SEI

COMPARATIVE GUIDE

MULLARD/S.E.I.

FERRITE CORES AND ACCESSORIES

ISSUE 1 2

SALFORD ELECTRICAL INSTRUMENTS LIMITED

While every effort is made to ensure that S.E.I. equivalents shown are direct replacements, it may be advisable to test a sample obtainable free of charge from the manufacturer, before ordering cores to be used in unorthodox circumstances.

Please note also, that owing to our widening range of ferrite cores and accessories, equivalents to cores omitted from this list may now be in production.

Further details, technical assistance and components are available from :–

Salford Electrical Instruments Ltd.
Times Mill
Heywood OL10 4NE
Lancs.

Telephone : 0706 67501
Telex : 635106

NOTES:

1. Although the electrical, magnetic and mechanical properties of alternatives shown are very similar, it is not advisable to mix components from different suppliers in one assembly e.g. Pot cores and adjusters.
2. Cores marked with an asterisk are under consideration or are being developed.

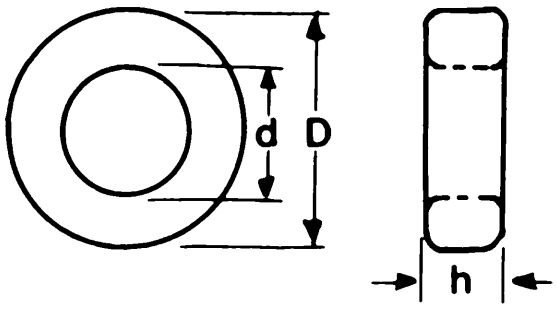
COMPARABLE MATERIALS

Manganese Zinc			Nickel Zinc		
A1	—	A4	B1	—	see S1
		A5	B2	—	K4
		A5T	B4	—	K7
		A8	B5	—	K8
		A9	B10	—	K10
		A10			
		A13			
		A14			
		A16			
		3E4			
		3E3			

	A4	P (nearest)
	A5	P
	A5T	Q5
	A8	T3
	A9	L1
	A10	S1
	A13	Q3
	A14	Q7
	A16	L2
	3E4	T4
	3E3	T6

3. Toroid Cores: MX = unpainted MM = painted
   MY = nylon coated MP = parylene
4. RM Transformer Cores: MM = ½ core MX = core pair
   MZ = core pair, no centre hole
5. Other S.E.I. Magnetic Materials:
   a. Genalex 'H' high saturation nickel iron alloy powder cores suitable for SMPS chokes and suppression filter applications.
   b. Carbonyl Iron cores suitable for V.H.F. coils and wide-band transformers
   c. Electrolytic iron cores for low frequency and electromagnet applications.

DIMENSIONS AND MAGNETIC PARAMETERS



Listed in order of size

Core size	D (max) mm		d (min) mm	h (max) mm	Weight (Approx) g	Magnetic parameters (nom)			
	Mn-Zn grades	Ni-Zn grades				$\frac{l_e}{A_e}$ mm^{-1}	l_e mm	A_e mm^2	V_e mm^3
682[3]	2.21	2.35	1.20	0.77	0.006	21.1	5.00	0.238	1.19
542	3.32	3.41	1.43	1.56	0.041	5.99	6.69	1.12	7.48
610	3.65	3.75	1.81	1.77	0.052	6.43	7.98	1.24	9.90
611	4.68	4.88	2.39	2.18	0.106	5.35	10.4	1.94	20.2
620	6.00	6.18	2.96	2.71	0.238	3.80	13.0	3.43	44.6
626	6.00	6.18	2.96	3.75	0.333	2.72	13.0	4.80	62.5
428	6.52	6.71	3.08	4.17	0.452	2.28	13.8	6.05	83.7
621	7.82	8.05	3.08	4.97	0.859	1.51	15.0	9.91	148
622	9.77	10.05	4.62	3.36	0.816	2.85	20.7	7.28	151
627	13.02	13.46	7.00	3.48	1.36	3.34	29.6	8.86	262
623	13.02	13.46	7.00	6.61	2.62	1.74	29.6	17.0	505
624	13.02	13.46	7.71	6.61	2.36	2.10	31.2	14.9	465
697	14.30	14.70	8.75	5.15	2.26	2.85	35.5	12.5	445
628	16.67	17.15	8.48	6.61	4.51	1.59	36.8	23.2	853
629	19.53	20.09	6.18	9.21	10.8	0.64	32.9	51.1	1680
631	24.59	25.31	11.69	6.25	9.77	1.51	52.3	34.6	1810
630	24.59	25.31	11.69	12.39	19.54	0.755	52.3	69.2	3620
625	26.03	26.78	12.38	6.61	11.6	1.43	55.3	38.8	2140
799	26.03	26.78	12.38	13.14	23.2	0.714	55.3	77.5	4290
861	31.05	32.44	19.00	12.50	31.4	0.993	76.0	76.5	5810
870	39.03	40.16	24.77	6.61	19.3	2.44	97.1	39.8	3860
951	39.03	40.16	24.77	13.08	38.6	1.22	97.1	80.0	7720
582	39.03	40.16	24.77	19.61	57.9	0.814	97.1	119	11600
645	63.00	64.83	38.00	12.50	125.5	0.993	152	153	23250
646	63.00	64.83	38.00	25.00	251.0	0.497	152	306	46400
797	79.91	82.23	42.93	14.44	219.0	0.784	182	232	42100

NOTES:

(1) All corners are rounded.

(2) These dimensions do not include the enamel thickness (0.13 mm approx.).

(3) This core is not normally supplied with the enamel finish.

SEI

NICKEL-ZINC FERRITE RING CORES—listed in order of size

GRADE		K4	K6	K10	K7	K8
Initial permeability		250	120	100	60	15
Frequency range for hi-Q		0.5—4MHz	1—10MHz	1—15MHz	1—25MHz	20—50MHz
Body colour		Blue	Black	Green	Brown	Grey
Core size	Mean diameter (mm)	A_L				
682	2.0	14.9	7.16	5.96	3.58	0.895
542	3.2	52.4	25.2	20.98	12.6	3.15
610	3.5	48.9	23.5	19.5	11.7	2.93
611	4.5	58.8	28.2	23.5	14.1	3.53
620	5.9	82.6	39.7	33.1	19.8	4.96
626	5.9	116	55.5	46.2	27.8	6.94
428	6.4	138	66.0	55.1	33.0	8.25
621	7.6	208	99.8	83.2	49.9	12.5
622	9.5	111	53.0	44.1	26.5	6.63
627	12.7	94.0	45.1	42.0	22.6	5.64
623	12.7	181	86.7	72.2	43.4	10.8
624	12.7	150	71.9	59.8	35.9	8.98
697	14.0	110	52.9	40.1	26.4	6.61
628	16.3	198	95.1	79.2	47.5	11.9
629	19.1	488	234	195	117	29.3
631	24.0	208	99.8	83.2	49.9	12.5
630	24.0	416	200	166	99.8	25.0
625	25.4	220	106	87.9	52.8	13.2
799	25.4	440	211	176	106	26.4
861	31.5	317	152	127	76.0	19.0
870	38.1	129	61.8	51.5	30.9	7.2
951	38.1	257	124	103	61.8	15.4
582	38.1	386	185	154	92.7	23.2
645	63.0	316	152	127	76.0	19.0
646	63.0	636	306	253	153	38.0
797	78.0	401	192	160	96.2	24.1

NOTES (cont.):

(6) T3 ring cores replace the obsolete T2 range, but for customers' convenience the original A_L values have been retained.

(7) Cores of A_L <40 and sizes 682 and 542 are selected by special arrangement only.

(8) Cores in K grades are normally supplied standard or to ±20% tol.

(9) Ring cores in K8 have ID and OD approximately 9% larger than figures for P grade.

FERRITE RING CORES

INDUCTANCE FACTORS

MANGANESE ZINC FERRITE RING CORES—listed in order of size

GRADE		T6	T4	T3[5]	L2	P	S1
Initial permeability		10000	6000	4700	3000	2000	750
Frequency range for hi-Q				100 kHz	100 kHz	500 kHz	5 MHz
Body colour		Pale blue	Pale green	Beige	Lilac	Red	Yellow
Core size	Mean diameter (mm)	A_L					
682	2.0	596	357	239	179	119	44.8
542	3.2	2098	1259	838	629	420	157
610	3.5	1954	1173	**782**	**586**	**391**	147
611	4.5	2349	1409	**940**	**705**	**470**	176
620	5.9	**3307**	**1984**	**1320**	**991**	**661**	**248**
626	5.9	4620	2772	**1850**	**1390**	**925**	**347**
428	6.4	5512	3307	2200	1650	**1100**	413
621	7.6	**8322**	**4993**	**3330**	**2500**	**1660**	624
622	9.5	**4409**	**2646**	**1770**	**1330**	**884**	**332**
627	12.7			**1500**	**1130**	**752**	**282**
623	12.7			**2890**	**2170**	**1450**	**542**
624	12.7			2400	1800	1200	449
697	14.0			1764	1323	882	331
628	16.3			**3170**	**2380**	**1580**	**594**
629	19.1			**7810**	**5860**	**3910**	1470
631	24.0			**3330**	**2500**	**1660**	**624**
630	24.0			**6650**	**4990**	**3330**	**1250**
625	25.4			**3520**	**2640**	**1760**	**660**
799	25.4			**7040**	**5280**	**3520**	1320
861	31.5			5068	3801	2534	950
870	38.1			**2060**	**1540**	**1030**	386
951	38.1			**4120**	**3090**	**2060**	772
582	38.1			**6180**	**4630**	**3090**	**1160**
645	63.0			5062	3796	2531	949
646	63.0			10183	7637	5092	1909
797	78.0			**6410**	**4810**	**3210**	**1200**

NOTES:

(1) Measuring flux density <1 mT. NB. Measuring at higher flux densities will cause change in the measured value. For further details see graphs of B v μ in section 4. Also, pressure caused by some potting compounds may cause undue stresses within the core and cause irregular results.

(2) Values apply at 25°C.

(3) Figures in bold print are the popular core size/grade combinations.

(4) Material characteristics for the P grade are similar to Q3 grade, found in section 4.

(5) Cores in T3 are normally supplied to −10/+30% tol.

LA	S.E.I. No.
1	GA154A
2	GA154B
3	GA154C
4	GA764B
5	GA764C
6	GA764D
7	GA764A
11	MM178A
12	MM178D
13	MM178B
42	VGA106A
43	VGA106B
44	VGA106C
45	VGA106D
1103	MM722/360/P
1104	MM2014
1105	MM722/142/P
1113	MM2004
1114	MM2015
1115	MM724/218/P
1116	MM2017
1117	MM726/533/P
1118	MM726/336/P
1134	MM2020
1135	MM721/110/P
1138	MM2016
1139	MM723/296/P
1140	MM723/186/P
1141	MM2019
1142	MM725/444/P
1143	MM725/280/P
1144	MM727/1075/P
1145	MM727/672/P
1153	MM722/430/P
1157	MM721/110/S1
1158	MM721/70/S1
1161	MM722/142/S1
1162	MM722/90/S1
1163	MM722/56/S1
1164	MM723/186/S1
1165	MM723/118/S1
1166	MM723/74/S1
1167	MM724/218/S1
1168	MM724/138/S1
1169	MM724/86/S1
1170	MM725/280/S1
1171	MM725/178/S1
1172	MM725/111/S1
1173	MM726/336/S1
1174	MM726/213/S1
1175	MM726/133/S1
1181	MM721/28/S1
1189	MM724/890/P
1191	MM721/279/P
1193	MM722/563/P
1194	MM723/592/P
1195	MM723/739/P
1196	MM2005
1197	MM725/890/P
1198	MM725/1110/P
1200	MM726/1330/P
1201	MM727/1680/P
1210	MM726/2130/Q3
1211	MM726/1331/Q3
1212	MM726/852/Q3
1213	MM726/533/Q3
1214	MM725/1776/Q3
1215	MM725/1110/Q3
1216	MM725/711/Q3
1217	MM725/444/Q3
1218	MM724/1381/Q3
1219	MM724/863/Q3
1220	MM724/552/Q3
1221	MM724/345/Q3
1222	MM723/739/Q3
1223	MM723/473/Q3
1224	MM723/296/Q3
1225	MM722/563/Q3
1226	MM722/360/Q3
1227	MM722/225/Q3
1228	MM721/437/Q3
1229	MM721/279/Q3
1230	MM721/175/Q3
1266	MM484-5
1273	MM482-3
1274	MM483-3
1275	MM484-3
1276	MM722/90/K10
1277	MM722/56/K10
1278	MM722/36/K10
1279	MM721/70/K10
1280	MM721/44/K10
1281	MM721/28/K10
1291	MM720/123/P
1292	MM720/78/P
1293	MM720/49/P
1294	MM482-5
1295	MM483-5
1299	MM482-7
1300	MM483-7
1338	MM482-4
1339	MM483-4
1340	MM484-4
1344	MM481-4/1
1345	MM482-4/1
1346	MM481-3/1

LA	S.E.I. No.
1347	MM482-3/1
1350	MM724/218/Q3
1362	MM486-3
1368	MM2015
1371	MM723/932/P
1372	MM722/76/K10
1373	MM722/59/K10
1374	MM722/45/K10
1375	MM721/55/K10
1376	MM721/46/K10
1377	MM721/37/K10
1378	MM720/34/K10
1379	MM720/32/K10
1380	MM720/30/K10
1383	MM720-3
1384	MM720-7
1385	MM722/716/P
1393	MM722/142/Q3
1396	MM721/279/P
1397	MM722/563/P
1398	MM722/90/Q3
1399	MM807-3
1400	MM807-5
1409	MM727/1680/Q3
1410	MM727/1075/Q3
1411	MM727/672/Q3
1412	MM726/336/Q3
1413	MM725/280/Q3
1414	MM724/218/Q3
1415	MM723/186/Q3
1416	MM722/142/Q3
1417	MM721/110/Q3
1421	MM720/123/Q3
1422	MM720/69/Q3
1423	MM720/44/Q3
1424	MM808-3
1427	MM807-4
1428	MM810-3
1429	MM806-3
1430	MM808-5
1431	MM808-4
1432	MM810-4
1433	MM810-5
1436	MM806/315/Q3
1437	MM806/250/Q3
1441	MM806/160/Q3
1442	MM806/100/Q3
1485	MM806/40/S1
1487	MM806/400/Q3
1488	MM806/63/Q3
1494	MM805-4
1495	MM805-3
1497	MM806/100/S1
1498	MM806/63/S1
1500	MM806-4
1501	MM806-5
1502	MM483-3
1503	MM483-4
1504	MM483-5
1505	MM482-3
1506	MM482-4
1507	MM482-5
1519	MM805-5
1520	MM2002
1522	MM2077
1523	MZ806/T/T6
1524	MZ808/T/T4
1525	MM483-7
1526	MM482-7
1530	MM806/630/Q3
1631	MX808/160/L2
1632	MX808/250/L2
1639	MX808/100/L2
1641	MX810/160/L2
1642	MX810/250/L2
1643	MX810/315/L2
1644	MX810/400/L2
1645	MX810/630/L2
1671	MX814/160/L2
1672	MX814/250/L2
1674	MX814/400/L2
1675	MX814/630/L2
1676	MX814/1000/L2
1680	MZ810/2000/L2
3102	MM486/1600/P
3103	MM486/1000/P
3104	MM486/630/P
3126	MM486/250/S1
3127	MM486/160/S1
3128	MM486/100/S1
3142	MM486/1600/Q3
3143	MM486/1000/Q3
3144	MM486/630/Q3
3145	MM486/400/Q3
3202	MM485/1600/P
3203	MM485/1000/P
3204	MM485/630/P
3205	MM485/400/P
3226	MM485/250/S1
3227	MM485/160/S1
3228	MM485/100/S1
3242	MM485/1600/Q3
3243	MM485/1000/Q3
3244	MM485/630/Q3
3245	MM485/400/Q3
3303	MM484/1000/P

Also supplied as MZ

LA	S.E.I. No.
3304	MM484/630/P
3305	MM484/400/P
3306	MM484/250/P
3327	MM484/160/S1
3328	MM484/100/S1
3329	MM484/63/S1
3343	MM484/1000/Q3
3344	MM484/630/Q3
3345	MM484/400/Q3
3346	MM484/250/Q3
3404	MM483/630/P
3405	MM483/400/P
3406	MM483/250/P
3427	MM483/160/S1
3428	MM483/100/S1
3429	MM483/63/S1
3443	MM483/1000/Q3
3444	MM483/630/Q3
3445	MM483/400/Q3
3446	MM483/250/Q3
3504	MM482/630/P
3505	MM482/400/P
3506	MM482/250/P
3507	MM482/160/P
3528	MM482/100/S1
3529	MM482/63/S1
3530	MM482/40/S1
3544	MM482/630/Q3
3545	MM482/400/Q3
3546	MM482/250/Q3
3547	MM482/160/Q3
3549	MM482/100/Q3
3706	MM481/250/P
3707	MM481/160/P
3708	MM481/100/P
3728	MM481/100/S1
3729	MM481/63/S1
3730	MM481/40/S1
3745	MM481/400/Q3
3746	MM481/250/Q3
3747	MM481/160/Q3
3748	MM481/100/Q3
4028	MM805/100/S1
4029	MM805/63/S1
4030	MM805/40/S1
4046	MM805/250/Q3
4047	MM805/160/Q3
4048	MM805/100/Q3
4076	MM805/250/Q7
4077	MM805/160/Q7
4078	MM805/100/Q7
4128	MM826/100/S1
4129	MM826/63/S1
4130	MM826/40/S1
4145	MM826/400/Q3
4146	MM826/250/Q3
4147	MM826/160/Q3
4148	MM826/100/Q3
4175	MM806/400/Q7
4176	MM806/250/Q7
4177	MM806/160/Q7
4178	MM806/100/Q7
4228	MM807/100/S1
4229	MM807/63/S1
4230	MM807/40/S1
4245	MM807/400/Q3
4246	MM807/250/Q3
4247	MM807/160/Q3
4248	MM807/100/Q3
4275	MM807/400/Q7
4276	MM807/250/Q7
4277	MM807/160/Q7
4278	MM807/100/Q7
4328	MM808/100/S1
4329	MM808/63/S1
4344	MM808/630/Q3
4345	MM808/400/Q3
4346	MM808/250/Q3
4347	MM808/160/Q3
4348	MM808/100/Q3
4375	MM808/400/Q7
4376	MM808/250/Q7
4377	MM808/160/Q7
4528	MM810/100/S1
4529	MM810/63/S1
4543	MM810/1000/Q3
4544	MM810/630/Q3
4545	MM810/400/Q3
4546	MM810/250/Q3
4547	MM810/160/Q3
4574	MM810/630/Q7
4575	MM810/400/Q7
4576	MM810/250/Q7

Unlike those listed on previous pages which are direct replacement items, the cores shown below are nearest equivalents only and the S.E.I. Magnetic Components booklet should be consulted for details.

FX	S.E.I. No.
1230	MX625/P
1231	MX625/K4
1242	MX769/K4
1299	MX625/K6
1306	MX769/K6
1309	MM769/K7
1312	MX769/K8
1322	MX627/P
1358	MX625/K7
1582	MX625/S
1583	MX625/S
1584	MX625/K8
1595	MX627/K4
1596	MX627/K6
1597	MX627/K7
1687	MX769/P
1886	MX611/K8
1969	MX682/P
2072	MX621/P
2073	MX611/P
2270	MX611/K7
2431	MX621/S1
2633	MX621/T1
3011	MM627/S
3012	MM627/K4
3013	MM627/K6
3014	MM627/K7
3015	MM627/K8
3016	MM625/P
3017	MM625/P
3018	MM625/S
3019	MM625/K4
3020	MM625/K6
3021	MM625/K7
3022	MM625/K8
3311	MM627/T2
3312	MM625/T2
1076	MM656/P

DT	S.E.I. No.
2169	MM730A
2178	MM732A
2179	MM734A
2180	MM736A
2196	MM850
2202	MM731A
2204	MM733A
2205	MM735A
2206	MM737A
2207	MM692-2/1
2258	MM491A
2259	MM492A
2260	MM493A
2261	MM494A
2262	MM495A
2263	MM496A
2279	MM731B
2281	MM732B
2282	MM733B
2283	MM734B
2284	MM735B
2285	MM736B
2286	MM737B
2309	MM730E
2311	MM731E
2312	MM732E
2351	MM771-1/2
2352	MM771-1/1
2354	MM771-2
2356	MM772-1/2
2357	MM772-1/1
2359	MM772-2
2361	MM773-1/2
2362	MM773-1/1
2364	MM773-2
2366	MM774-1/2
2367	MM774-1/1
2369	MM774-2
2371	MM775-1/2
2372	MM775-1/1
2374	MM775-2
2376	MM776-1/2
2377	MM776-1/1
2379	MM776-2
2382	MM771-3
2387	MM807-1/1
2391	MM817-1A5
2392	MM817-1A8
2396	MM808-1/1
2398	MM806 1/1
2406	MM810-1/1
2467	MM836-/A4 (But shorter pin than Mullard)
2468	MM817-3A4

DT	S.E.I. No.
2470	MM818-1A4
2477	MM836-2B6
2480	MM818-1A8Z
2481	MM818-1B8Z
2487	MM807-1/2
2491	MM816-4A4
2492	MM816-3A6
2496	MM808-1/2
2498	MM806-1/2
2501	MM777-1/2
2502	MM777-1/1
2504	MM777-2/1
2506	MM810-1/2
2517	MM836-2A6
2522	MM817-1B5
2523	MM817-1B8
2534	MM820-1A5
2535	MM820-2A8
2538	MM820-1B5
2539	MM820-1B8
2601	MM805-1/2
2602	MM815-1A6
2612	MM815-1A4
2631	MM824-1A12
2633	MM814-1/2

2642 MM820-1A8Z

2484 MM818-1A8

2483 MM818-1A12

FX	S.E.I. No.
1007	MM889/Q5*
1052	MM882/Q5
1076	MX656/P
1105	MM886/Q5
1107	MM929/Q5*
1115	MX769/P
1238	MM885/Q5
1239	MM888/Q5
1586	MX870/P
1587	MX870/S
1588	MX870/20/K4
1589	MX870/20/K6
1590	MX870/K7
1591	MX870/K8
1593	MX627/P
1594	MX627/20/S
1598	MX627/K8
1652	MM884/Q5*
1653	MM892/Q5*
1700	MM925/Q5
1818	MM890/Q5*
1819	MM891/Q5
2049	MX873/K4
2236	MM721/1/Q5
2238	MM722/1/Q5
2239	MM723/1/Q5
2240	MM724/1/Q5
2241	MM725/1/Q5
2242	MM726/1/Q5
2243	MM727/1/Q5
2249	MX871/S1
2395	MX582/P
2501	MM720/1/Q5
2594	MM721/1/K10
2596	MM722/1/K10
2634	MX871/Q3
2691	MX627/P
2754	MX873/Q3
2837	MX871/T2
3007	MM627/P
3008	MY627/P
3009	MM627/P
3026	MM870/20/K4
3027	MM870/20/K6
3028	MM870/K7
3029	MM870/K8
3030	MM582/P
3210	MM2036
3280	MM720/1/T3
3282	MM721/1/T3
3283	MM722/1/T3
3284	MM723/1/T3
3285	MM724/1/T3
3286	MM725/1/T3
3287	MM726/1/T3
3288	MM727/1/T3
3308	MM2030
3313	MM870/T3
3316	MX872/T2
3391	MX872/Q3
3432	MM806/1/Q5
3433	MM826/1/Q5
3434	MM807/1/Q5
3435	MM808/1/Q5
3436	MM810/1/Q5
3437	MM806/1/T3
3438	MM826/1/T3
3439	MM807/1/T3
3440	MM808/1/T3
3441	MM810/1/T3
3550	MM810/1/L1
3573	MM929/L1*
3574	MM889/L1*
3579	MM888/L1
3590	MM895/L1
3591	MM885/L1
3670	MM808/1/L2
3830	MM799/L2
3831	MM861/L2
3832	MM951/L2
3848	MM627/L1
3849	MM625/L1
3850	MM622/K10
3852	MM624/K10
3853	MM631/K10
3854	MM951/K10
3861	L2 BAR 25.4 × 25.4 × 99 mm
3920	MM810/1/L2
3980	MM814/1/L2
4052	MM622/T2
4053	MM628/T2
4054	MM631/T2
4060	MX610/P
4061	MM620/P
4062	MM622/P
4063	MM624/P
4064	MM631/P