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

FEATURES

- MIL-STD-981 class S compliant (see “Screening Codes”)
- High temperature rating, up to 180 °C
- Shielded construction
- Lowest DCR/µH, in this package size
- Handles high transient current spikes without saturation
- Low profile package with high current saturation levels

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

LINKS TO ADDITIONAL RESOURCES

Calculators Infographics

STANDARD ELECTRICAL SPECIFICATIONS

L_0 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) (1)	SATURATION CURRENT DC TYP. (A) (2)	SRF TYP. (MHz)
0.47	0.91	0.97	65.0	76.0	52.3
1.0	1.38	1.48	53.0	42.0	35.5
2.2	2.27	2.43	38.5	38.0	19.8
3.3	3.06	3.27	32.2	32.0	16.5
4.7	4.89	5.23	24.0	26.0	14.0
6.8	7.5	8.0	21.8	22.5	10.5
8.2	8.6	9.23	17.5	14.5	9.40
10.0	10.20	10.91	16.0	13.0	7.70
15.0	15.85	16.96	12.5	13.0	8.55
22.0	21.28	22.27	11.7	11.0	5.97
33.0	36.2	38.9	8.8	9.4	4.43
47.0	52.7	56.4	7.25	7.0	3.72

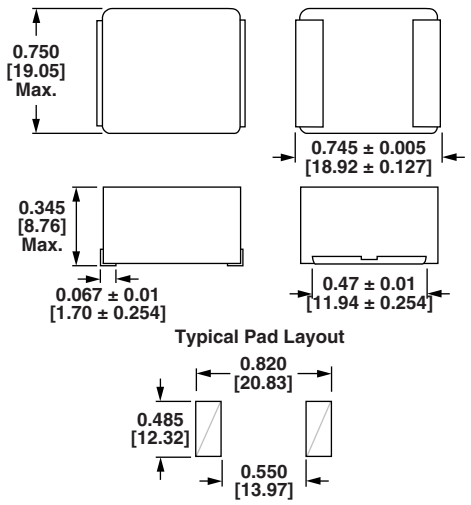
Notes

- 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) = 75 V
- Maximum net weight = 15 g

(1) DC current (A) that will cause an approximate ΔT of 40 °C

(2) DC current (A) that will cause L_0 to drop approximately 20 %

DIMENSIONS in inches [millimeters]



DESCRIPTION

SGIHLP-73HF-8	4.7 µH	± 20 %	B = bulk / tray, T = tape
MODEL	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE

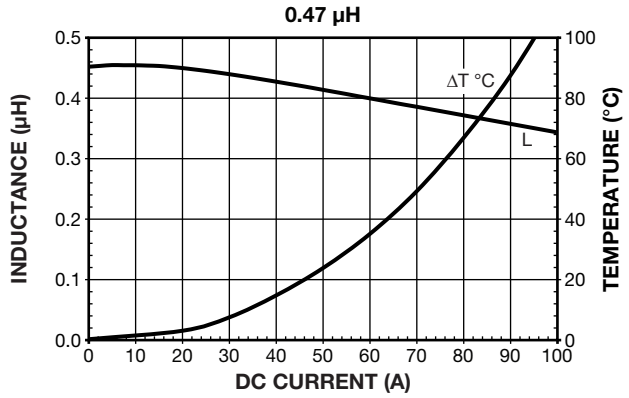
GLOBAL PART NUMBER

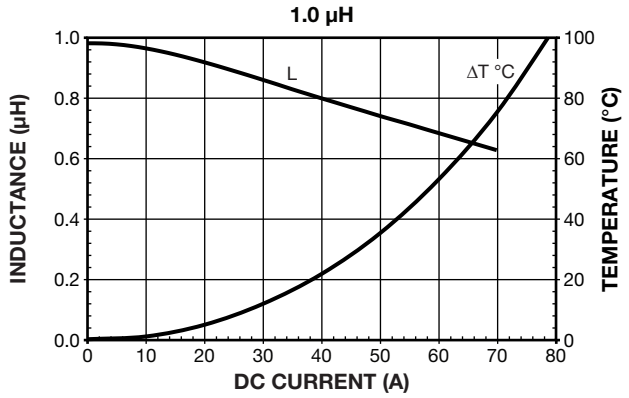
S G I H L P	7 3 H F	B	4 R 7	M	8	1 S
PRODUCT FAMILY	SIZE	PACKAGE CODE	INDUCTANCE VALUE	TOLERANCE	SERIES	SCREENING
		B = bulk / tape **T** = tape	**4R7** = 4.7 µH	**M** = ± 20 % **N** = ± 30 %		

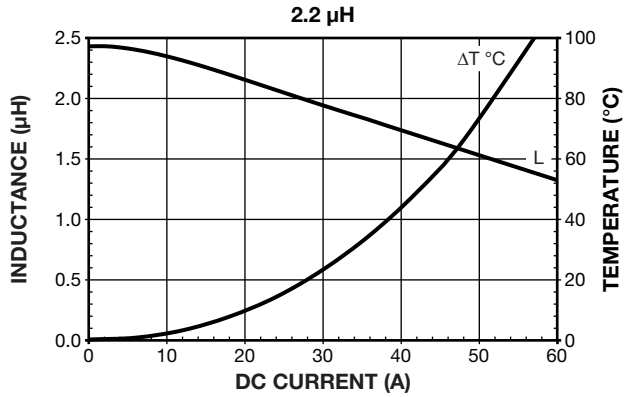
SCREENING BREAKDOWN

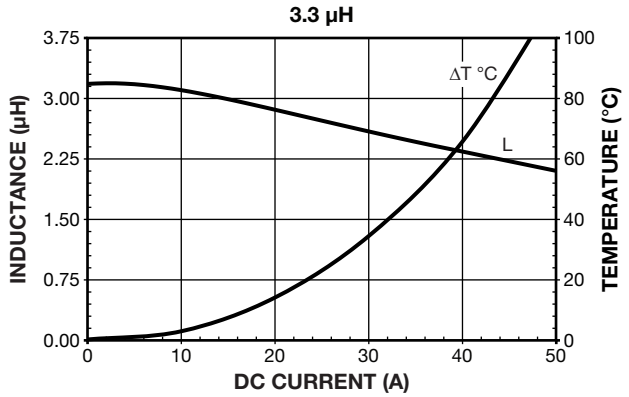
	P = PRODUCTION SCREENED	L = LOW EARTH ORBIT (LEO) SCREENED	E3 = EEE-INST-002 LEVEL 3 SCREENED	E2 = EEE-INST-002 LEVEL 2 SCREENED	B = MIL-STD-981 TABLE VI CLASS B SCREENED	S = MIL-STD-981 TABLE VI AND XII CLASS S SCREENED
PRODUCTION SCREENING (sample size = 100 %)						
Electrical characteristics (continuity, inductance (LS), turns ratio (TR), phase, leakage inductance, DWV, insulation resistance, DCR)	✓	✓	✓	✓	✓	✓
Mechanical inspection	✓	✓	✓	✓	✓	✓
Visual inspection	✓	✓	✓	✓	✓	✓
QUALITY CONFORMANCE SCREENING (group A) (sample size = 100 %)						
5 cycle thermal shock (-55 °C to +155 °C)	n/a	n/a	✓	n/a		
10 cycle thermal shock (-55 °C to +155 °C)	n/a	✓	n/a	✓	n/a	n/a
96 hour burn-in at 155 °C (unpowered)	n/a	✓	n/a	✓	✓	✓
25 cycle thermal shock (-55 °C to +155 °C)	n/a	n/a	n/a	n/a	✓	✓
Dielectric withstanding voltage (DWV)	n/a	✓	✓	✓	✓	✓
Dielectric withstanding voltage (DWV) at Altitude	n/a	n/a	✓	✓	n/a	n/a
Insulation resistance (IR)	n/a	✓	✓	✓	✓	✓
Electrical characteristics (continuity, LS, TR, phase, leakage inductance, DCR)	n/a	✓	✓	✓	✓	✓
Radiographic inspection	n/a	n/a	n/a	n/a	n/a	✓
Mechanical inspection (sampled per table V; MIL-STD-981)	n/a	✓	n/a	n/a	✓	✓
Visual inspection (100 %)	n/a	✓	✓	✓	✓	✓
QUALIFICATION INSPECTION (group B) (lot sampling)						
MIL-STD-981 table XII	n/a	n/a	n/a	n/a	n/a	✓
EEE-INST-002 Table 3	n/a	n/a	n/a	Optional	n/a	n/a

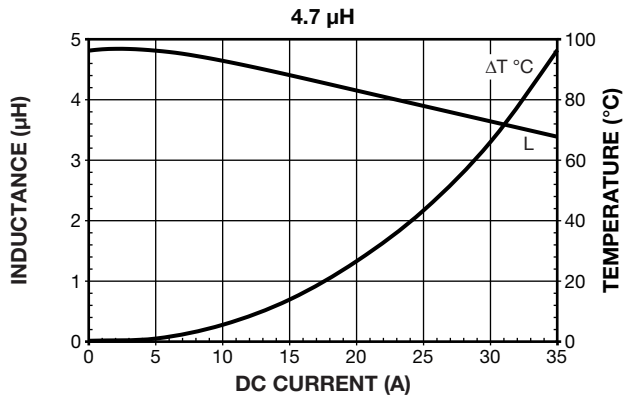
PERFORMANCE GRAPHS

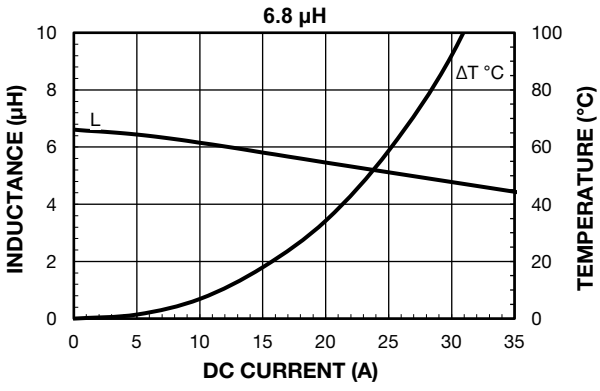












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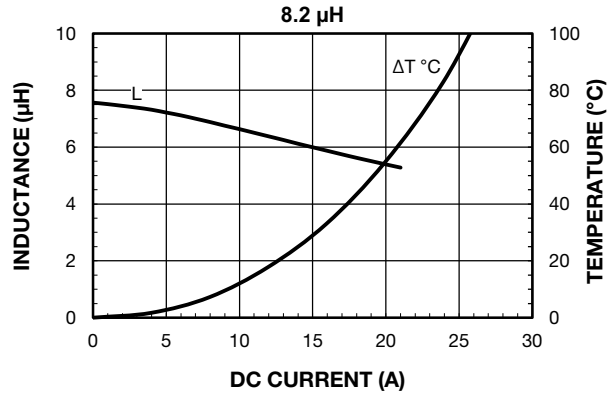
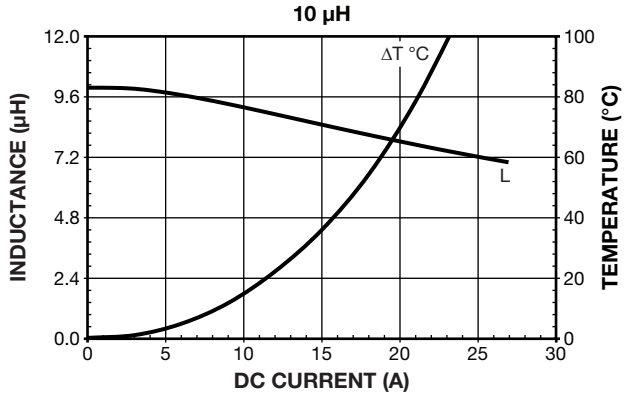
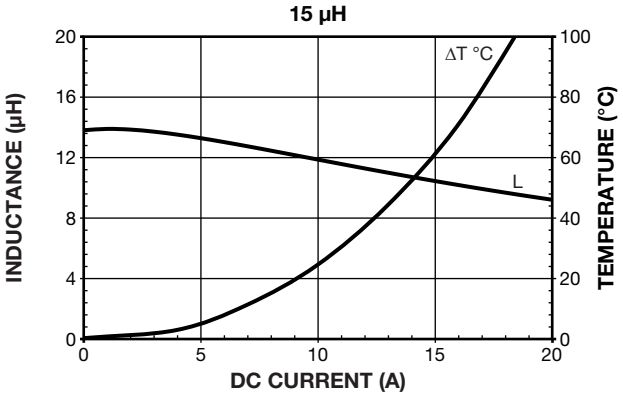
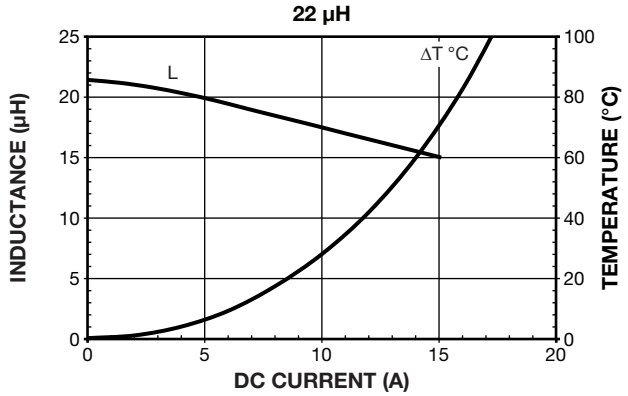
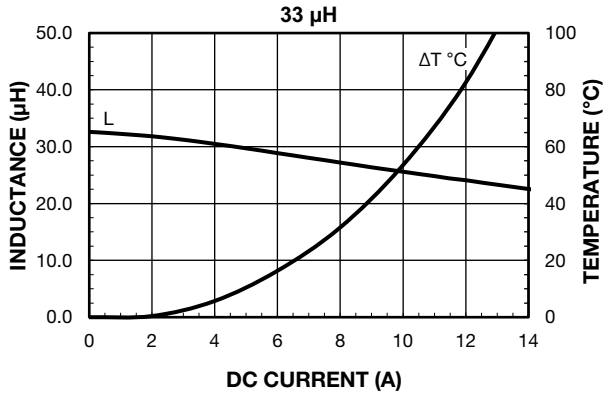
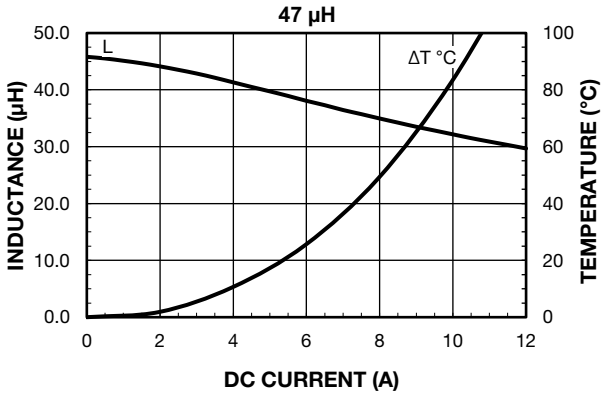






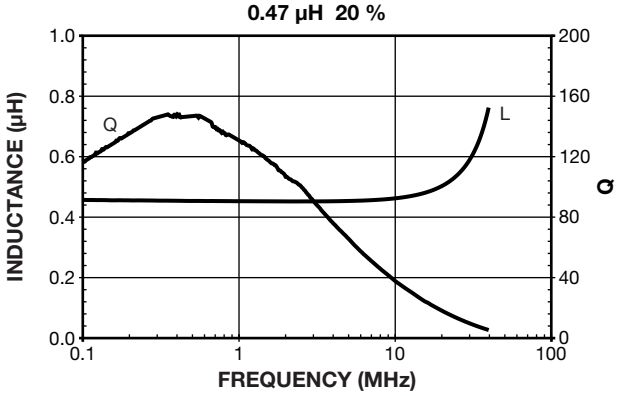




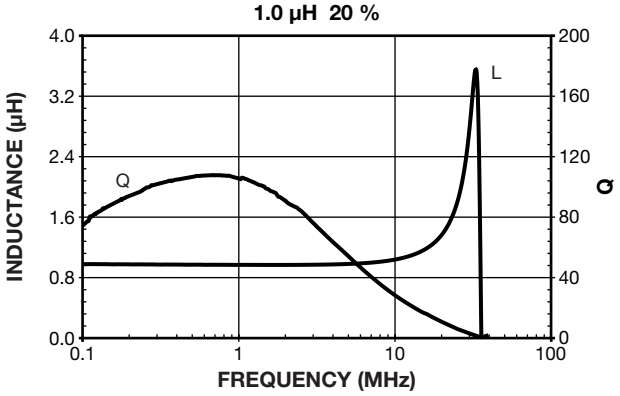


PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY

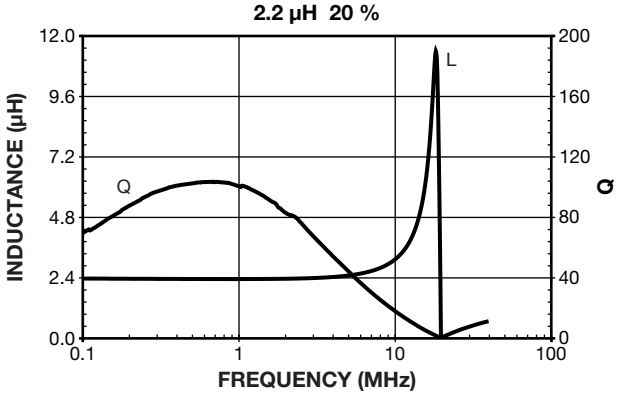
0.47 µH 20 %



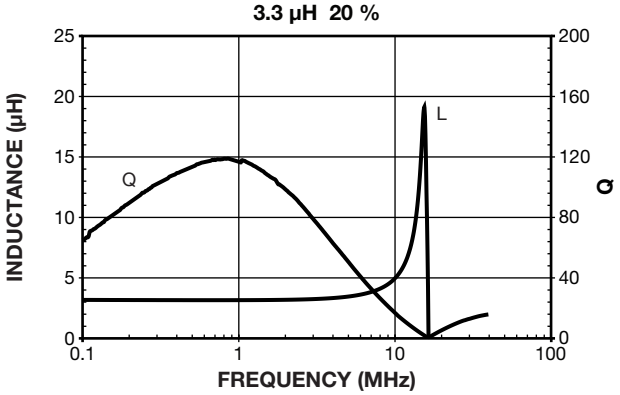
1.0 µH 20 %



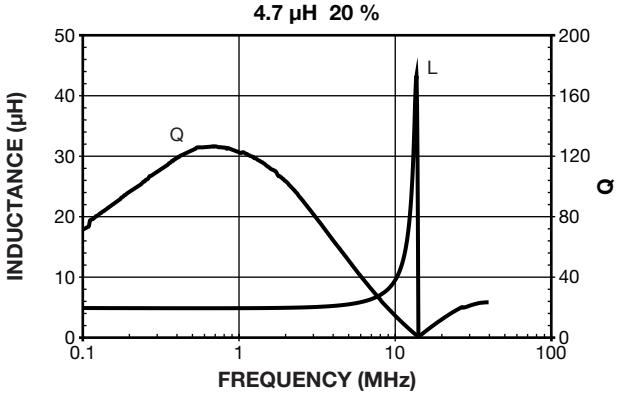
2.2 µH 20 %



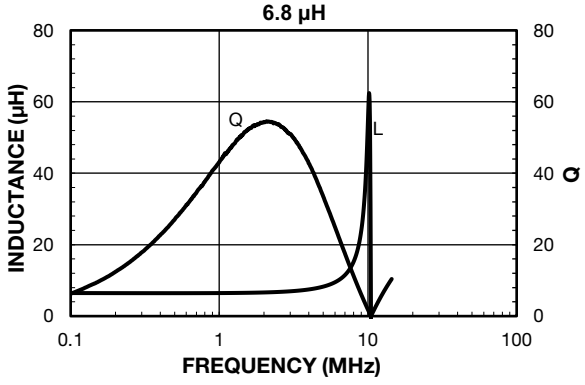
3.3 µH 20 %



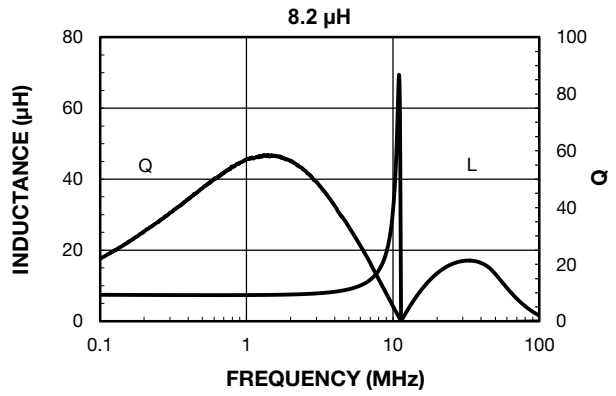
4.7 µH 20 %

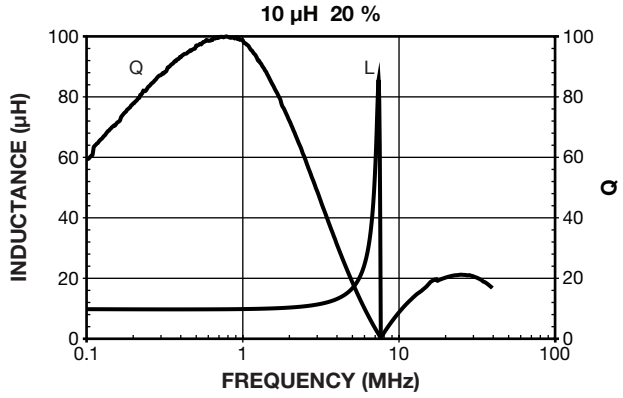


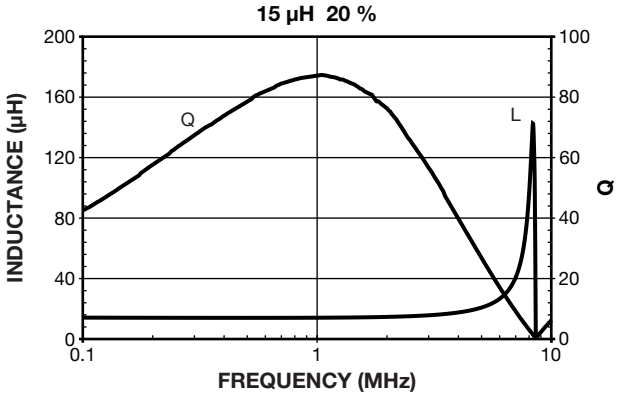
6.8 µH

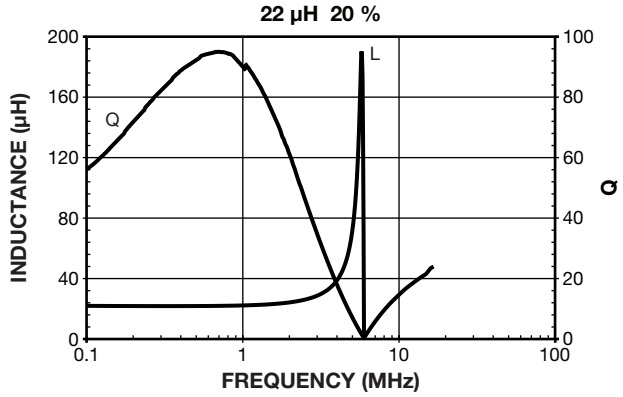


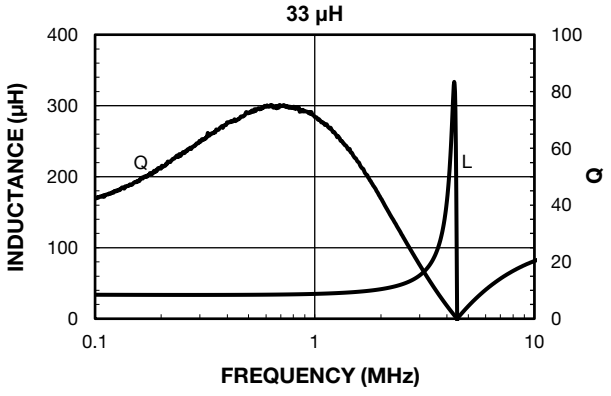
PERFORMANCE GRAPHS: INDUCTANCE AND Q VS. FREQUENCY

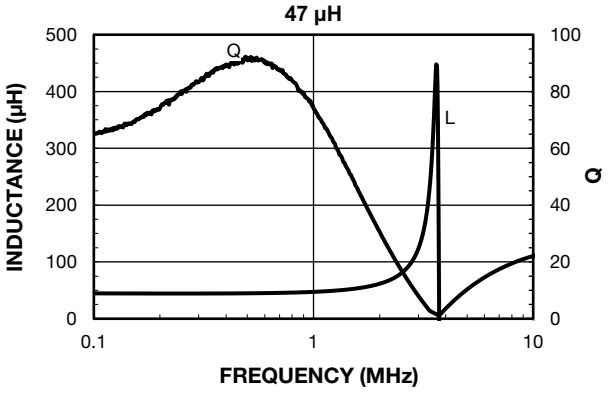












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