Un-gapped Pot Core Inductor

The Un-gapped Pot Core Inductors manufactured by Engineered Components Company are designed for RF/low power applications utilizing low-loss ferrite core material. Un-gapped pot cores can provide significantly higher inductance values at the expense of lower SRF and operating frequencies. The pot core inductor design shields and isolates the winding from stray magnetic fields and effects from the surrounding circuit elements.

The standard inductance value tolerance is +/-20% when measured at the frequencies listed (see Table 1). Inductance values and Q values are measured on an HP 4284A LCR meter. Since inductance values vary with AC/DC current values, each end application should be evaluated to ensure proper readings. The tabulated current ratings are those calculated to cause a 25 deg. C rise in case temperature. These pot core inductors are designed to meet the applicable portions of MIL-C-15305, Grade 1, Class B. Temperature coefficient of inductance is less than 400ppm/deg. C over the operating temperature range of -30 to +70 deg. C. Inductors are capable of withstanding 500Vdc @ 50 uA applied between the coil and the case.

The inductor and the four copper leads (tin-lead plated) are mounted on a Liquid Crystal Polymer platform, off-white in color, and secured in epoxy resin by utilizing a black Diallyl Phthalate case. Finished inductor sizes are shown in Table 2. Any exposed pot core is coated with a conformal coating. Marking, applied by Laser Label, designates one coil termination lead with an indicator dot (see Figure 1). The opposite lead is also a coil temination lead, while the leads at 90 deg. locations are no-connection mounting leads.

Product Selection Table

PART NUMBER	L(mH)	SIZE	DCR (TYP.)	Q (NOM.)	SRF TYP. (KHz.)	RATED I_{DC} (mA)
UPCI-27	27	1	7.0	60	280	270
UPCI-33	33	1	8.0	65	253	250
UPCI-39	39	1	9.0	70	233	240
UPCI-47	47	1	10	75	212	220
UPCI-56	56	2	9.0	65	160	280
UPCI-68	68	2	10	65	155	260
UPCI-82	82	2	11	66	132	250
UPCI-100	100	2	12	67	120	240
UPCI-120	120	2	13.5	68	110	230
UPCI-150	150	2	15	69	100	220
UPCI-180	180	2	16	70	92	210
UPCI-220	220	3	12	45	65	270
UPCI-270	270	3	13.5	48	58	250
UPCI-330	330	3	15	52	52	240
UPCI-390	390	3	16	56	48	230
UPCI-470	470	3	18	60	44	220
UPCI-560	560	3	19	65	40	210
UPCI-680	680	4	18	80	30	230
UPCI-820	820	4	21	90	27	220
UPCI-1000	1000	4	23	100	25	210
UPCI-1200	1200	4	26	110	22	200
UPCI-1500	1500	4	30	120	20	180
UPCI-1800	1800	5	30	140	18	260
UPCI-2200	2200	5	34	160	16	240
UPCI-2700	2700	5	38	180	14	230
UPCI-3300	3300	5	42	200	13	220
UPCI-3900	3900	6	31	70	12	310
UPCI-4700	4700	6	34	75	11	300
UPCI-5600	5600	6	37	80	10	280
UPCI-6800	6800	7	42	90	10	310
UPCI-8200	8200	7	47	100	9	290
UPCI-10000	10000	7	53	110	8	270
UPCI-12000	12000	7	60	120	7	260

Special modules can often be manufactured to provide for customer specific applications.

Table 1

Test Frequency Table

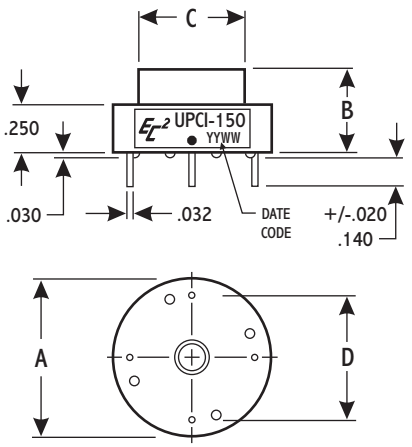
L(Mh) RANGE	L & Q TEST FREQUENCY
27 - 200	2.5KHz
200 - 3600	.79KHz
3600 - 12000	250Hz

Table 2

Size Table

SIZE	A	B	C	D
1	.700	.360	.430	.500
2	.820	.440	.550	.650
3	1.025	.520	.720	.800
4	1.145	.640	.850	.950
5	1.340	.740	1.010	1.100
6	1.525	.850	1.200	1.300
7	1.750	.980	1.400	1.550

Figure 1



engineered components company

A Division of Cornucopia Tool & Plastics, Inc. PO Box 1915, 448 Sherwood Rd., Paso Robles CA 93447

Phone: 805-369-0034
Fax: 805-369-0033
Web: www.ec2.com