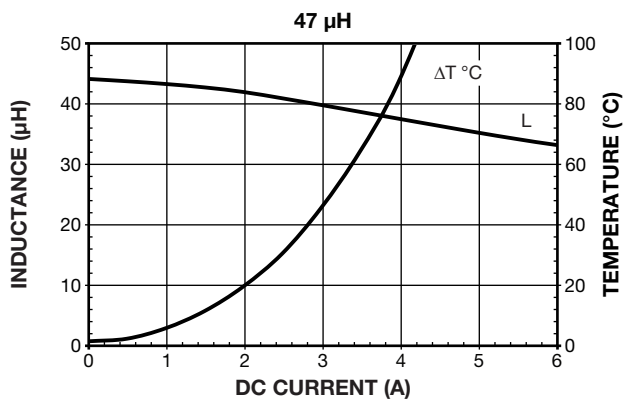
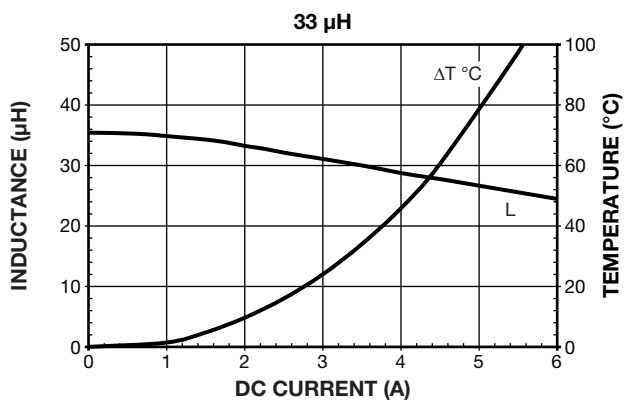
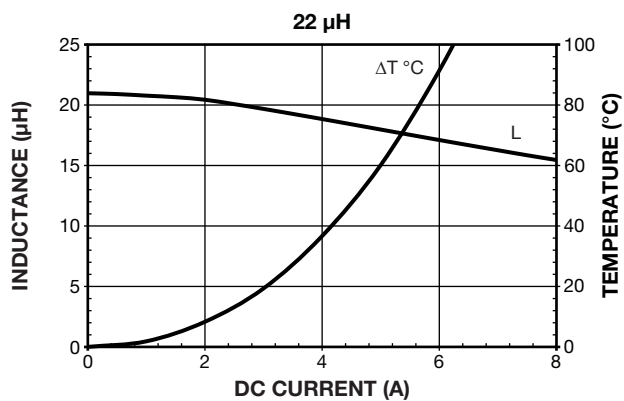
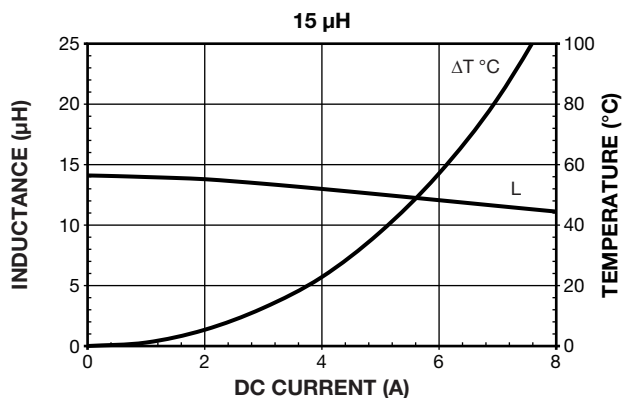
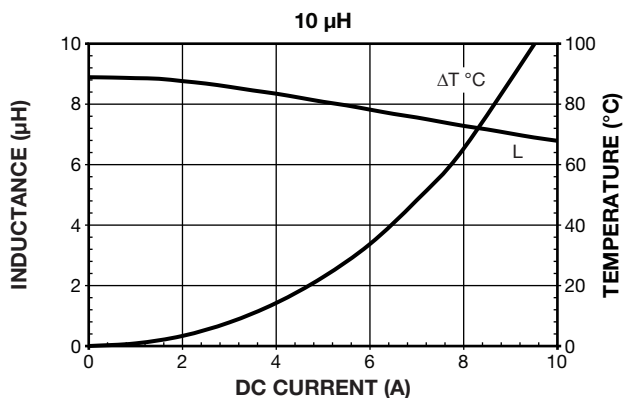


PERFORMANCE GRAPHS



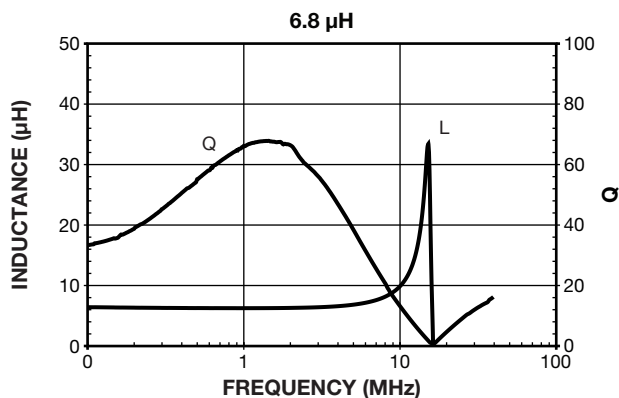
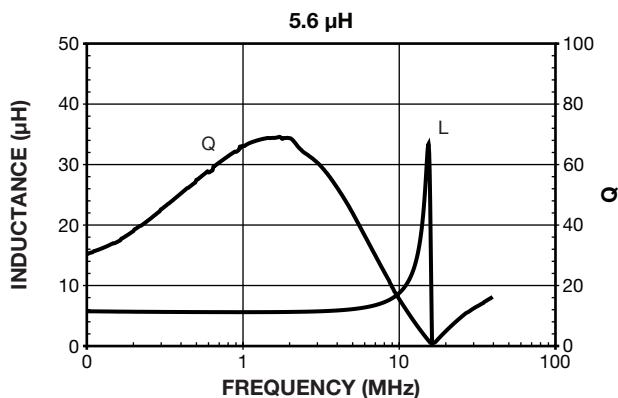
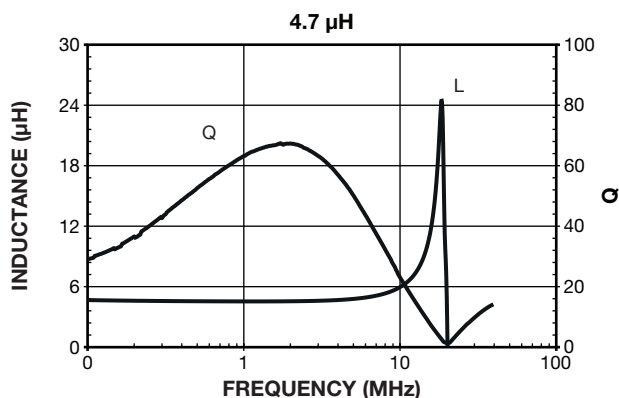
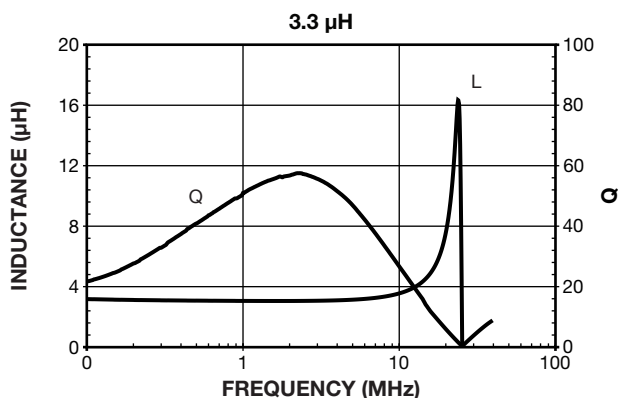
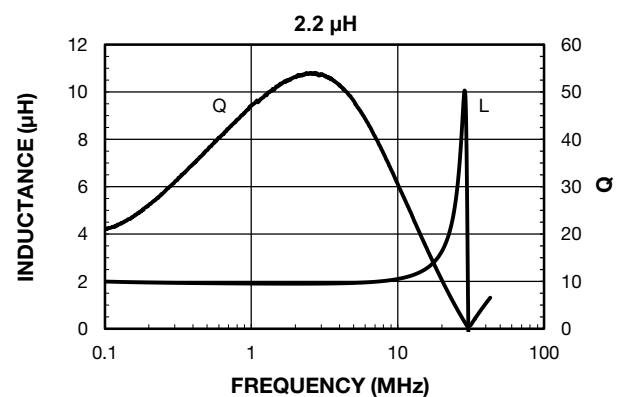
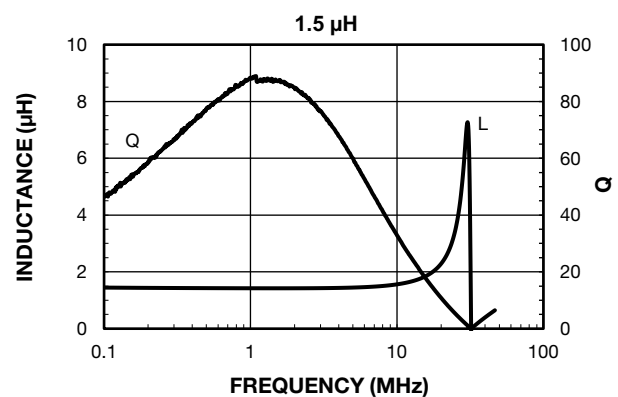
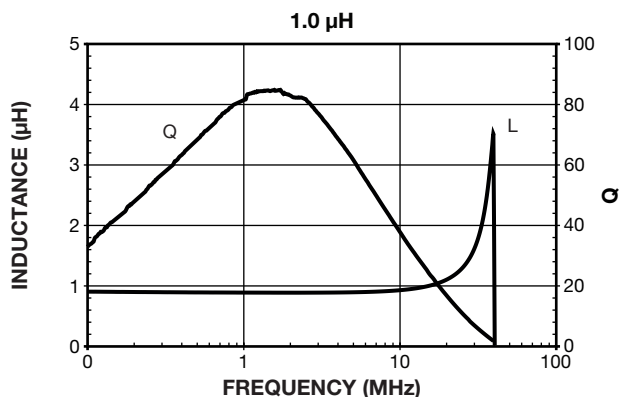
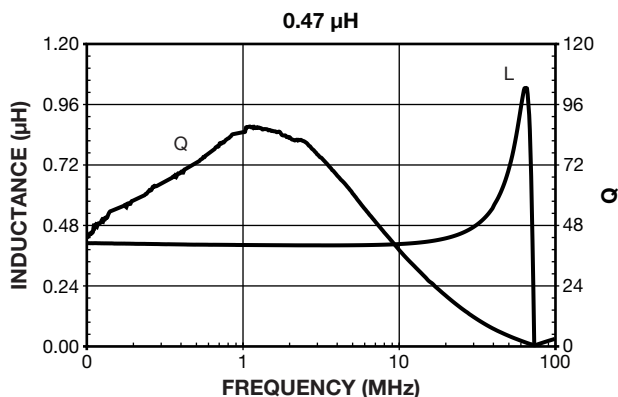


PERFORMANCE GRAPHS



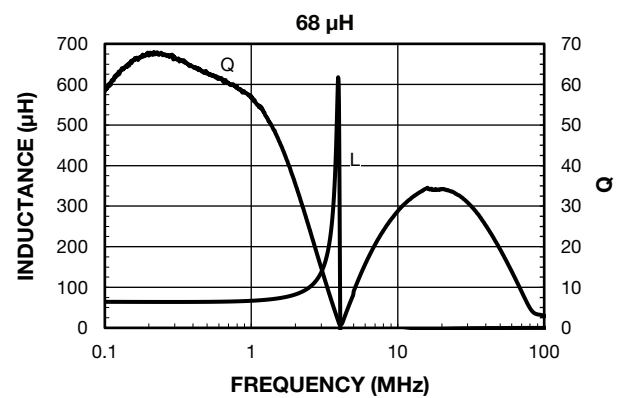
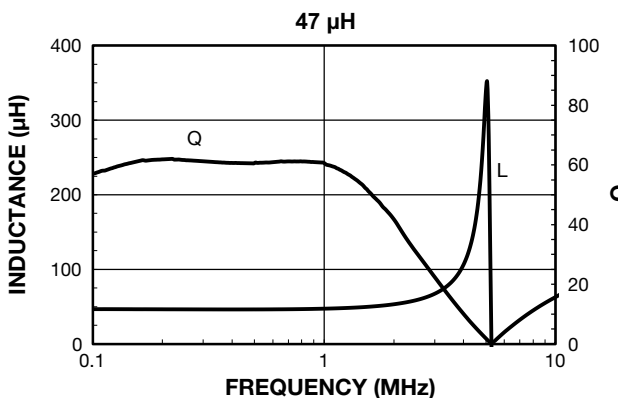
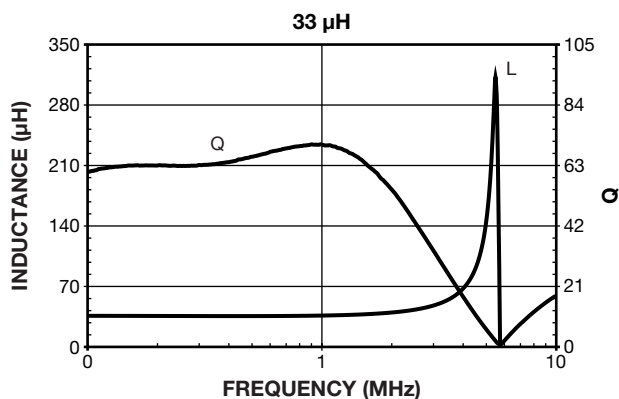
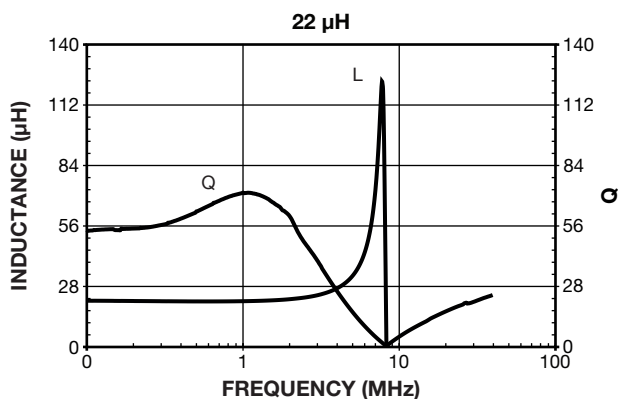
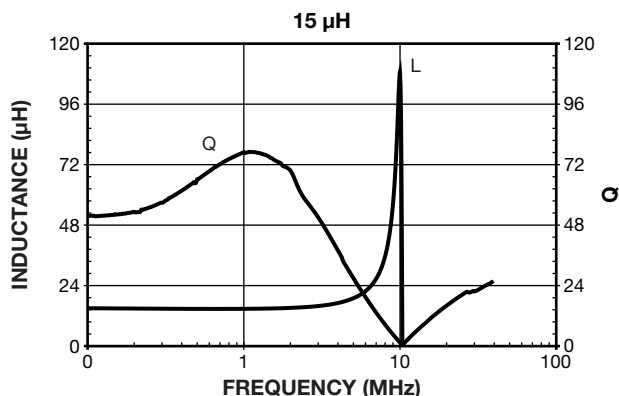
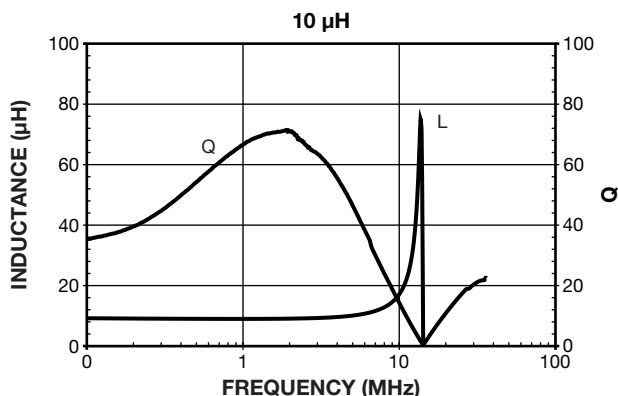


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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