

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



### LINKS TO ADDITIONAL RESOURCES



### APPLICATIONS

- Engine and transmission control units
- Diesel injection drivers
- DC/DC converters for entertainment / navigation systems
- Noise suppression for motors
  - Windshield wipers
  - Power seats
  - Power mirrors
  - Heating and ventilation blower
  - HID lighting
- LED drivers

### FEATURES

- High temperature, continuous operation up to 155 °C
- Patented shielded construction
- Excellent DC/DC energy storage and filter inductor applications
- Integrated E-Field shield eliminates need for separate shielding
- Up to 20 dB E-Field reduction at 1 cm, measured vertically from top center of device
- Four terminals offer superior shock and vibration performance
- Handles high transient current spikes without saturation
- AEC-Q200 qualified
- 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)


**RoHS**  
COMPLIANT

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

### STANDARD ELECTRICAL SPECIFICATIONS

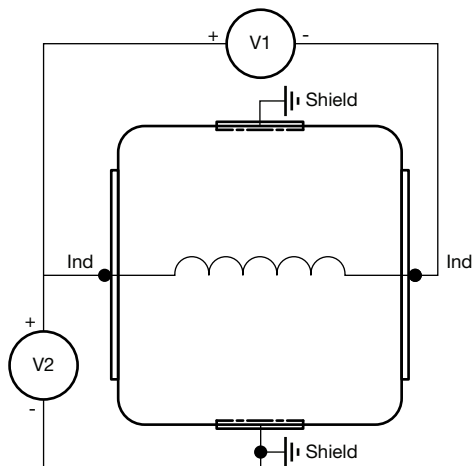
PART NUMBER	L <sub>0</sub> INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A (μH)	DCR TYP. 25 °C (mΩ)	DCR MAX. 25 °C (mΩ)	HEAT RATING CURRENT DC TYP. (A) <sup>(1)</sup>	SATURATION CURRENT DC TYP. (A)		SRF TYP. (MHz)
					20 % DROP <sup>(2)</sup>	30 % DROP <sup>(3)</sup>	
IHLE2020CDERR22M5A	0.22	3.95	4.23	18.0	8.6	13.0	164.5
IHLE2020CDERR33M5A	0.33	4.90	5.34	15.8	8.1	11.8	127.0
IHLE2020CDERR47M5A	0.47	6.02	6.44	14.6	6.5	9.4	88.0
IHLE2020CDERR68M5A	0.68	9.10	9.74	11.3	6.6	9.5	78.0
IHLE2020CDER1R0M5A	1.0	11.50	12.10	9.8	7.2	10.3	66.0
IHLE2020CDER1R5M5A	1.5	18.00	19.80	7.9	6.6	9.4	49.2
IHLE2020CDER2R2M5A	2.2	24.70	26.00	6.5	5.0	7.1	39.8
IHLE2020CDER3R3M5A	3.3	44.00	47.00	5.2	4.3	6.1	33.4
IHLE2020CDER4R7M5A	4.7	72.80	78.30	4.1	3.7	6.0	23.8
IHLE2020CDER6R8M5A	6.8	104.0	111.0	3.2	2.0	2.9	18.8
IHLE2020CDER100M5A	10	132.0	138.0	2.8	1.9	2.7	15.9
IHLE2020CDER150M5A	15	195.0	208.0	2.4	1.8	2.6	14.1

#### 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
- <sup>(1)</sup> DC current (A) that will cause an approximate ΔT of 40 °C
- <sup>(2)</sup> DC current (A) that will cause L<sub>0</sub> to drop approximately 20 %
- <sup>(3)</sup> DC current (A) that will cause L<sub>0</sub> to drop approximately 30 %

**PATENT(S):** [www.vishay.com/patents](http://www.vishay.com/patents)

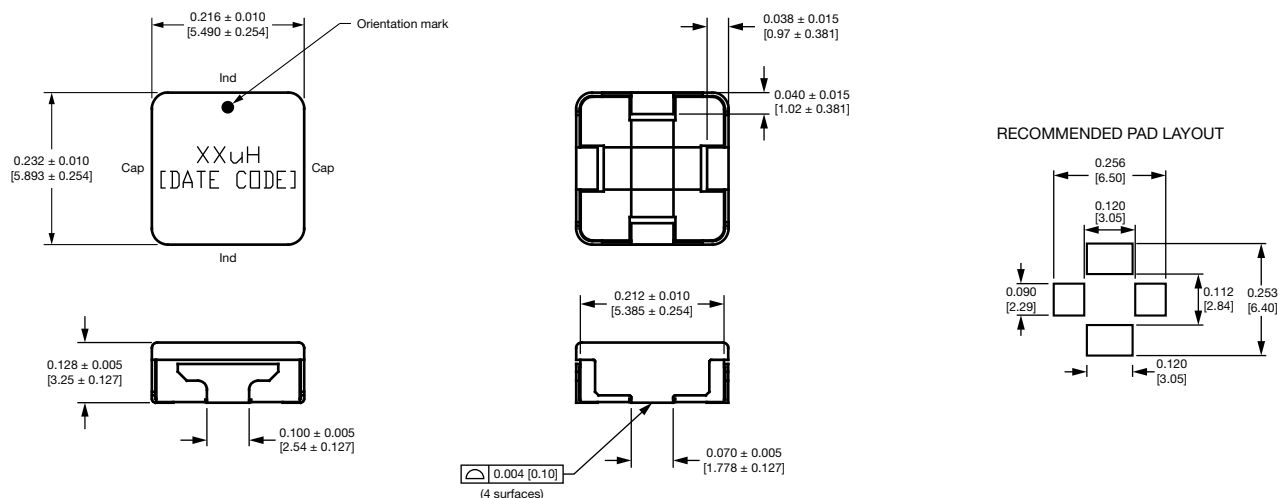
This Vishay product is protected by one or more United States and international patents.

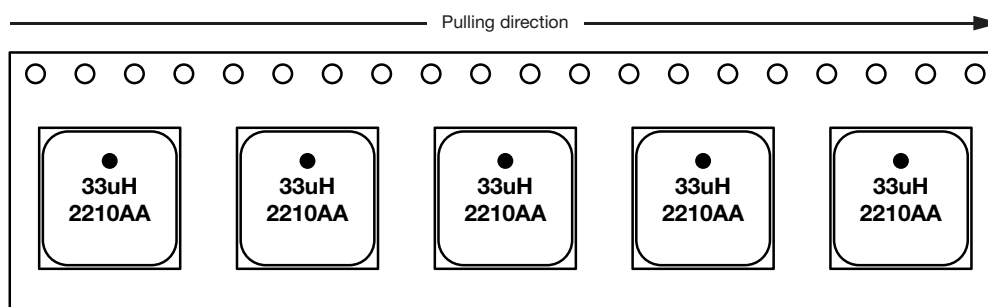
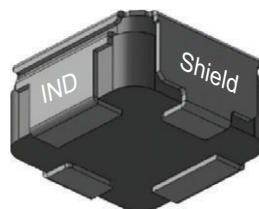
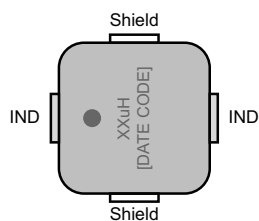
**DESCRIPTION OF VOLTAGE RATINGS**

**DESCRIPTION**

<b>IHLE-2020CD-5A</b>	<b>1.0 <math>\mu</math>H</b>	<b><math>\pm 20\%</math></b>	<b>Tape and Reel</b>	<b>e3</b>
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

**GLOBAL PART NUMBER**

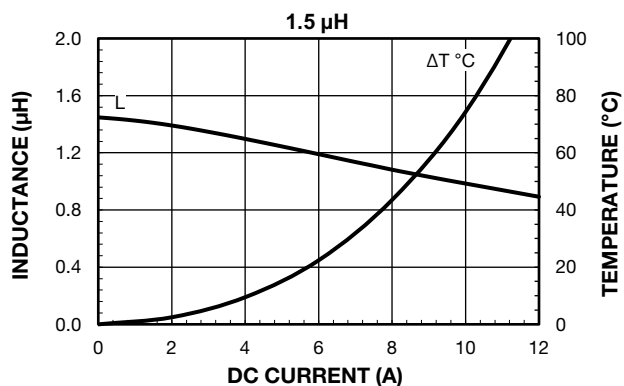
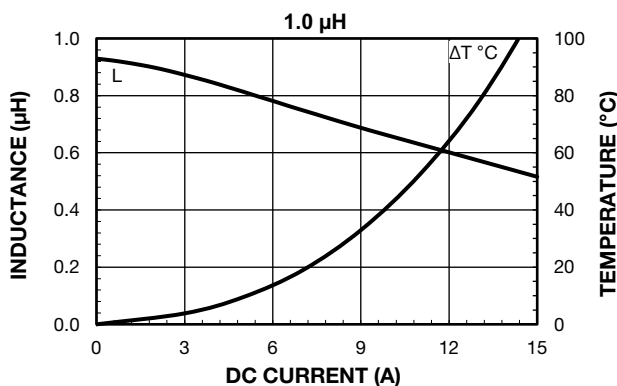
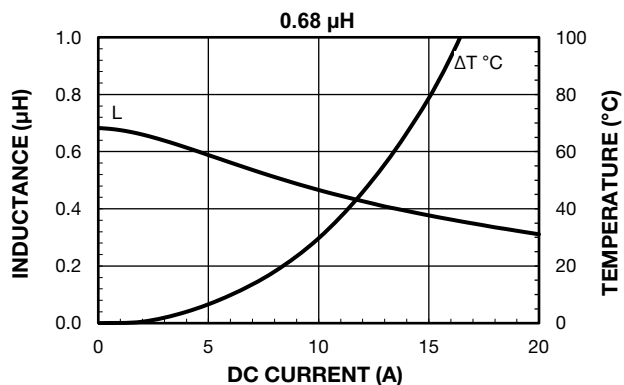
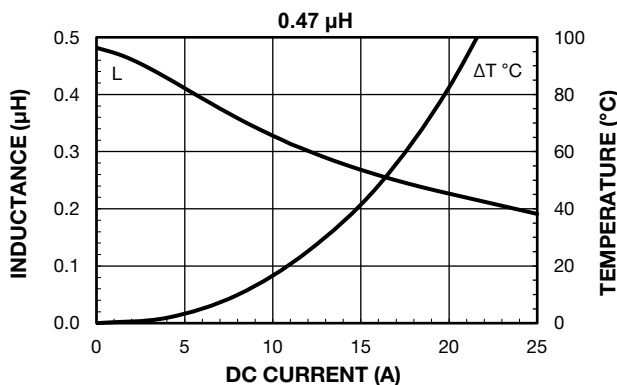
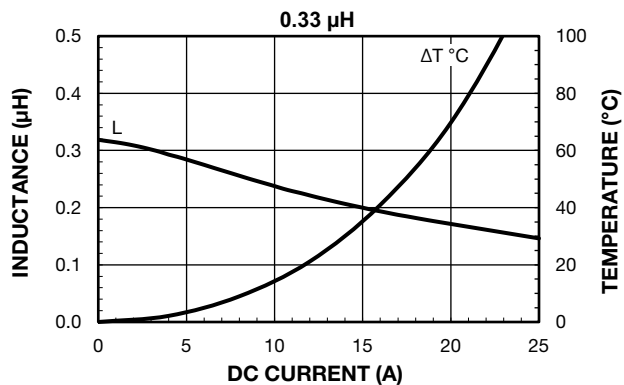
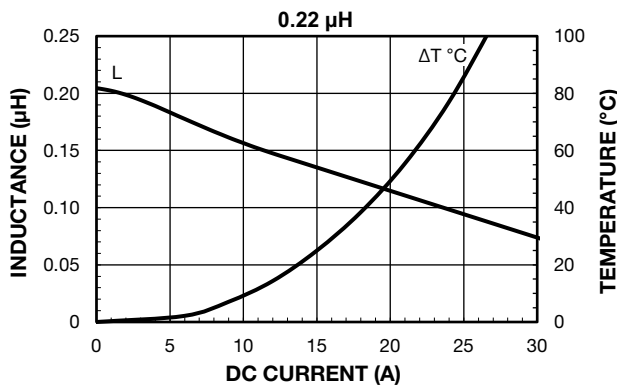
I	H	L	E	2	0	2	0	C	D	E	R	1	R	0	M	5	A
PRODUCT FAMILY				SIZE						PACKAGE CODE		INDUCTANCE VALUE			TOL.	SERIES	

**DIMENSIONS** in inches [millimeters]


**PART MARKING / POCKET TAPE ORIENTATION**


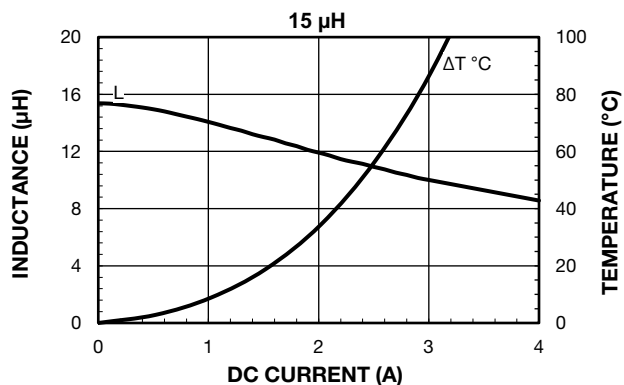
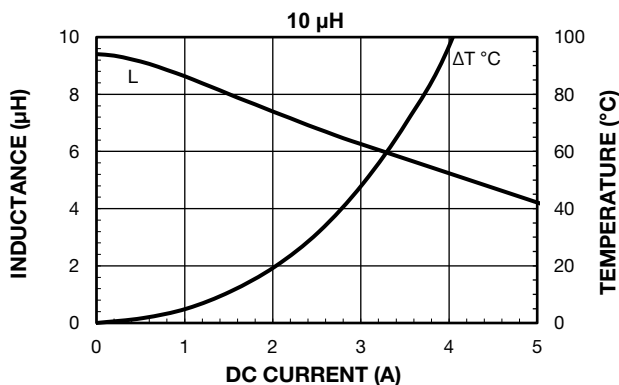
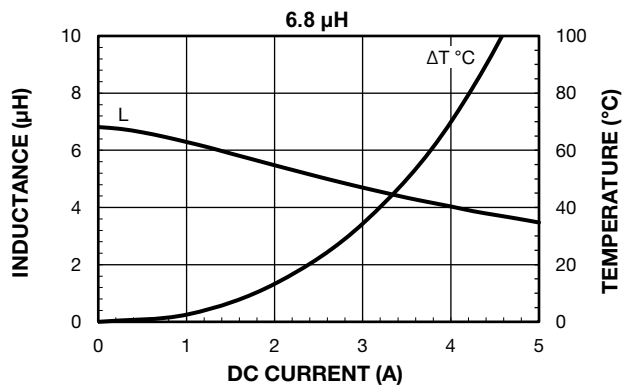
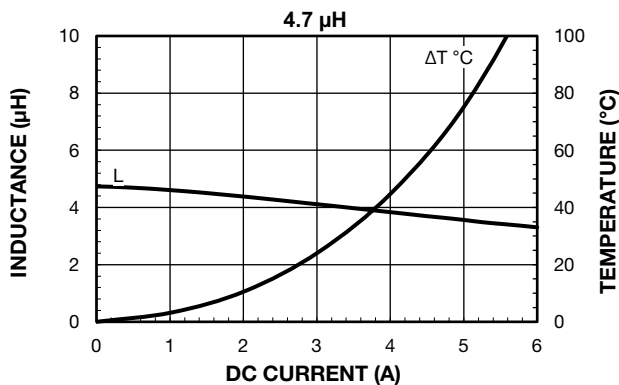
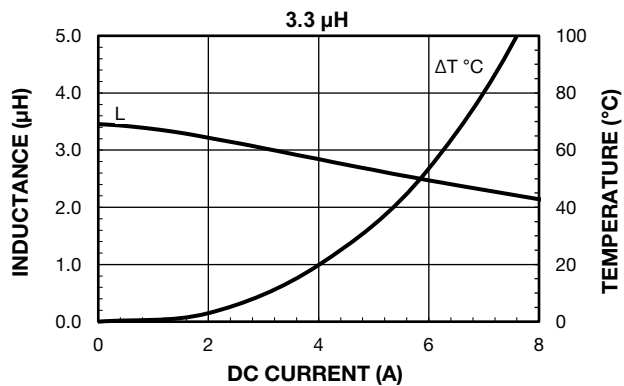
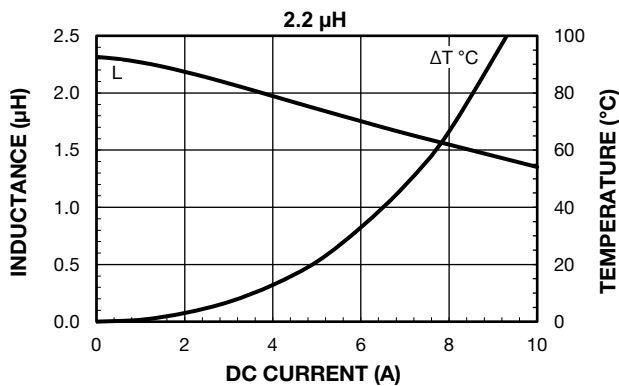


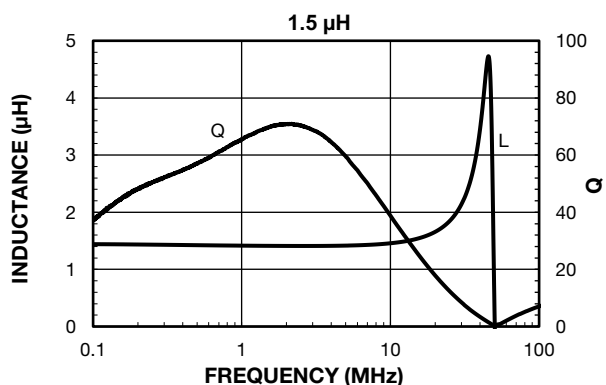
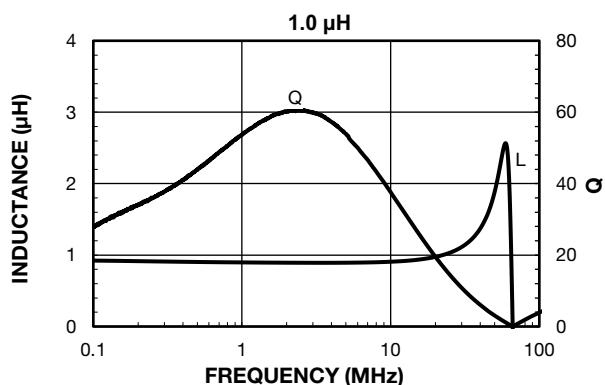
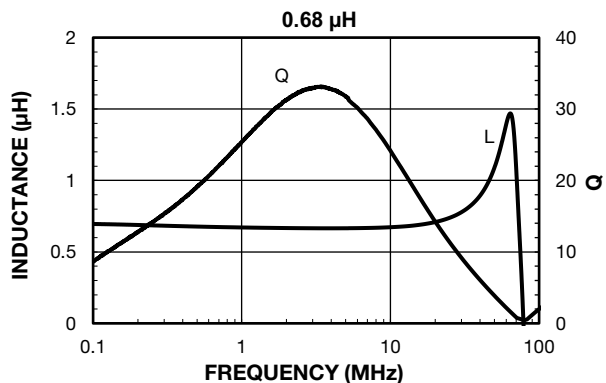
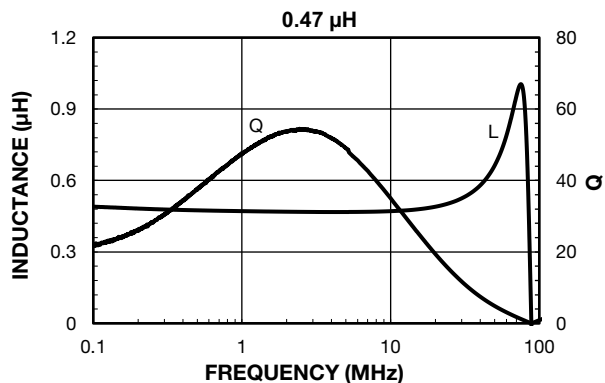
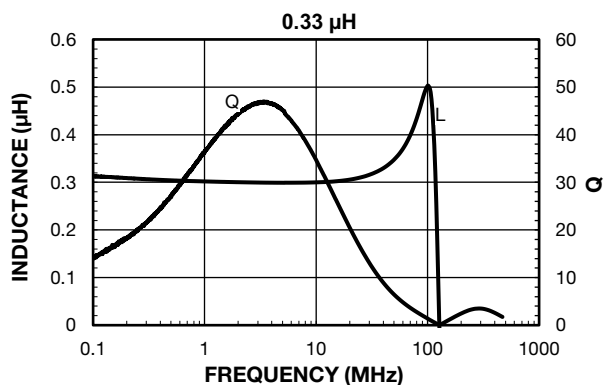
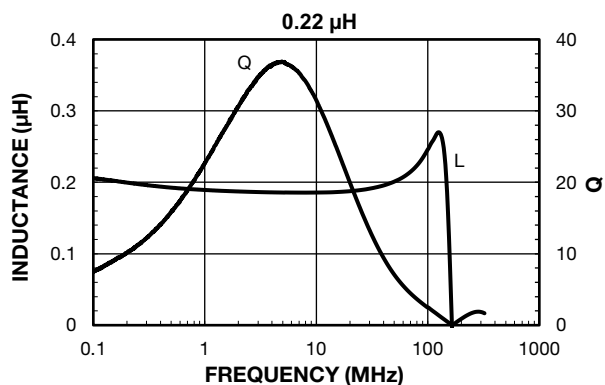
PERFORMANCE GRAPHS





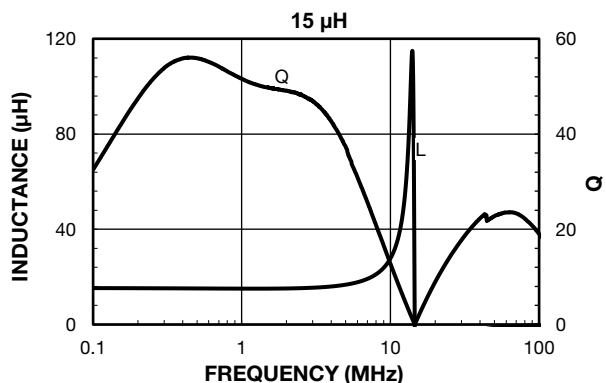
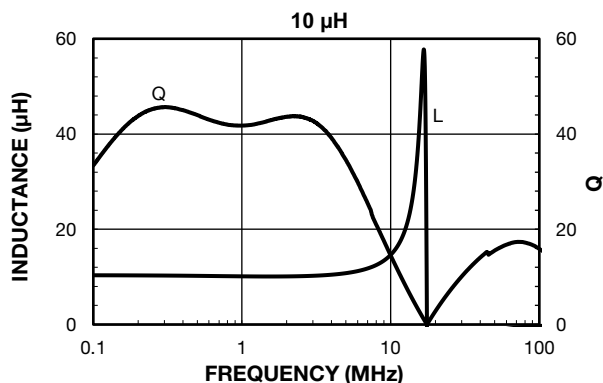
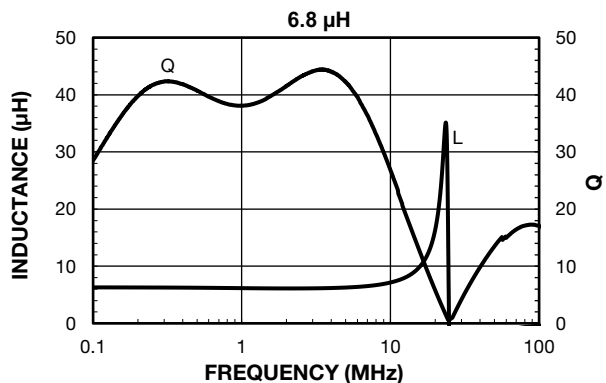
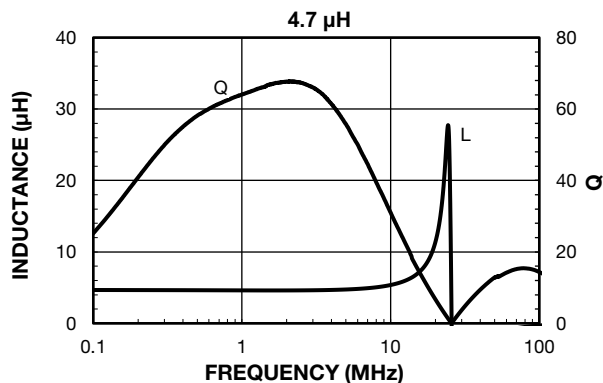
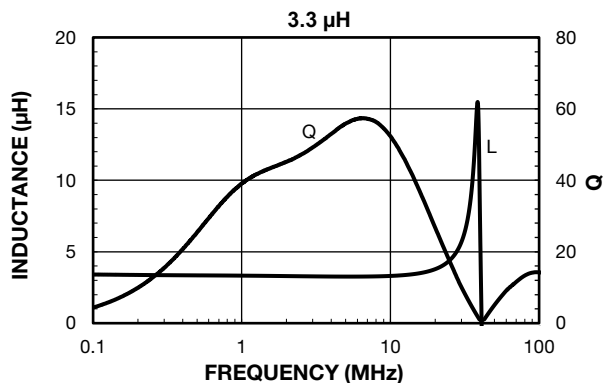
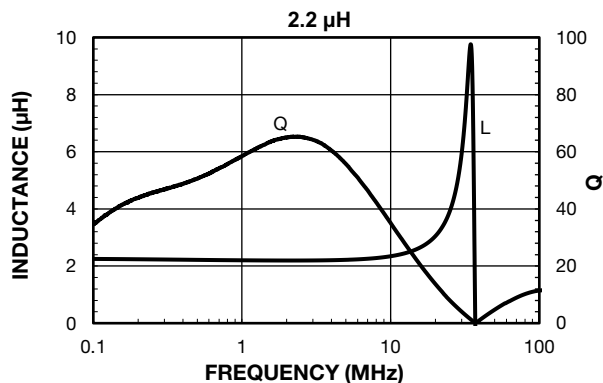
PERFORMANCE GRAPHS



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




PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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