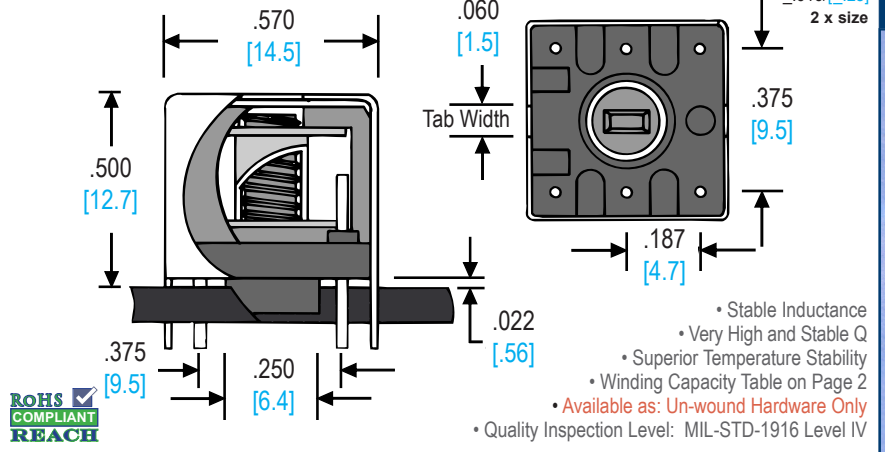
LODESTONE PACIFIC
Phone (714) 970-0900
Fax (714) 970-0800

SHIELDED COIL FORMS

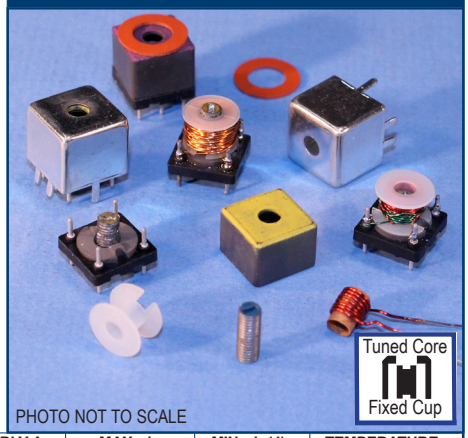
14.5mm

L57 SERIES



RoHS COMPLIANT REACH

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

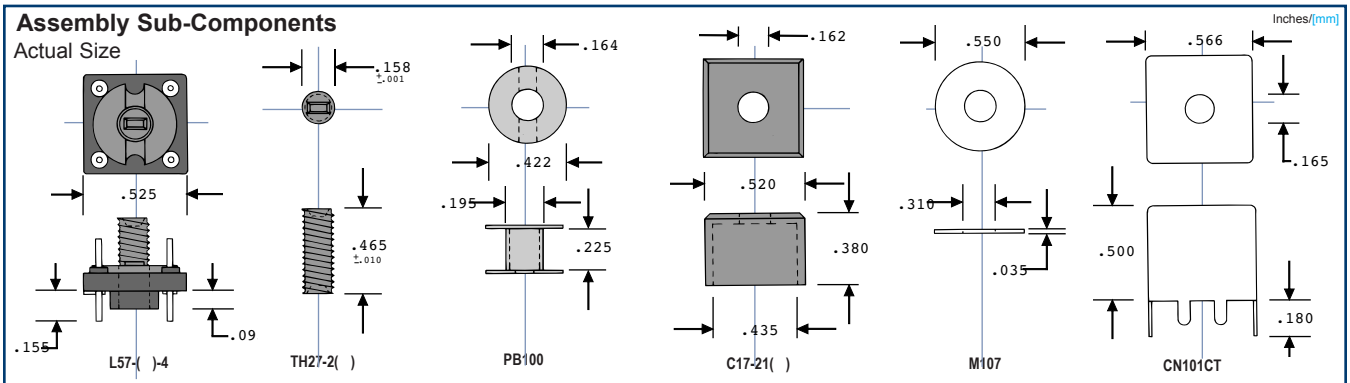


ASSEMBLY PART NO.	COLOR CODE	MAGNETIC MATERIAL (1)	FREQUENCY RANGE (2)	MATERIAL PERMEABILITY	ASSEMBLY A_L nH/turns² (3)	MAX µh 100 turns	MIN µh (4) 100 turns	TEMPERATURE STABILITY (5)
L57-2-PCT-B-4	RED	CARBONYL E	.25-10 Mhz	10.0	13.0	130	54	95 ppm/°C
L57-6-PCT-B-4	YELLOW	CARBONYL SF	10-50 Mhz	8.5	12.0	120	51	35 ppm/°C
L57-10-PCT-B-4	BLACK	CARBONYL W	10-100 Mhz	6.0	10.5	105	50	150 ppm/°C

1) The iron powder or ferrite materials are used in a portion of the base, 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.

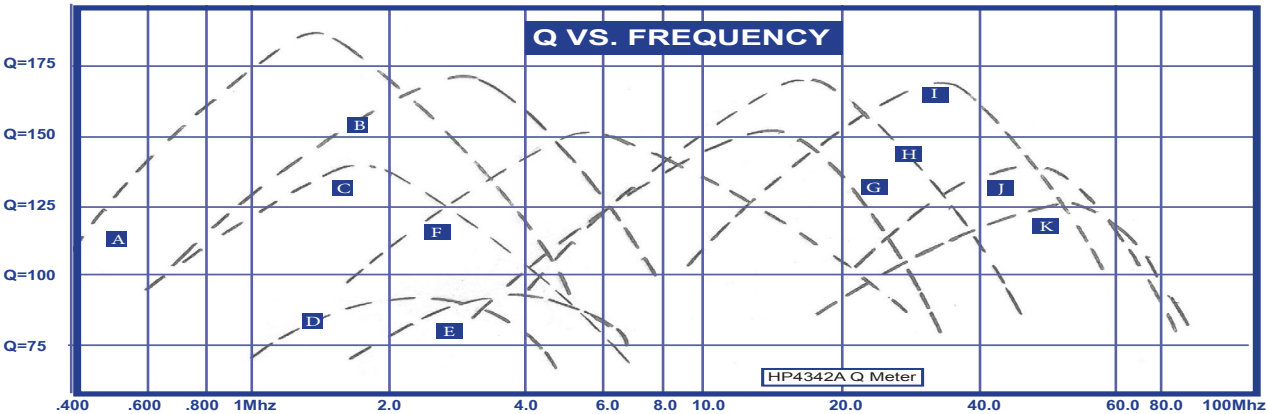
Assembly Sub-Components

Actual Size



4 TERMINAL ASSEMBLY	BASE ONLY (6)	TUNING CORE (7)	BASE ASSEMBLY	COLOR CODE	WINDING FORM (8)	CUP CORE	RUBBER PAD (9)	SHIELD CAN
L57-2-PCT-B-4	B202-2	TH27-202	L57-2-4	RED	PB100	C17-2102	M107	CN101CT
L57-6-PCT-B-4	B202-6	TH27-206	L57-6-4	YELLOW	PB100	C17-2106	M107	CN101CT
L57-10-PCT-B-4	B202-10	TH27-210	L57-10-4	BLACK	PB100	C17-2110	M107	CN101CT

6) The base is moulded from thermoset Diallyl Phthalate (DAP). The 4 or 6 terminals available are half hard brass, .032 inches in diameter, tin plated to MIL-STD 202 Method 208 for solderability.
7) The tuning core is 8-40 shallow thread coated with Teflon.
8) The winding bobbin PB100 is moulded nylon 6/6.
9) The anti-vibration silicon rubber pad M107.



- 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

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

ISSUE "L"

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

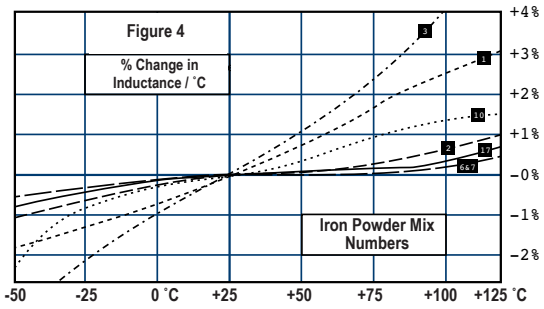
SHIELDED COIL FORM WINDING TABLE

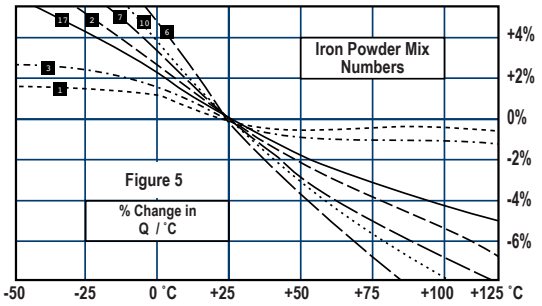
WIRE SIZE AWG	20		22		24		26		28		30		32		34		36		38	
WIRE SIZE LITZ	100/43		60/43		40/43		10/40		10/42		15/45		9/45		6/45		5/47		4/48	
Single Layer Full Winding	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F	S	F
L335							8	15	10	19	8	70	10	110	13	180	16	280	20	440
L43	4	8	6	12	8	16	10	20	13	52	17	102	21	126	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.

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 the 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

ISSUE "L"