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AREA PRODUCT OF FERRITE CORE

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Cores without airgap	Mean length per turn le (mm)	Mean magnetic length lm (mm)	Core cross section area Ac*100 (mm ²)	Window area Aw*100 (mm ²)	Area product Ap*104 (mm ⁴)	μ_e	A_L (nH/tum ²)
P18/11	35.6	26	0.43	0.266	0.114	1480	3122
P26/16	52	37.5	0.94	0.53	0.498	1670	5247
P30/19	60	45.2	1.36	0.747	1.016	1760	6703
P36/22	73	53.2	2.01	1.01	2.010	2030	9500
P42/29	86	68.6	2.64	1.81	4.778	2120	10250
P66/56	130	123	7.15	5.18	37.03		
E20/10/5	38	42.8	0.31	0.478	0.149	1770	1624
E25/9/6	51.2	48.8	0.40	0.78	0.312	1840	1895
E25/13/7	52	57.5	0.55	0.87	0.478	1900	2285
E30/15/7	56	66.9	0.597	1.19	0.71		
E36/18/11	70.6	78	1.31	1.41	1.847	2000	4200
E42/21/9	77.6	108.5	1.07	2.56	2.739	2100	2613
E42/21/15	93	97.2	1.82	2.56	4.659	2030	4778
E42/21/20	99	98	2.35	2.56	6.016	2058	6231
E65/32/13	150	146.3	2.66	5.37	14.284	2115	4833

L.UMANAND and S.R. BHAT, "Design of Magnetic Components for Switch Mode Power Converters", Wiley Eastern Limited, 1992.

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STANDARD WIRE GAUGE DATA

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STANDARD WIRE GAUGE DATA

SWG	Diameter with Enamel (mm)	Area of bare Conductor (mm ²)	R/Km@20°C (Ohm)	Weight (Kg/Km)
45	0.086	0.003973	4340	0.0369
44	0.097	0.005189	3323	0.0481
43	0.109	0.006567	2626	0.0610
42	0.119	0.008107	2127	0.0750
41	0.132	0.009810	1758	0.0908
40	0.142	0.011675	1477	0.1079
39	0.152	0.013700	1258	0.1262
38	0.175	0.018240	945.2	0.1679
37	0.198	0.023430	735.9	0.2202
36	0.218	0.029270	589.1	0.2686
35	0.241	0.035750	482.2	0.3281
34	0.264	0.04289	402.0	0.3932
33	0.287	0.05067	340.3	0.4650
32	0.307	0.05910	291.7	0.5408
31	0.330	0.06818	252.9	0.6245
30	0.351	0.07791	221.3	0.7121
29	0.384	0.09372	184.0	0.8559
28	0.417	0.11100	155.3	1.0140
27	0.462	0.13630	126.5	1.2450
26	0.505	0.16420	105.0	1.4990
25	0.561	0.20270	85.1	1.8510
24	0.612	0.24520	70.3	2.2330
23	0.665	0.29190	59.1	2.6550
22	0.770	0.39730	43.4	3.6070
21	0.874	0.51890	33.2	4.7020

20	0.978	0.65670	26.3	5.9390
19	1.082	0.81070	21.3	7.3240
SWG	Diameter with Enamel (mm)	Area of bare Conductor (mm ²)	R/Km@20°C (Ohm)	Weight (Kg/Km)
18	1.293	1.16700	14.8	10.5370
17	1.501	1.58900	10.8	14.3130
16	1.709	2.07500	8.3	18.6780
15	1.920	2.62700	6.6	23.6400
14	2.129	3.24300	5.3	29.1500
13	2.441	4.28900	4.0	38.5600
12	2.756	5.48000	3.1	49.2200
11	3.068	6.81800	2.5	61.0000
10	3.383	8.30200	2.1	74.0000
9	3.800	10.5100	1.6	94.0000
8	4.219	12.9700	1.3	116.0000

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SMPS COMPONENTS

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SMPS COMPONENTS

1. Switching Device : IRFP450
2. Opto-coupler: Sharps 6N137
3. Driver: IR2110
4. Level shifter: Motorola MC14504
5. Digital Signal Controller: Phillips ARM7 LPC2138
6. Voltage Isolator: AD202J
7. Transformer Ferrite Core: EE36/18/11
8. Filter Inductor Core: P42/26

