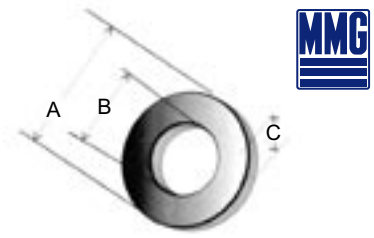


Ferrite toroids are ring-shaped components which can be used in a great variety of applications including EMI suppressors, chokes, transformers and inductors. Toroids have many design advantages, for instance, they have a uniform cross section which makes predicting electrical parameters a simple calculation. The closed magnetic structure of toroids confines magnetic flux within the core body which gives the structure good shielding characteristics as well as optimal inductance to core volume ratio. MMG manufactures toroids in a wide range of materials and sizes from 2.03mm to greater than 100mm in diameter and that can be manufactured in any of our materials in order to optimize the part for a given application.



TOROID CORES

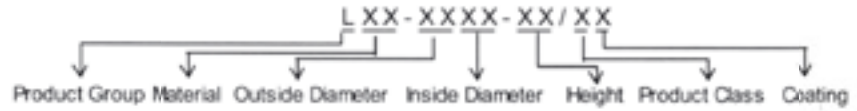
Part No.	A mm	B mm	C mm	le mm	Ae mm ²	Ve mm ³	F5A	P12	F8	F9	F9C	F14	F19	F5C	F10	F39	F47	F48	F44	F16	F57	F5
28-0611-	T4.5x2.5x2.0	4.5 _{±0.18}	2.495 _{±0.105}	2.0 _{±0.18}	-	-	-	470 _{±30%}	-	-	940/R	-	-	-	-	-	-	-	-	-	-	-
28-119-	T5.8x3.0x3.05	5.84 _{±0.16}	3.05 _{±0.13}	3.05 _{±0.13}	13.029	4.108	53.52	-	-	-	1900/R	-	-	-	-	-	-	-	764/R	-	-	-
28-001-	T6.35x3.18x1.52	6.35 _{±0.19}	3.17 _{±0.15}	1.52 _{±0.13}	13.81	2.32	32.05	-	-	-	1052/R	-	-	-	-	-	-	-	399 _{±30% ±10%}	-	-	-
28-002-	T6.35x3.18x3.96	6.35 _{±0.19}	3.17 _{±0.15}	3.96 _{±0.25}	13.82	6.049	83.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-003-	T6.35x3.18x7.92	6.35 _{±0.19}	3.17 _{±0.15}	7.93 _{±0.3}	13.80	12.06	166.0	-	1983 _{Mini}	1322 _{Mini}	4820 _{±30% ±20%}	-	242/R	-	-	-	-	-	-	-	-	-
28-070-	T9.52x4.75x3.18	9.52 _{±0.25}	4.75 _{±0.25}	3.18 _{±0.12}	20.70	7.29	151	1250 _{±25%}	-	-	2000 _{±20%}	2210/R	-	442 _{±30%}	1330 _{±30%}	3000/R	-	-	840/R	53/R	3320 _{±25%}	-
28-107-	T10x6x4	10 _{±0.4}	6.0 _{±0.30}	4.0 _{±0.2}	24.07	7.84	188.70	-	-	-	2046/R	-	-	-	2460/R	-	-	-	-	-	-	-
28-011-	T12.7x6.35x3.18	12.7 _{±0.30}	6.35 _{±0.25}	3.17 _{±0.25}	27.6	9.68	268	-	-	-	-	-	-	-	2645/R	-	-	-	-	-	-	-
28-012-	T12.7x6.35x6.35	12.7 _{±0.3}	6.35 _{±0.25}	6.35 _{±0.3}	27.65	19.37	535.7	-	-	1317/R	3864/R	4401/R	193/R	-	4224 _{Mini}	7570 _{±30%}	-	-	-	-	-	-
28-013-	T12.7x6.35x9.52	12.7 _{±0.30}	6.35 _{±0.25}	9.52 _{±0.36}	27.6	29.04	804	-	-	-	-	-	290/R	-	-	-	-	-	-	-	-	-
28-017-	T12.7x7.1x5.0	12.85 _{±0.45}	7.35 _{±0.25}	5 _{±0.25}	30.13	13.45	405	-	-	-	2468 _{±25%}	-	-	-	-	-	-	-	-	-	-	-
28-018-	T12.7x7.1x6.35	12.85 _{±0.45}	7.35 _{±0.25}	5 _{±0.25}	30.13	17.02	513.0	-	-	-	-	3548 _{±20%}	-	-	-	-	-	-	-	-	-	-
28-0627-	T12.7x7.2x3.2	12.7 _{±0.32}	7.3 _{±0.3}	3.3 _{±0.18}	2.962	0.08856	0.2623	-	-	-	-	1500/R	-	-	1130 _{±30%}	-	-	-	-	-	-	-
28-019-	T12.7x7.9x6.35	12.7 _{±0.3}	7.9 _{±0.15}	6.35 _{±0.2}	31.17	14.96	466	1507/R	-	-	-	3020/R	-	442/R	-	2800 _{Mini}	4600 _{Mini}	-	-	-	4500 _{±25%}	-
28-085-	T14x9x5	14 _{±0.4}	9 _{±0.4}	5 _{±0.4}	34.9	12.3	430	-	-	-	-	2200/R	-	442/R	-	2650/R	-	795/R	-	-	-	-
28-059-	T16.7x9.6x5.0	16.76 _{±0.5}	9.65 _{±0.25}	5 _{±0.25}	39.45	17.33	683	-	-	-	1943 _{Mini}	2730 _{±25%}	-	-	-	5520/Y	993/R	-	-	-	-	-
28-063-	T16.7x9.65x6.35	16.76 _{±0.5}	9.65 _{±0.25}	6.3 _{±0.25}	39.45	21.84	864	-	-	-	3055/R	3470 _{±30%}	-	-	4165/R	-	-	-	1320/R	-	-	-
28-076-	T17.5x9.6x28.5	17.5 _{±0.5}	9.6 _{±0.3}	28.52 _{±0.6}	40.11	109.3	4386	-	-	-	-	-	-	-	-	-	-	-	-	3921 _{±30%}	-	-
28-023-	T19.05x12.7x9.52	19.05 _{±0.76}	12.7 _{±0.51}	9.52 _{±0.36}	48.50	29.88	1449	-	-	930 _{Mini}	3410/R	3880 _{±30%}	-	-	-	-	-	-	-	-	-	-
28-0116-	T20x10x6.8	20.45 _{±0.55}	10 _{±0.2}	6.8 _{±0.2}	43.98	34.05	1497.5	-	-	-	4189/R	4860/R	-	-	-	-	-	-	1790/R	-	-	-
28-095-	T22.1x13.7x12.7	22 _{±0.3}	13.72 _{±0.25}	12.70 _{±0.25}	54.08	51.61	2791	2400 _{Mini}	-	5277/R	6110 _{±20%}	-	-	1196 _{±30%}	-	7125/R	10000 _{±30%}	-	-	-	-	-
28-0631-	T24x12x6	24 _{±0.59}	12.18 _{±0.49}	6 _{±0.25}	52.26	34.59	1808	-	-	-	-	3330 _{±30% ±10%}	-	-	-	-	-	-	-	-	-	-
28-055-	T24x12x12	24 _{±0.6}	11.85 _{±0.35}	11.85 _{±0.35}	51	69.57	3548	-	-	-	-	8571/R	366/R	-	-	-	-	-	-	-	-	-
28-080-	T25x15x10	25 _{±1.30}	15 _{±0.77}	10 _{±0.30}	60.20	49.00	2950	-	-	-	4000 _{Mini}	4080 _{Mini}	-	-	-	6130/R	10220 _{±40%}	-	-	1522 _{Mini}	-	2040 _{±25%}
28-056-	T31.5x19.6x12.5	31.5 _{±1.0}	19.6 _{±0.6}	12.5 _{±1.25}	76.04	76.48	5816	2970/R	-	-	5000/R	6320/R	-	2970 _{±30% ±25%}	3843 _{±30% ±25%}	-	11800/Y	-	-	-	-	-
28-141-	T36x23x16	36.4 _{±1.1}	22.6 _{±0.9}	15.4 _{±0.8}	89.65	95.89	8597	-	-	-	-	-	-	-	-	-	13600/Y	-	-	-	-	-
28-044-	T38.1x25.4x15.87	38.1 _{±1.52}	25.4 _{±1.02}	15.87 _{±0.38}	97.06	99.41	9650	3217/R	-	-	5663/R	6500 _{±20%}	-	-	-	-	-	-	2445/R	-	-	-
28-043-	T38.1x25.4x19.05	38.1 _{±1.52}	25.4 _{±1.02}	19.05 _{±0.41}	97.10	119.40	11580	-	-	2480 _{±20%}	6830/R	7725/R	341/R	-	-	-	13285 _{±30%}	-	2935/R	-	-	-
28-029-	T45x19x16	45 _{±1.0}	19 _{±1}	16 _{±0.5}	89	195.4	17370	5000/R	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-132-	T49x31.8x19	49.1 _{±0.8}	31.8 _{±0.5}	19.05 _{±0.4}	123	162	19926	-	-	-	-	8215/R	-	-	4970/R	9860 _{±30%}	-	-	-	-	-	-
28-089-	T54x15x19	54 _{±2.10}	15.6 _{±0.6}	19.0 _{±0.4}	85.72	321.7	27594	-	-	-	21200/R	-	1070 _{±20%}	-	14600/R	-	-	-	-	-	-	-
28-052-	T56x32x18	55.4 _{±1.6}	32.4 _{±0.7}	18 _{±0.7}	131.5	202.10	26578	-	-	-	7724 _{±30% ±20%}	-	-	-	-	-	-	-	-	-	-	-
28-061-	T63x38x25	63 _{±2}	38 _{±1.2}	25 _{±0.8}	152	305.93	46530	6319/R	-	-	11100/R	12640 _{±30% ±20%}	-	-	-	15160 _{±25%}	-	5450/R	-	-	-	5054/R
28-0797-	T78x45x14	78.00 _{±1.98}	44.65 _{±1.72}	14.00 _{±0.44}	181.6	231.8	42098	-	3210 _{±30%}	-	-	6410 _{±30% ±10%}	-	1600 _{±30% ±25%}	4810 _{±30%}	-	-	-	-	-	-	-
28-0660-	T102x66x15	102 _{±2.0}	65.8 _{±1.3}	15.00 _{±0.5}	255.32	267.21	68225	-	-	-	-	-	-	-	7890/R	-	-	-	-	-	-	-

- ❖ Coated Toroids can be provided on request. (Epoxy , Enamel, Parylene)
- ❖ Gapped Toroids can be available on request.

R - +30%, - 20%
Y - +40%, - 30%

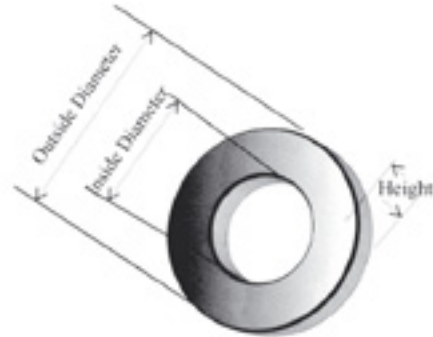


TOROID CORES



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Core Part No.	Outside Diameter (in.)	Outside Diameter (mm)	Inside Diameter (in.)	Inside Diameter (mm)	Height (in.)	Height (mm)	C ₁ (mm ⁻¹)	L ₀ (mm)	A ₀ (mm ²)	V ₀ (mm ³)
-2A1F-0V/1	0.08	2.03	0.05	1.27	0.03	0.762	17.63	4.998	0.284	1.42
-2A1F-14/1	0.08	2.03	0.05	1.27	0.039	0.9906	13.53	4.998	0.369	1.85
-2A1F-1F/1	0.08	2.032	0.05	1.27	0.05	1.27	10.55	4.998	0.474	2.37
-2V1F-0V/1	0.1	2.54	0.05	1.27	0.03	0.762	11.93	5.531	0.464	2.56
-2V1F-14/1	0.1	2.54	0.05	1.27	0.039	0.9906	9.16	5.531	0.604	3.34
-2V1F-1F/1	0.1	2.54	0.06	1.27	0.05	1.27	7.14	5.531	0.775	4.29
-2V20-0V/1	0.1	2.54	0.07	1.778	0.03	0.762	23.25	6.645	0.286	1.90
-2V20-14/1	0.1	2.54	0.07	1.778	0.039	0.9906	17.85	6.645	0.372	2.47
-2V20-1F/1	0.1	2.54	0.07	1.778	0.05	1.27	13.92	6.645	0.478	3.17
-3F1F-0V/1	0.12	3.048	0.05	1.27	0.03	0.762	9.41	5.985	0.636	3.81
-3F1F-14/1	0.12	3.048	0.05	1.27	0.039	0.9906	7.24	5.985	0.826	4.95
-3F1F-1F/1	0.12	3.048	0.05	1.27	0.05	1.27	5.65	5.985	1.060	6.34
-3V20-0V/1	0.135	3.429	0.07	1.778	0.03	0.762	12.55	7.615	0.607	4.62
-3V20-14/1	0.135	3.429	0.07	1.778	0.039	0.9906	9.65	7.615	0.789	6.02
-3V20-1F/1	0.135	3.429	0.07	1.778	0.05	1.27	7.53	7.615	1.011	7.70
-3Y20-0V/1	0.138	3.5052	0.07	1.778	0.03	0.762	12.18	7.704	0.633	4.87
-3Y20-14/1	0.138	3.5052	0.07	1.778	0.039	0.9906	9.35	7.704	0.824	6.35
-3Y20-1F/1	0.138	3.5052	0.07	1.778	0.05	1.27	7.29	7.704	1.057	8.15
-4F20-0V/1	0.155	3.937	0.07	1.778	0.03	0.762	10.41	8.105	0.779	6.31
-4F20-14/1	0.155	3.937	0.07	1.778	0.039	0.9906	7.99	8.105	1.015	8.22
-4F20-1F/1	0.155	3.937	0.07	1.778	0.05	1.27	6.23	8.105	1.302	10.55
-4F29-0V/1	0.155	3.937	0.079	2.0066	0.03	0.762	12.28	8.676	0.706	6.13
-4F29-14/1	0.155	3.937	0.079	2.0066	0.039	0.9906	9.43	8.676	0.920	7.98
-4F29-1F/1	0.155	3.937	0.079	2.0066	0.05	1.27	7.35	8.676	1.180	10.24
-4F2H-0V/1	0.155	3.937	0.087	2.2098	0.03	0.762	14.27	9.134	0.640	5.85
-4F2H-14/1	0.155	3.937	0.087	2.2098	0.039	0.9906	10.98	9.134	0.832	7.60
-4F2H-1F/1	0.155	3.937	0.087	2.2098	0.05	1.27	8.56	9.134	1.067	9.74
-5F2K-14/1	0.19	4.826	0.09	2.286	0.039	0.9906	8.50	10.21	1.201	12.26
-5F2K-1F/1	0.19	4.826	0.09	2.286	0.05	1.27	6.63	10.21	1.540	15.72
-5F2K-2W/1	0.19	4.826	0.09	2.286	0.09	2.286	3.68	10.21	2.777	28.35
-6K3F-1Q/1	0.23	5.842	0.12	3.048	0.06	1.524	6.36	13.029	2.047	26.67
-6K3F-3F/1	0.23	5.842	0.12	3.048	0.12	3.048	3.17	13.029	4.108	53.52
-6K3F-3W/1	0.23	5.842	0.12	3.048	0.125	3.175	3.04	13.029	4.282	55.75
-8K3K-3W/1	0.3	7.62	0.125	3.175	0.125	3.175	2.26	14.983	6.627	99.29
-8K3K-5C/1	0.3	7.62	0.125	3.175	0.187	4.7498	1.51	14.983	9.899	148.32
-AG5C-3K/1	0.375	9.525	0.187	4.7498	0.125	3.175	2.84	20.716	7.300	151.24
-AG5C-5C/1	0.375	9.525	0.187	4.7498	0.187	4.7498	1.90	20.716	10.905	225.90
-EA87-5C/1	0.5	12.7	0.287	7.2898	0.187	4.7498	2.38	29.844	12.524	373.76
-EA87-75/1	0.5	12.7	0.287	7.2898	0.25	6.35	1.78	29.844	16.742	499.66
-EA8X-5C/1	0.5	12.7	0.312	7.9248	0.187	4.7498	2.80	31.217	11.144	347.87
-EA8X-75/1	0.5	12.7	0.312	7.9248	0.25	6.35	2.10	31.217	14.898	465.05



Typical A_L Values nH/Turn²

Material Permeability	NickelZinc								Manganese Zinc								
	F31	F21	F01	FA1	F52	F53	FF1	F58	F82	F9Q	F83	F9N	F65	F82	FT6	FT7	FTA
Part Number	15	40	120	370	850	1050	1500	750	2000	2300	2700	4000	4500	5000	6000	7500	10000
L_2A1F-0V/I	1.1	2.9	9	26	61	75	107	53	143	164	192	314	356	356	428	535	713
L_2A1F-14/I	1.4	3.7	11	34	79	98	139	70	186	214	251	409	464	464	557	696	929
L_2A1F-1F/I	1.8	4.8	14	44	101	125	179	89	236	274	322	524	596	596	715	894	1191
L_2V1F-0V/I	1.6	4.2	13	39	90	111	158	79	211	242	284	454	527	527	632	790	1054
L_2V1F-14/I	2.1	5.5	16	51	117	144	206	103	274	316	371	604	686	686	823	1029	1372
L_2V1F-1F/I	2.6	7.0	21	65	150	185	264	132	352	405	475	775	880	880	1056	1320	1760
L_2V20-0V/I	0.8	2.2	6	20	46	57	81	41	108	124	146	238	270	270	324	405	540
L_2V20-14/I	1.1	2.8	8	26	60	74	106	53	141	162	190	310	352	352	422	528	704
L_2V20-1F/I	1.4	3.6	11	33	77	95	135	68	181	208	244	397	452	452	542	677	903
L_3F1F-0V/I	2.0	5.3	16	49	114	140	200	100	267	307	361	588	668	668	801	1002	1335
L_3F1F-14/I	2.6	6.9	21	64	148	182	260	130	347	399	469	764	868	868	1041	1302	1736
L_3F1F-1F/I	3.3	8.9	27	82	189	234	334	167	445	512	601	979	1112	1112	1334	1668	2224
L_3V20-0V/I	1.5	4.0	12	37	85	105	150	75	200	230	270	441	501	501	601	751	1001
L_3V20-14/I	2.0	5.2	16	48	111	137	195	98	260	300	352	573	651	651	781	977	1302
L_3V20-1F/I	2.5	6.7	20	62	142	175	250	125	334	384	451	734	834	834	1001	1252	1669
L_3V20-0V/I	1.5	4.1	12	38	88	108	155	77	206	237	279	454	516	516	619	774	1032
L_3V20-14/I	2.0	5.4	16	50	114	141	202	101	269	309	363	592	672	672	807	1008	1344
L_3V20-1F/I	2.6	6.9	21	64	147	181	259	129	345	397	456	759	862	862	1035	1294	1725
L_4F20-0V/I	1.8	4.8	14	45	103	127	181	91	242	278	326	531	604	604	725	906	1208
L_4F20-14/I	2.4	6.3	19	58	134	165	236	118	315	362	425	692	787	787	944	1180	1573
L_4F20-1F/I	3.0	8.1	24	75	172	212	303	151	404	464	545	886	1009	1009	1211	1514	2018
L_4F29-0V/I	1.5	4.1	12	38	87	107	153	77	205	235	276	450	512	512	614	767	1023
L_4F29-14/I	2.0	5.3	16	49	113	140	200	100	267	306	360	586	666	666	800	999	1333
L_4F29-1F/I	2.6	6.8	21	63	145	179	256	128	342	393	462	752	855	855	1026	1282	1709
L_4F2H-0V/I	1.3	3.5	11	33	75	92	132	66	176	203	238	387	440	440	528	660	881
L_4F2H-14/I	1.7	4.6	14	42	97	120	172	86	229	263	309	504	572	572	687	858	1144
L_4F2H-1F/I	2.2	5.9	18	54	125	154	220	110	294	338	396	646	734	734	881	1101	1468
L_5F2K-14/I	2.2	5.9	18	55	126	155	222	111	296	340	399	650	739	739	887	1108	1478
L_5F2K-1F/I	2.8	7.6	23	70	161	199	284	142	379	436	512	834	948	948	1137	1422	1896
L_5F2K-2V/I	5.1	13.7	41	126	291	359	513	256	684	786	923	1504	1709	1709	2051	2564	3418
L_6K3F-1Q/I	3.0	7.9	24	73	168	207	296	148	395	454	533	869	987	987	1185	1481	1975
L_6K3F-3F/I	5.9	15.9	48	147	337	416	594	297	793	911	1070	1744	1981	1981	2378	2972	3963
L_6K3F-3K/I	6.2	16.5	50	153	351	434	620	310	827	951	1116	1819	2067	2067	2480	3100	4134
L_6K3K-3K/I	8.3	22.2	67	206	472	584	834	417	1112	1278	1501	2445	2779	2779	3335	4168	5556
L_6K3K-5C/I	12.5	33.2	100	307	706	872	1245	623	1660	1909	2241	3652	4150	4150	4980	6225	8300
L_6Q5C-3K/I	6.6	17.7	53	164	376	465	664	332	886	1018	1196	1948	2214	2214	2657	3321	4428
L_6Q5C-5C/I	9.9	26.5	79	245	562	694	992	496	1323	1521	1786	2910	3307	3307	3968	4960	6614
L_6A87-5C/I	7.9	21.1	63	195	448	554	791	396	1055	1213	1424	2320	2637	2637	3164	3955	5273
L_6A87-75/I	10.6	28.2	85	261	599	740	1057	529	1410	1621	1903	3101	3524	3524	4229	5286	7048
L_6A8X-5C/I	6.7	17.9	54	166	381	471	673	336	897	1032	1211	1974	2243	2243	2692	3365	4486
L_6A8X-75/I	9.0	24.0	72	222	510	630	900	450	1200	1380	1620	2639	2999	2999	3599	4499	5998