



EP Cores

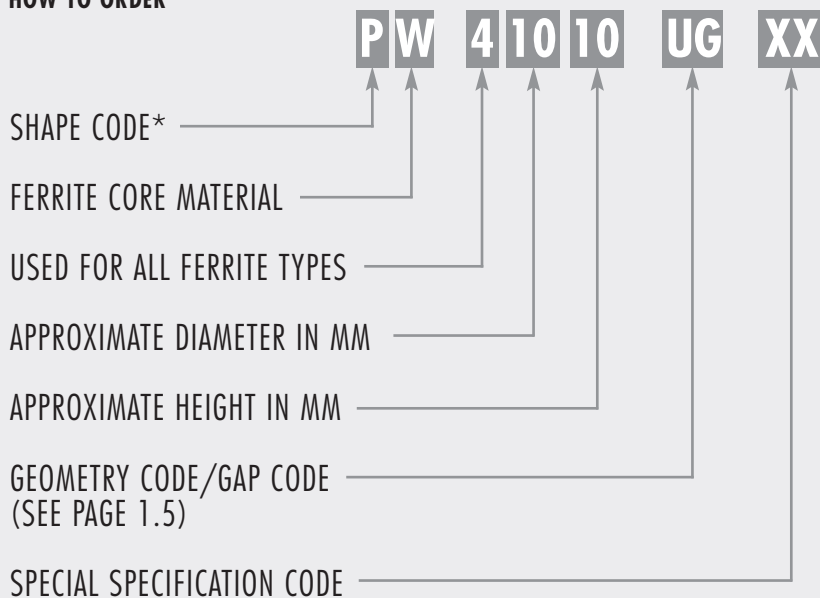
Section 9

EP CORES

EP cores are round center-post cubical shapes which enclose the coil completely except for the printed circuit board terminals. This particular shape minimizes the effect of air gaps formed at mating surfaces in the magnetic path and provides a larger volume ratio to total space used. EP cores provide excellent shielding.

Typical applications for EP cores include differential and telecom inductors and power transformers.

HOW TO ORDER



*SHAPE CODES: P – EP core



EP Core Data (ungapped)

Any practical gap is available. See page 1.8-1.11

MECHANICAL DIMENSIONS							
PART	CORE TYPE	FIG.		A MAX	B	2B	C
P_40707UG	EP7	1	mm	9.20 ± .200	3.700 ± .050	7.400 ± .100	6.35 ± .150
			in	.362 ± .008	.146 ± .002	.292 ± .004	.250 ± .006
P_41010UG	EP10	2	mm	11.500 ± .300	5.150 ± .100	10.300 ± .008	7.60 ± .200
			in	.453 ± .012	.202 ± .004	.404 ± .008	.301 ± .008
P_41313UG	EP13	3	mm	12.500 ± .280	6.450 ± .076	12.900 ± .150	8.800 ± .200
			in	4.92 ± .011	.253 ± .003	.506 ± .006	.346 ± .008
P_41717UG	EP17	1	mm	17.980 ± .510	8.40 ± .100	16.80 ± .200	11.00 ± .250
			in	.708 ± .020	.331 ± .004	.662 ± .008	.433 ± .010
P_42120UG	EP20	2	mm	24 ± .5	10.7 ± .1	21.4 ± .2	15 ± .35

To order, add material code to part number.

A_I (mH/1,000T)

PART	CORE TYPE	FIG.		POWER MATERIALS			HIGH PERMEABILITY MATERIALS	
				R	P	F*	J	W
P_40707UG	EP7	1	Min	810	880	1,240	1,930	3,600
P_41010UG	EP10	2	Min	780	850	1,200	1,850	3,360
P_41313UG	EP13	3	Min	1,150	1,250	2,000	2,800	5,000
P_41717UG	EP17	1	Min	1,790	1,950	3,100	4,400	8,000
P_42120UG	EP20	2	Min	3,170	3,450	5,000	7,200	13,500

* F material nominal ±25%

FIGURE 1

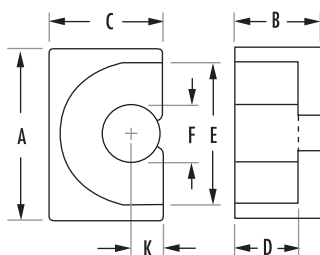


FIGURE 2

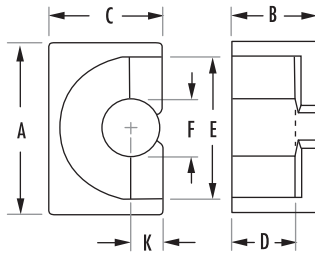
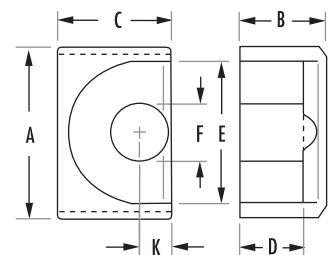


FIGURE 3



EP Core Data (ungapped)

MECHANICAL DIMENSIONS				
D MIN	2D MIN	E MIN	F MAX	K
2.500	5.000	7.200	3.400	1.70 ± .100
0.098	0.196	0.283	0.134	.067 ± .004
3.600	7.200	9.2	3.450	1.850 ± .100
0.142	0.284	0.362	0.136	.073 ± .004
4.500	8.990	9.72	4.520	2.36 ± .130
0.177	0.354	0.383	0.178	.093 ± .005
5.55	11.10	11.6	5.88	3.30 ± .200
0.22	0.440	0.457	0.230	.128 ± .007
7.2 ± .15	14.4 ± .3	16.5 ± .4	8.8 ± .25	4.5 ± .2

MAGNETIC DATA						SURFACE MOUNT BOBBIN	PRINTED CIRCUIT BOBBIN	MOUNTING CLAMP
l_e (mm)	A_e (mm ²)	A MIN (mm ²)	V_e (mm ³)	CORE WEIGHT (grams per set)	$W_a A_c$ (cm ⁴)		AVAILABLE HARDWARE	
15.70	10.3	7.8	162	1.4	0.0039	✓	✓	✓
19.2	11.3	78.0	217	2.8	0.0100	✓	✓	✓
24.2	19.5	14.0	472	5.1	0.0300	✓	✓	✓
29.50	33.7	25.5	999	11.6	0.0810		✓	✓
41.1	78.7	60.8	3,230	27.6	0.2480		✓	✓

Printed Circuit Bobbins

MECHANICAL DIMENSIONS														
PART	CORE SIZE	FIG.		A REF	B REF	C MAX	D MIN	E NOM	F NOM	G NOM	H REF	J MAX	K REF	L REF
PCB07076B	40707	1	mm	9.144	7.391	7.112	3.429	3.505	4.496	3.734	4.572	4.724	2.515	5.055
			in	0.360	0.291	0.280	0.135	0.138	0.175	0.147	0.180	0.186	0.099	0.199
PCB10108A	41010	2	mm	10.998	10.998	8.992	3.556	5.588	4.902	3.404	5.385	7.112	2.489	7.493
			in	0.433	0.433	0.354	0.140	0.220	0.193	0.134	0.212	0.280	0.098	0.295
PCB1313BA	41313	3	mm	13.157	13.411	9.703	4.572	7.772	5.791	5.00	6.147	8.941	2.489	10.084
			in	0.518	0.528	0.382	0.180	0.306	0.228	0.210	0.242	0.352	0.098	0.397
PCB17178A	41717	4	mm	18.999	18.999	11.455	5.994	9.474	7.112	4.699	7.493	11.100	-	-
			in	0.748	0.748	0.451	0.236	0.373	0.280	0.185	0.295	0.437	-	-
PCB2120TA	42120	5	mm	24.689	21.514	16.078	9.093	12.344	10.211	5.004	8.306	13.894	-	-
			in	0.972	0.847	0.633	0.358	0.486	0.402	0.197	0.327	0.547	-	-

FIGURE 1

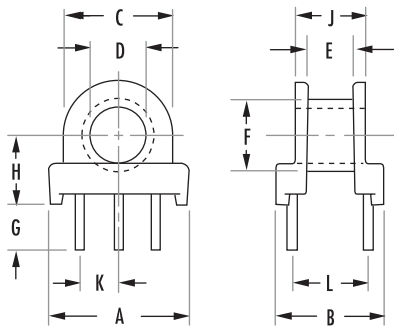


FIGURE 2

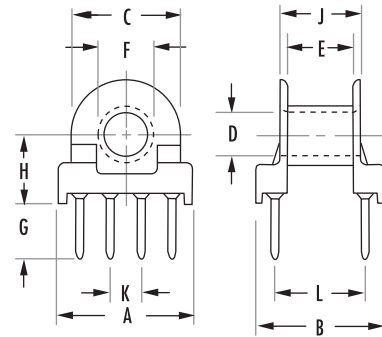


FIGURE 3

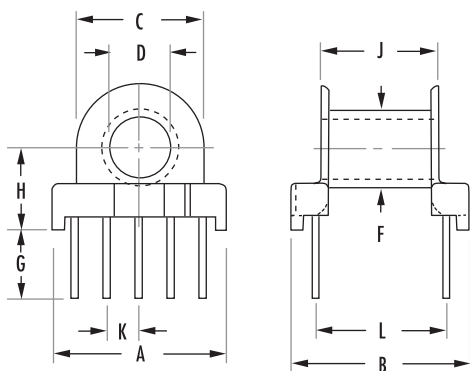
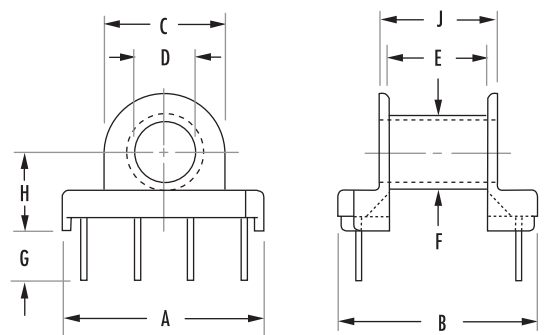


FIGURE 4



Printed Circuit Bobbins

NOMINAL WINDING AREA PER SECTION		AVERAGE LENGTH OF TURN FT	BOBBIN MATERIAL	PIN MATERIAL	PIN DIAMETER	BOARD CLEARANCE (in.)*			
in ²	cm ²					Length	Width	Height	
0.007	0.044	0.059	Phenolic	Tin coated Phosphor Bronze	0.016" square	with clamp	0.4850	0.3850	0.4100
						no clamp	0.375	0.300	0.390
0.018	0.114	0.070	Phenolic	Tin coated Phosphor Bronze	.026"	with clamp	0.5500	0.5100	0.4700
						no clamp	0.470	0.440	0.450
0.021	0.138	0.078	Phenolic	Tin coated Phosphor Bronze	0.020" square	with clamp	0.6250	0.6250	0.5450
						no clamp	0.535	0.545	0.515
0.029	0.188	0.094	Phenolic	Tin coated Phosphor Bronze	0.026"	with clamp	0.8400	0.8000	0.6400
						no clamp	0.760	0.760	0.625
0.051	0.332	0.134	Thermoset Phenolic	Tin coated Phosphor Bronze	0.026"	with clamp	1.0800	1.0000	0.8150
						no clamp	.995	.875	.755

*reference figure 6 for board clearance

FIGURE 5

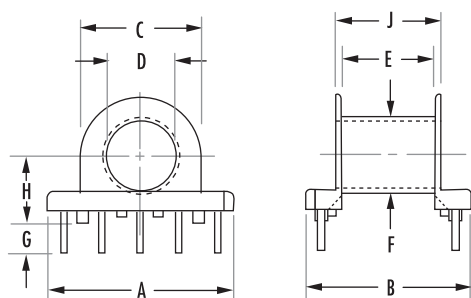
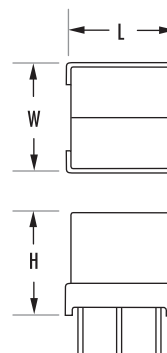
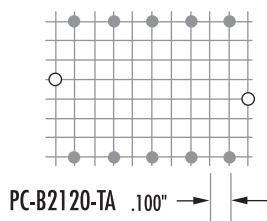
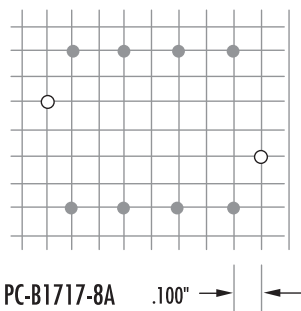


FIGURE 6



PIN LAYOUTS



- Holes for bobbin pins
- Holes for clip pins

Surface Mount Bobbins

MECHANICAL DIMENSIONS													
PART	CORE SIZE	FIG.		A REF	B REF	C MAX	D MIN	E NOM	F NOM	H REF	J MAX	K REF	L REF
SMB07076A	40707	1	mm	9.195	8.585	7.112	3.404	3.607	4.496	3.505	4.902	10.592	12.700
			in	0.362	0.338	0.280	0.134	0.142	0.177	0.138	0.193	0.417	0.500
SMB10108A	41010	2	mm	11.506	10.490	9.093	3.505	5.791	4.801	4.496	7.112	12.497	14.605
			in	0.453	0.413	0.358	0.138	0.228	0.189	0.177	0.280	0.492	0.575
SMB1313TA	41313	3	mm	12.802	13.005	9.601	4.496	7.595	5.791	5.258	8.788	15.392	16.993
			in	0.504	0.512	0.378	0.177	0.299	0.228	0.207	0.346	0.606	0.669

FIGURE 1

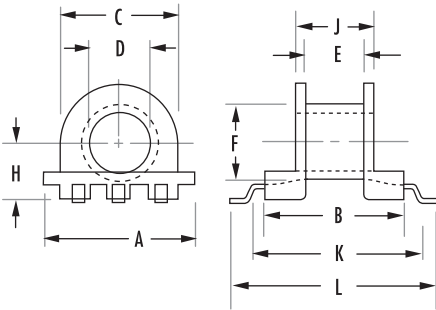


FIGURE 2

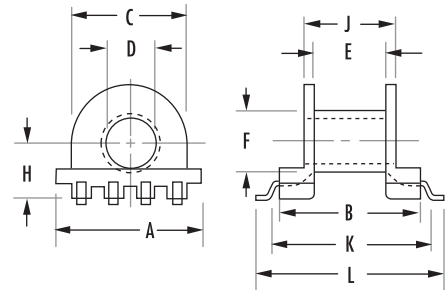
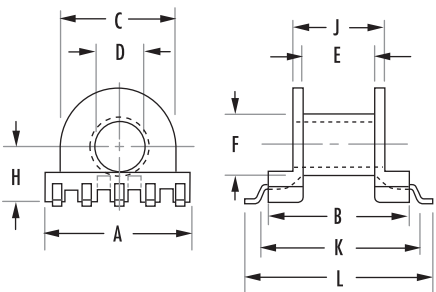


FIGURE 3



Surface Mount Bobbins

NOMINAL WINDING AREA PER SECTION		AVERAGE LENGTH OF TURN FT	BOBBIN MATERIAL	PIN THICKNESS
in ²	cm ²			
0.007	0.044	0.059	L.C.P.	0.012"
0.019	0.120	0.070	L.C.P.	0.012"
0.021	0.138	0.078	L.C.P.	0.012"

Mounting Clamps

PART	CORE SIZE	FIG.		MECHANICAL DIMENSIONS (NOMINAL)								MATERIAL	MATERIAL THICKNESS
				A	B	C	D	E	F	G	H		
OAC070716 YOKE	40707	2	mm	9.601	12.167	4.978	3.988	2.083	5.893	0.406	-	Nickel Silver	0.016"
			in	0.378	0.4790	0.196	0.157	0.082	0.232	0.016	-		
OBC070712 CLAMP	40707	1	mm	10.389	7.188	4.978	-	-	-	-	-	Nickel Silver	0.012"
			in	0.409	0.2830	0.196	-	-	-	-	-		
OOC10102A YOKE/ CLAMP	41010	3	mm	16.510	12.141	6.401	4.953	2.591	9.525	2.489	1.016	Phosphor Bronze	0.015"
			in	0.650	0.4780	0.252	0.195	0.102	0.375	0.098	0.040		
OAC131316 YOKE	41313	4	mm	16.510	13.0048	7.518	3.988	2.591	11.684	2.997	1.219	Nickel Silver	0.016"
			in	0.650	0.5120	0.296	0.157	0.102	0.460	0.118	0.048		
OBC131314 CLAMP	41313	1	mm	14.072	12.649	7.518	-	-	-	-	-	Nickel Silver	0.014"
			in	0.554	0.4980	0.296	-	-	-	-	-		
OOC17172A YOKE/ CLAMP	41717	5	mm	19.990	18.593	8.992	5.004	5.004	15.596	5.004	0.991	Phosphor Bronze	0.016"
			in	0.787	0.7320	0.354	0.197	0.197	0.614	0.197	0.039		
OAC212016 YOKE	42120	6	mm	22.276	24.613	11.989	3.505	4.572	17.602	2.540	0.991	Nickel Silver	0.016"
			in	0.877	0.9690	0.472	0.138	0.180	0.693	0.100	0.039		
OBC212016 CLAMP	42120	1	mm	24.994	21.488	11.989	-	-	-	-	-	Nickel Silver	0.016"
			in	0.984	0.8460	0.472	-	-	-	-	-		

Yoke and Clamp are required for assembly.

Part numbers OOC10102A & OOC17172A are for yoke/clamp set.

Mounting Clamps

FIGURE 1

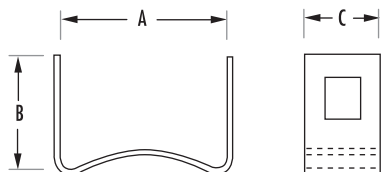


FIGURE 2

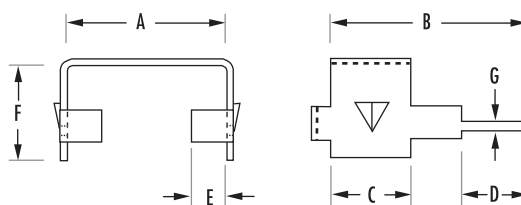


FIGURE 3

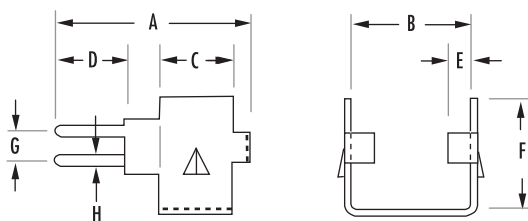


FIGURE 4

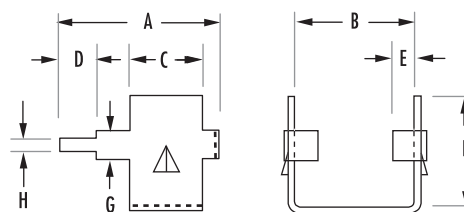


FIGURE 5

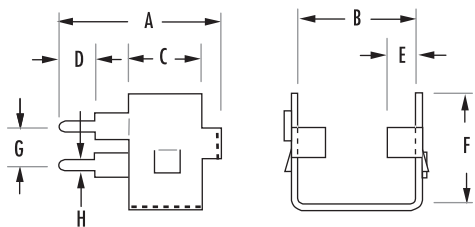


FIGURE 6

