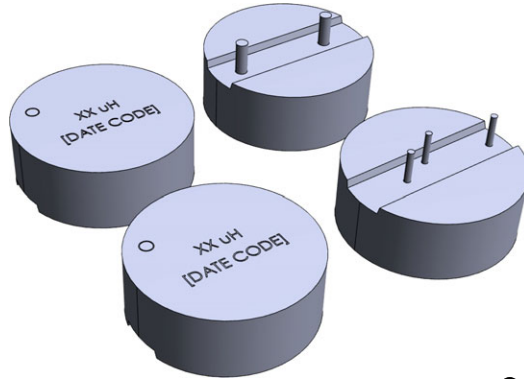
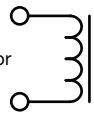


# Automotive High Current, Radial, Through-Hole Power Inductor



Single-coil 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)

AUTOMOTIVE GRADE


**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

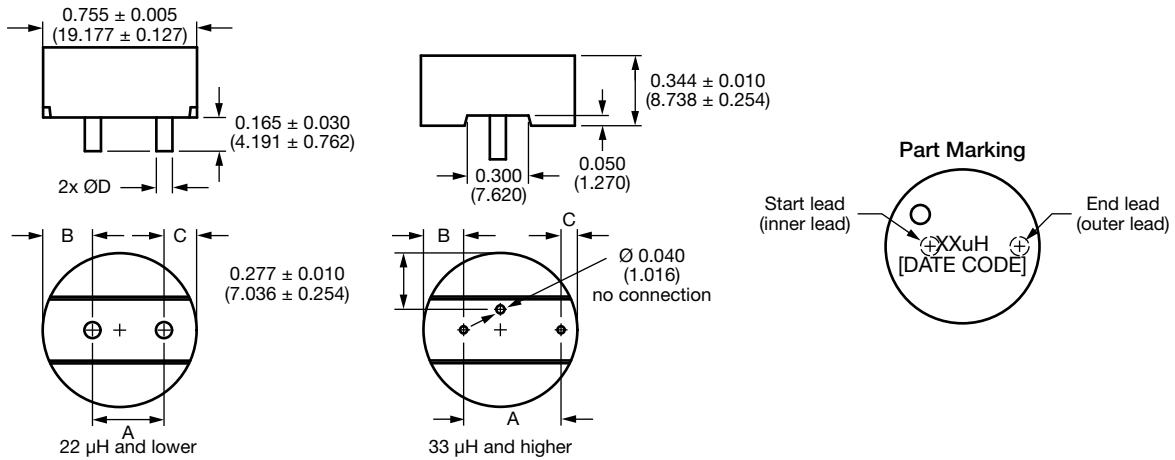
STANDARD ELECTRICAL SPECIFICATIONS							
PART NUMBER	L <sub>0</sub> INDUCTANCE ± 20 % AT 100 kHz, 0.25 V, 0 A ( $\mu$ H)	DCR TYP. 25 °C (m $\Omega$ )	DCR MAX. 25 °C (m $\Omega$ )	HEAT RATING CURRENT DC TYP. (A) <sup>(1)</sup>	SATURATION CURRENT DC TYP. (A) <sup>(2)</sup>		SRF TYP. (MHz)
					20 % DROP	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

<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<sub>0</sub> to drop approximately 20 % and 30 %, respectively

**DIMENSIONS** in inches [millimeters]


VALUE	A ± 0.010 (± 0.254)	B ± 0.010 (± 0.254)	C ± 0.010 (± 0.254)	D ± 0.005 (± 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**

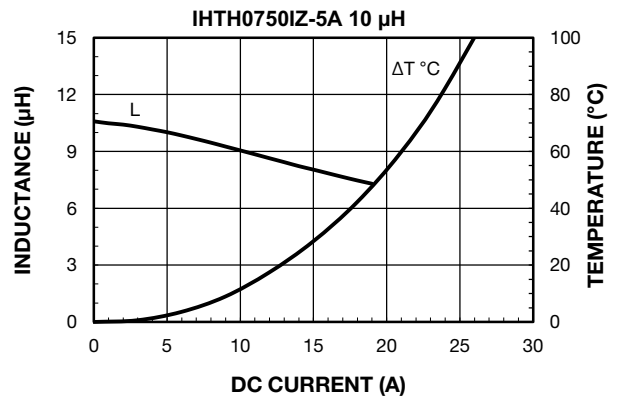
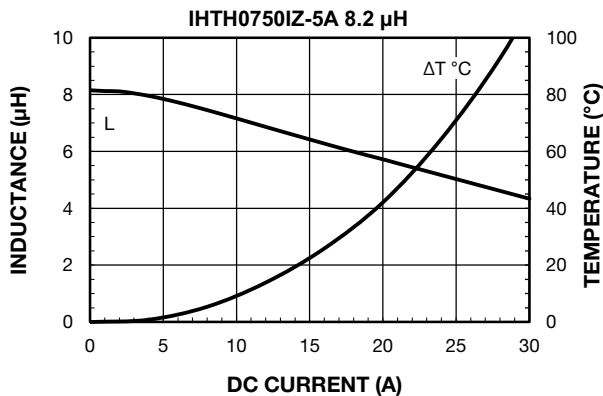
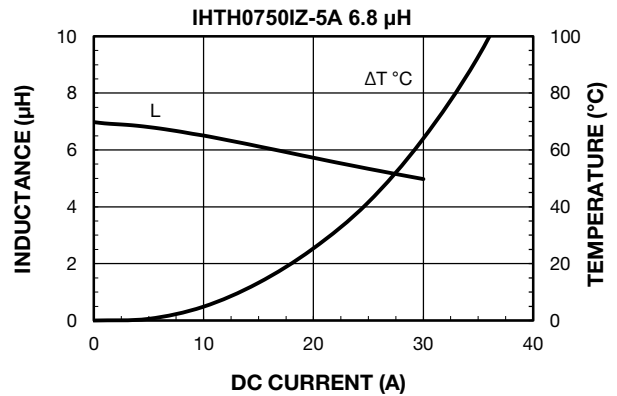
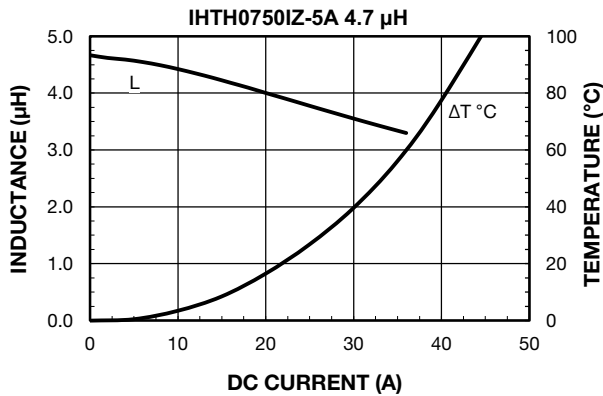
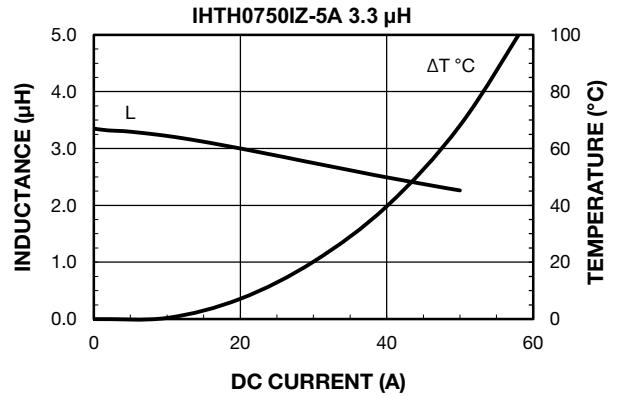
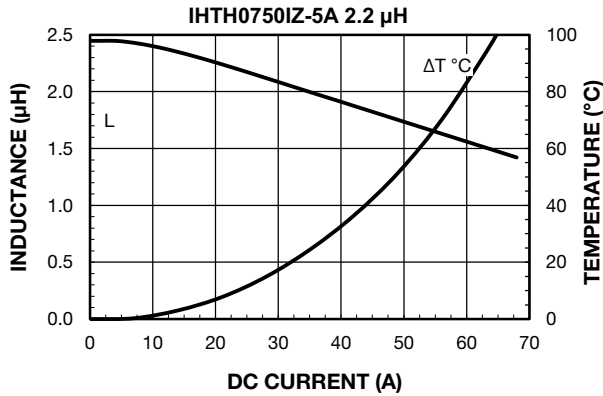
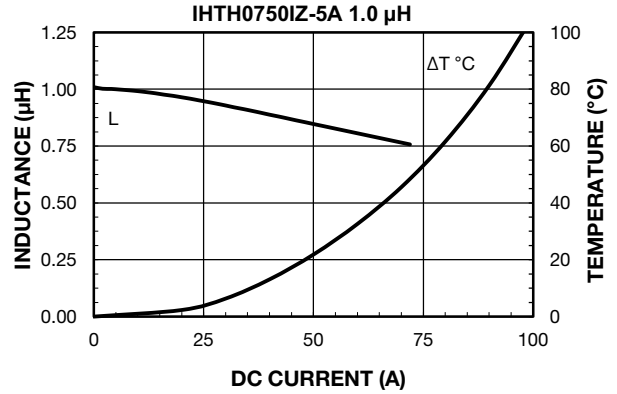
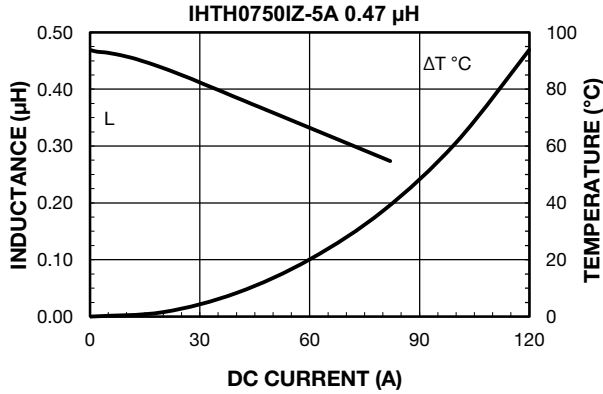
IHTH-0750IZ-5A MODEL	4.7 µH INDUCTANCE VALUE	± 20 % INDUCTANCE TOLERANCE
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**GLOBAL PART NUMBER**

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

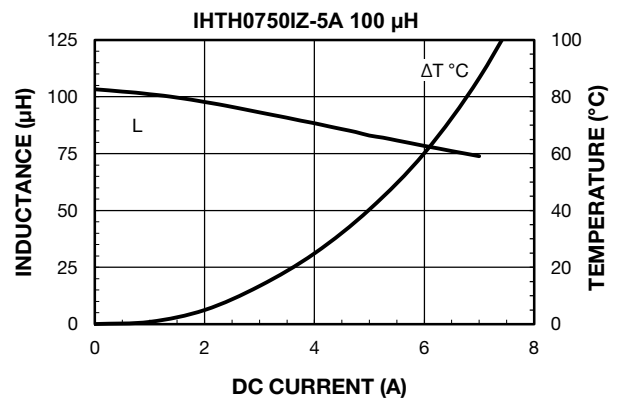
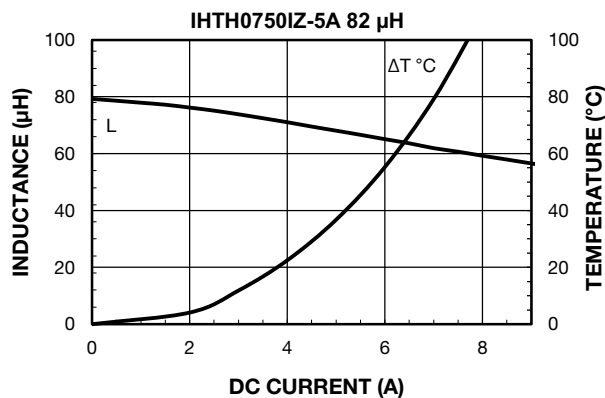
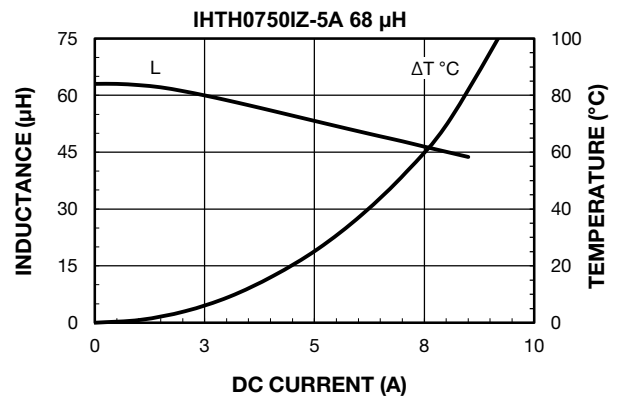
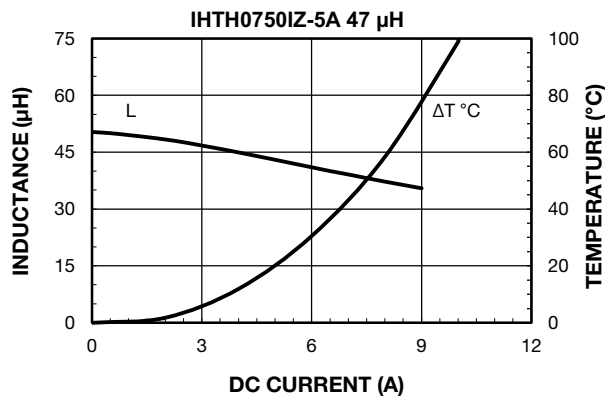
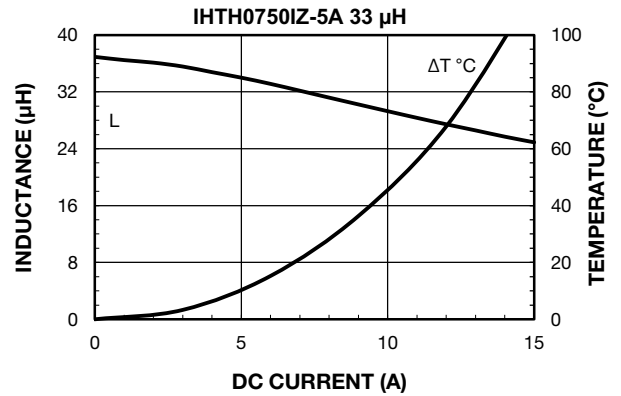
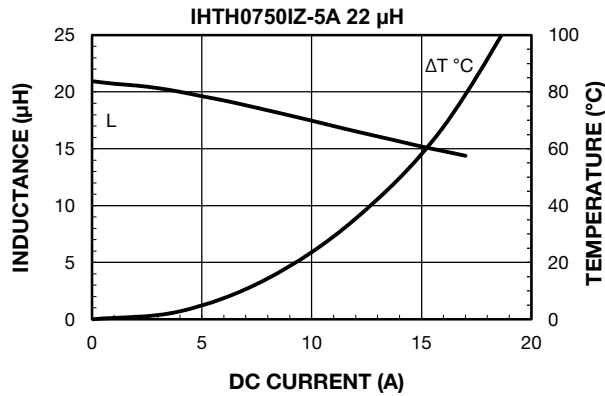


PERFORMANCE GRAPHS



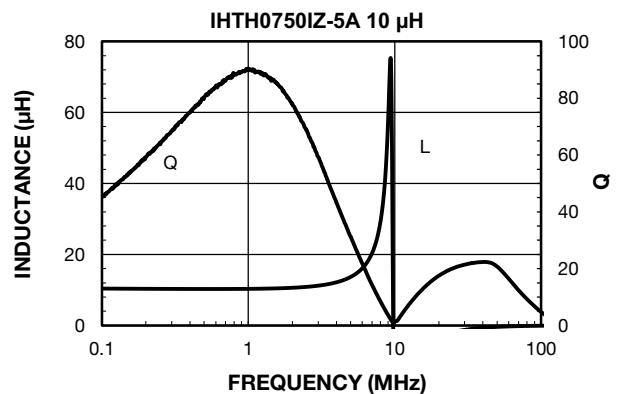
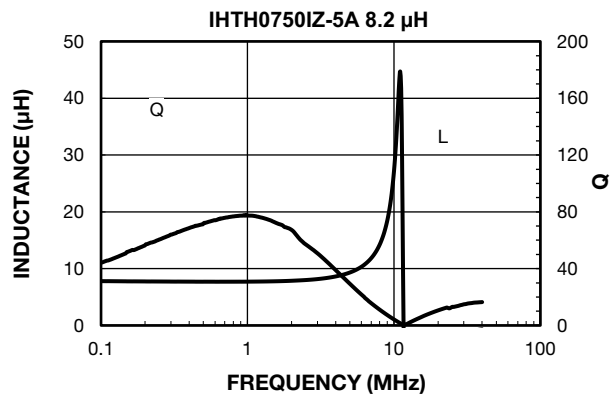
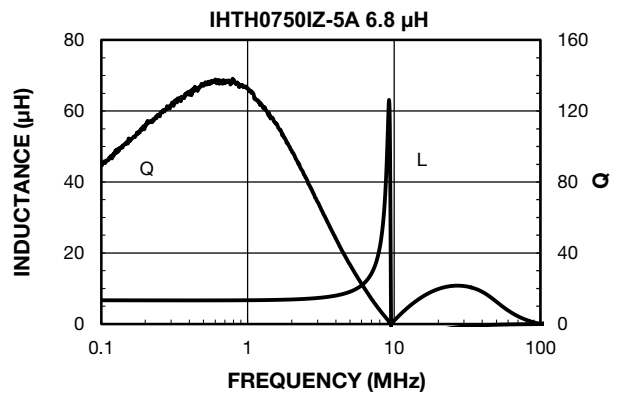
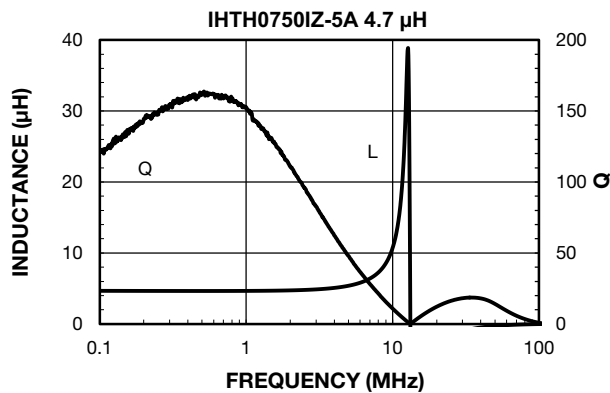
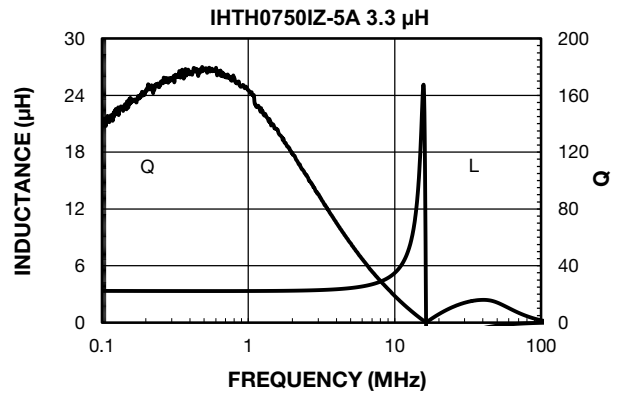
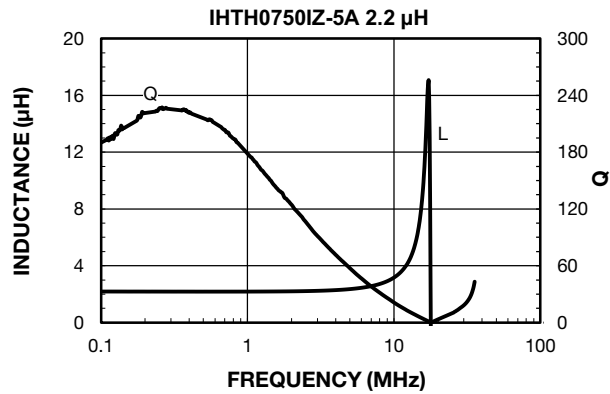
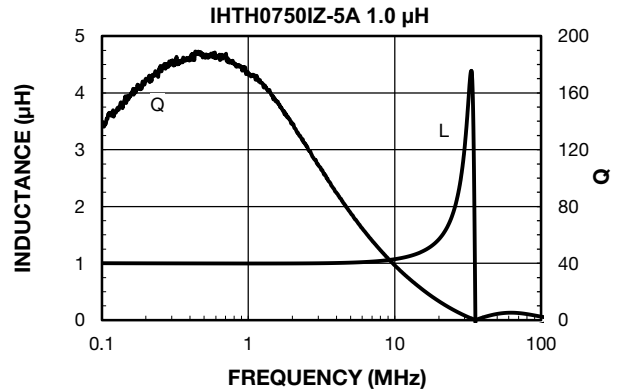
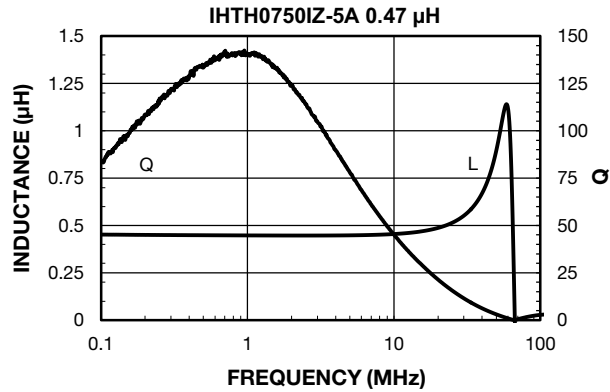


PERFORMANCE GRAPHS



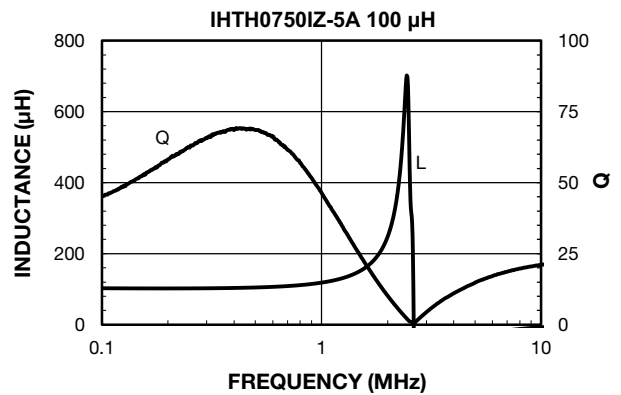
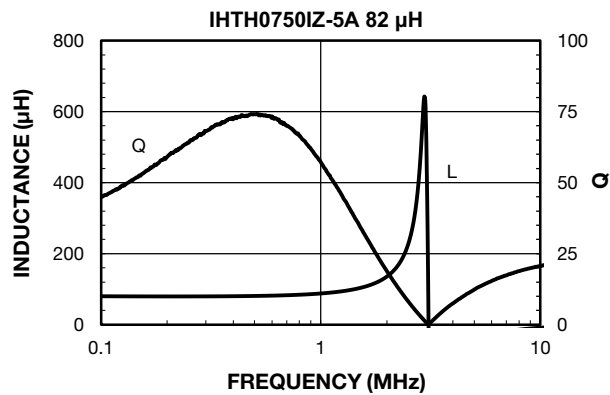
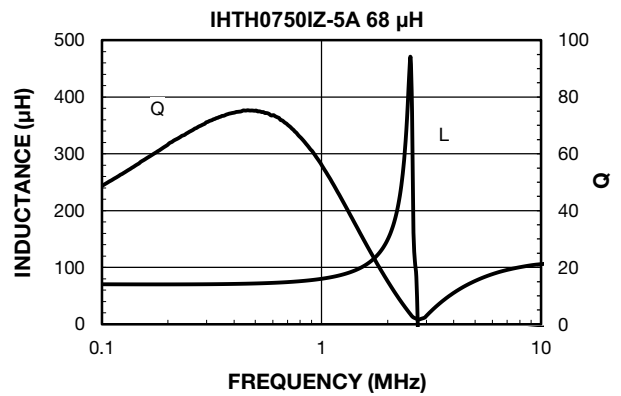
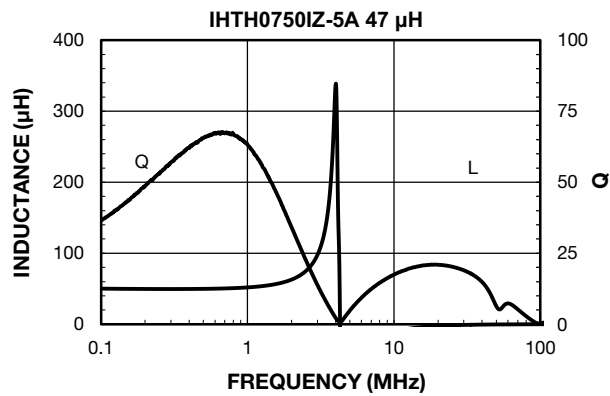
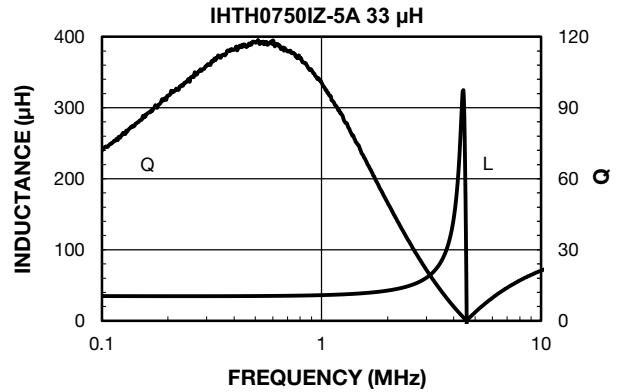
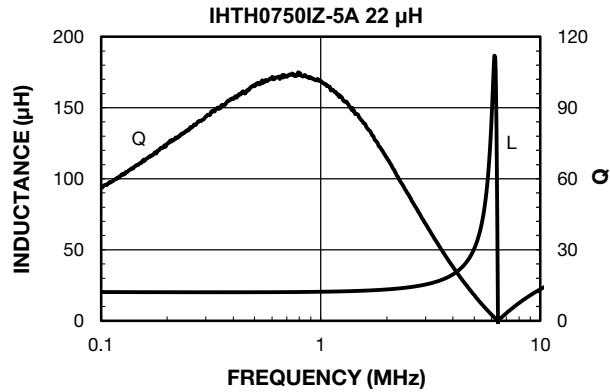


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY





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