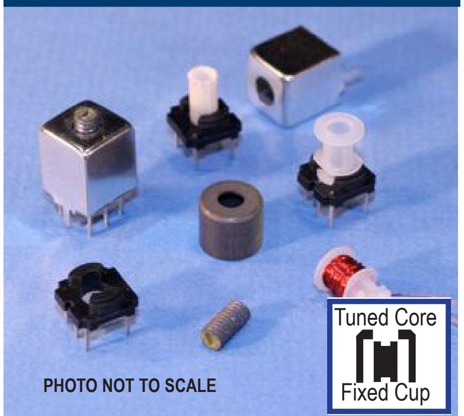
Phone (714) 970-0900

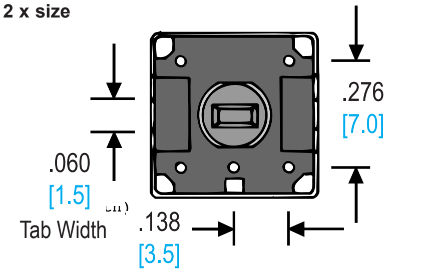
Fax (714) 970-0800

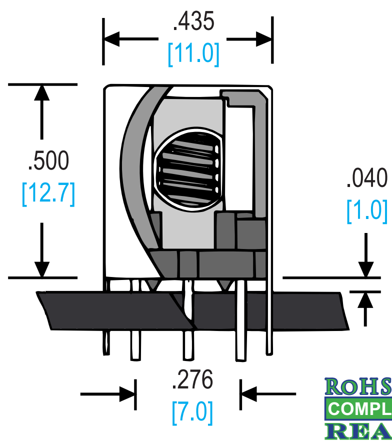
L43 SERIES

11mm



Inches/[mm]
±.010/[±.25]
2 x size





- Stable Inductance
- Very High and Stable Q
- Superior Temperature Stability Page 2
- Winding Capacity Table on Page 2
- Available as: Un-wound Hardware Only
- Quality Inspection Level: MIL-STD-1916 Level IV

ROHS COMPLIANT REACH

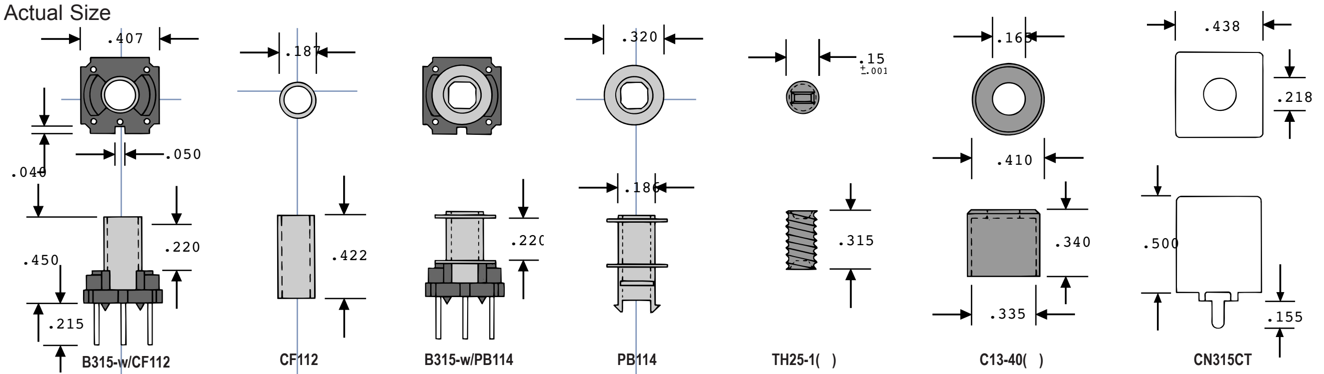
ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL(1)	FREQUENCY RANGE(2)	MATERIAL PERMEABILITY	ASSEMBLY AL nH/turns² (3)	MAX µh 100 turns	MIN µh (4) 100 turns	TEMPERATURE STABILITY(5)
L43-2-CT-F-5	RED	CARBONYL E	.25-10 MHz	10.0	9.8	98	48	95 ppm/°C
L43-6-CT-F-5	YELLOW	CARBONYL SF	2.0-50 MHz	8.5	8.5	85	44	35 ppm/°C
L43-10-CT-F-5	BLACK	CARBONYL W	10-100 MHz	6.0	7.2	72	43	150 ppm/°C

1) Iron powder materials are used in the tuning core and cup core.
2) This represents the frequency range for Q optimization in tuned or resonant circuits. The inductive properties of the material are effective over a considerably wider frequency range.
3) Nanohenries (10^{-9} Henries) per turn squared.
4) The minimum inductance is measured in microhenries (10^{-6} Henries) per 100 turns with the tuning core tuned out of the winding area but still a part of the assembly.
5) The temperature stability is of the magnetic material, measured in parts per million per degree Celsius (ppm/°C) on a toroidal core and winding. This is only an indication of the temperature stability for a complete wound assembly.

Assembly Sub-Components

Actual Size

Inches/[mm]



5 TERMINAL ASSEMBLY	BASE ONLY (6)	COIL FORM (7)	BASE ASSEMBLY	COLOR CODE	TUNNING CORE (8)	CUP CORE	SHIELD CAN
L43-2-CT-F-5	B315	CF112	B315-w/CF112	RED	TH25-102	C13-4002	CN315CT
L43-6-CT-F-5	B315	CF112	B315-w/CF112	YELLOW	TH25-106	C13-4006	CN315CT
L43-10-CT-F-5	B315	CF112	B315-w/CF112	BLACK	TH25-110	C13-4010	CN315CT
L43 WITH ALTERNATIVE SNAP IN NYLON BOBBIN							
L43-( )-CT-B-5	B315	PB114	B315-W/PB114	AS ABOVE	TH25-1( )	C13-40( )	CN315CT

6) The base is moulded from thermoset Diallyl Phthalate (DAP). The 5 terminals available are half hard copper, .025 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability.
7) The CF112 coil form is a glass reinforced polyester tube with 8-32 internal threads. The PB114 snap in bobbin is self threading nylon 6/6.
8) The tuning core is 8-32 shallow thread coated with Teflon.

SHIELDED COIL FORM WINDING TABLE

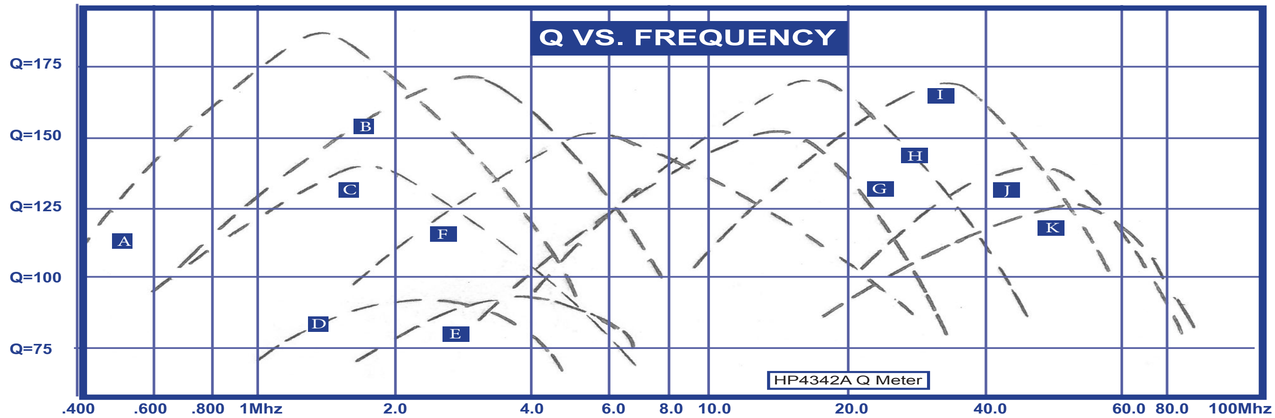
WIRE SIZE AWG	20		22		24		26		28		30		32		34		36		38	
WIRE SIZE LITZ	100/43		60/43		40/43		10/40		10/42		15/45		9/45		6/45		5/47		4/48	
Single Layer | Full Winding	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
L335							8	15	10	19	8	70	10	110	13	180	16	280	20	440
L43	4	8	6	12	8	16	10	20	13	52	17	102	21	126	27	216	34	404	42	588
L45	5	8	6	12	8	15	10	19	13	25	17	62	21	78	27	147	34	244	43	385
L57	5	10	6	24	8	32	10	60	13	104	17	170	21	252	27	432	34	680	43	1032

The winding table above shows the number of turns of Litz and solid magnetic wire of different gauges that will fit in each of the Shielded Coil Form's winding area. These turns estimates are for indication only. The actual maximum number of turns will depend on insulation thickness and the winding technique.

Phone (714) 970-0900
Fax (714) 970-0800

Maximize the Q of the Assembly

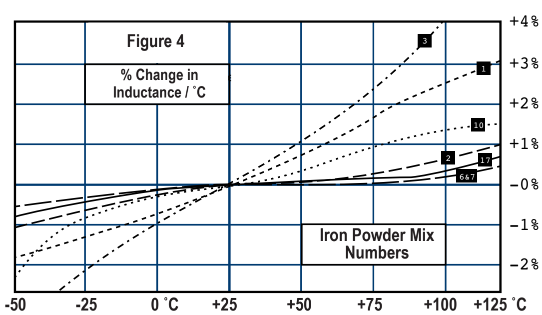
For more information about the Q of an assembly, visit www.lodestonepacific.com/scf-q-article

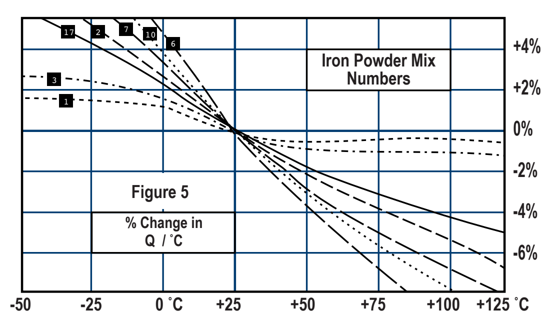


A L57-2-PCT-B-4: 32uH, 50 Turns of #15/44
B L57-2-PCT-B-4: 8.2uH, 25 Turns of #15/44
C L57-2-PCT-B-4: 30uH, 50 Turns of #7/41
D L335-2-CT-F-4: 4.10uH, 25 turns of #15/44
E L335-2-CT-F-4: 2.16uH,18 turns of #15/44
F L43-2-CT-F-5: 6.10uH, 25 turns of #15/44
G L45-6-PCT-B-4: 1.77uH, 14 turns of #28
H L57-6-PCT-B-4: 0.98uH, 10 Turns of #26
I L57-10-PCT-B-4: 0.26uH, 5 Turns of #24
J L45-10-PCT-B-4: 0.16uH, 4 turns of #28
K L335-10-CT-F-4: 0.16uH,5 turns of #26

Temperature Stability

An important characteristic of Micrometals Iron Powder core materials is the outstanding temperature stability. The temperature stability information for each iron powder mix is listed in parts-per-million-per degree Celsius (ppm/°C) as seen in this data sheet. As an example, the inductance of a 100ppm/°C material will change by 1% over a temperature change of 100 °C.





Figures 4 and 5 plot the temperature stability for iron powder materials as a percentage change in inductance and Q. Iron powder core materials have excellent temperature stability from -65°C (-150°F) up to 125°C (257°F). Ferrite materials are more sensitive to temperature and will exhibit changes in inductance and Q from 5 to 10 times greater than iron powder over the same temperature range.

Extended periods of elevated temperature will result in a permanent shift in inductance and Q when the assembly is returned to ambient. For temperature sensitive applications up to 100°C, this shift can be stabilized by "aging" the core material at 100°C for a minimum of 48 hours. Temperature stability is an estimate based on temperature cycling test using toroids of the same material.

In an iron powder core, inductance will increase gradually as the core materials temperature increases from 25°C to over 100°C. With continuous operation above 100°C, (212˚F) inductance and Q will begin to degrade with time. The extent of this shift is dependent on time, temperature, and frequency. Iron powder cores tolerate temperatures down to -65°C with no permanent effects.

Lodestone Pacific 35 Years

Lodestone Group
Reed-Rex • Lodestone Pacific • Digilant
Bantam Clean Power • Neo Crucible

E-Mail: sales@lodestonepacific.com • www.lodestonepacific.com