Toroidal Gapless Choke Core

Features

Fe-based amorphous alloy tape wound toroidal shape core
High saturation magnetic induction (＞1.5T),
Small size and reduction of DC resistance
High inductance in low load current
High stable inductance with various DC bias current
Low loss at high frequency than Silicon steel or Fesi core
Low leakage flux due to gapless toroidal core structure

Application

Smooth filter, Car audio choke coil, Normal mode line filter
Choke and energy storage for DC-DC converter
Output inductors of high frequency switched mode power supplies.

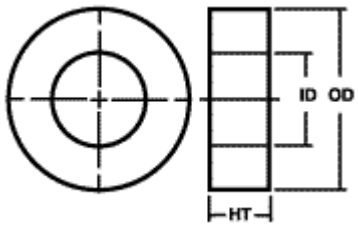
Property

Property	AM (250μ)	MPP (200/300μ)	AM (550μ)	MPP (550μ)	AM (1500μ)	Ferrite (1500μ)
Saturation flux density Bs (T)	1.54	0.75	1.54	0.75	1.54	0.45
Initial Perm μ_0	250	200/300	550	550	1500	1500
Loss (3000Gs/5kHz) (W/Kg)	17	20	10	55	4	9
Loss (1000Gs/20kHz) (W/Kg)	11	16	6	40	1.2	2
Loss (500Gs/100kHz) (W/Kg)	13	45	9	115	4	2
Loss (500Gs/200kHz) (W/Kg)	31	150	28	313	12	7
Loss (500Gs/300kHz) (W/Kg)	57	300	55	575	27	11
Curie Temperature (°C)	410	460	410	460	410	460
Resistivity (μΩ.m)	1.30	~10^4	1.30	~10^4	1.30	~10^4
Mass density (kg/m^3)	7300	8700	7300	8700	7300	8700
Stacking factor	0.86	-	0.86	-	0.86	-

Specification

Product Code Name: ANB- TN 18 11 10 - L 1

ANB: Company core code No. TN: Toroidal gapless core
18: core OD, 11: core ID, 10: core HT
L: Fe-based amorphous core with flat BH loop
1: permeability level = 250 2: permeability level = 350 4: permeability level = 500
6: permeability level = 700 7: permeability level =1000 8:permeability level =1300



Product	Case size (mm)			Core size(mm)			Ic	Ac	Mass	Wa	WaAc
Code No.	OD	ID	HT	OD	ID	HT	cm	cm^2	grams	cm^2	cm^4
986545	11.2	5.2	5.7	9.8	6.5	4.5	2.56	0.06	1.2	0.21	0.01
110705	12.5	5.6	6.8	11	7	5	2.83	0.09	1.8	0.25	0.02
120805	14.2	6.4	7.3	12	8	4.5	3.14	0.08	1.8	0.32	0.02
120805	14.2	6.4	7.3	12	8	4.5	3.14	0.08	1.8	0.32	0.02
141005	15.5	8.5	6.8	14	10	5	3.77	0.09	2.3	0.56	0.05
140806	16.0	6	8.3	13.8	8.5	6	3.50	0.14	3.6	0.28	0.04
151006	17.9	8.5	9.2	15	10	6	3.93	0.13	3.7	0.57	0.07
161005	18.1	8.6	7.4	16	10	5	4.08	0.13	3.8	0.58	0.07
161108	18.3	8.3	10	16	11	8	4.24	0.17	5.3	0.54	0.09
161107	17.5	9.5	8.0	16	11.5	6.5	4.32	0.124	4.3	0.71	0.09
181305	21.1	9.9	7.3	18.5	13	5	4.95	0.12	4.2	0.77	0.09
181108	20.5	9.3	9.7	18	11	8	4.55	0.24	7.9	0.68	0.16
181110	20.4	9.4	12.2	18	11	10	4.55	0.30	9.9	0.68	0.21
191005	21	8.2	6.9	19	10	5	4.55	0.19	6.4	0.53	0.10
201205	21.7	10.7	7.9	20	12	5	5.02	0.17	6.2	0.90	0.15
201206	21.7	10.7	7.9	20	12	6	5.02	0.20	7.5	0.90	0.18
201208	22.3	10.2	10.4	20	12	8	5.02	0.27	10.0	0.82	0.22
201210	21.3	10.6	12	20	12	10	5.02	0.34	12.5	0.90	0.30
211106	23.5	9	8.5	21	11	6	5.02	0.26	9.4	0.64	0.00
211610	24.5	14	12.5	21	16	10	5.81	0.21	9.0	1.5	0.33
241215	26.0	10.5	17.0	24	12	15	5.65	0.77	31.6	0.86	0.66
261610	28.3	14	12.5	26	16	10	6.59	0.43	20.5	1.5	0.65
261910	28.7	16.5	12.6	26	19	10	7.07	0.30	15.3	2.1	0.64
302010	33	18.1	13	30	20	10	7.85	0.43	24.4	2.6	1.09
302015	33.7	17.7	17.7	30	20	15	7.85	0.64	36.5	2.5	1.57
302020	33.7	17.7	22.7	30	20	20	7.85	0.85	48.7	2.5	2.09
322010	34.2	18	13	32	20	10	8.16	0.51	30.4	2.5	1.30
322015	33.6	17.8	17	32	20	15	8.16	0.77	45.6	2.5	1.90

332310	33.6	17.8	22	33	23	10	8.79	0.43	27.3	2.5	1.06
332315	33.6	17.8	27	33	23	15	8.79	0.64	40.9	2.5	1.59
332320	33.6	17.8	32	33	23	20	8.79	0.85	54.6	2.5	2.12
332325	33.6	17.8	37	33	23	25	8.79	1.06	68.2	2.5	2.65
383020	42	26.5	24	38	30	20	10.68	0.68	53.0	5.5	3.75
402510	44.5	21	14	40	25	10	10.21	0.64	47.5	3.5	2.21
402515	44.5	21	19	40	25	15	10.21	0.96	71.2	3.5	3.31
403215	44.5	29.4	19.3	40	32	15	11.30	0.51	42.1	6.8	3.46
503215	54	29	19	50	32	15	12.87	1.15	107.8	6.6	7.58
503220	54	29	24	50	32	20	12.87	1.53	143.8	6.6	10.11
504025	54.5	35.3	29.7	50	40	25	14.13	1.06	109.6	9.8	10.40
583820	61.8	34.5	23.7	58	38	20	15.07	1.70	187.0	9.4	15.90
603525	66.2	29.8	29.6	60	35	25	14.92	2.66	289.2	7.0	18.51
644020	66	37	23	64	40	20	16.33	2.04	243.2	10.8	21.93
655025	68.2	46.7	28.6	65	50	25	18.06	1.59	210.1	17.1	27.30
806015	85	56	18.5	80	60	15	21.98	1.28	204.6	24.6	31.40
906020	95	56	24	90	60	20	23.55	2.55	438.4	24.6	62.81
1008020	104	76.4	23.4	100	80	20	28.26	1.70	350.7	45.8	77.93
1108025	114	76.4	28.6	110	80	25	29.83	3.19	694.1	45.8	146.12
1158020	119	76	24	115	80	20	30.62	2.98	664.9	45.4	134.95
1158525	119	81	29	115	85	25	31.40	3.19	730.6	51.5	164.25
1208525	125	81	29	120	85	25	32.19	3.72	873.7	51.5	191.63
12010025	125	96	29	120	100	25	34.54	2.13	535.8	72.4	153.81
13010030	136	96	34.5	130	100	30	36.11	3.83	1008.3	72.4	276.85
14010020	144	96	24.5	140	100	20	37.68	3.40	935.2	72.4	246.09
14010025	144	96	29	140	100	25	37.68	4.25	1169.0	72.4	307.62
17012525	174	116	29	170	120	25	45.53	5.31	1765.7	105.7	561.43
22219025	226	184.5	30.9	222	190	25	64.68	3.40	1605.5	267.3	908.96
22219030	226	184.5	35.9	222	190	30	64.68	4.08	1926.5	267.3	1090.75
24819830	252	188	35	248	198	30	70.02	6.38	3258.6	277.6	1769.57
26421430	268	210	35	264	214	30	75.05	6.38	3492.5	346.4	2207.98
27020030	274	196	35	270	200	30	73.79	8.93	4807.6	301.7	2692.76

Note: Ac: Effective iron section area, Lc: Magnetic path length , Wa: Core window area, WaAc: Area product, the product of the available window area Wa of the core multiplied by the effective cross-sectional area Ac.

Other specification possible according to customer's requirement

AL value and DCB for Different Permeability Level Core

Product Code No.	L1 type (250μ)		L2 type (350μ)		L4 type (500μ)		L6 type (700μ)		L7 type (1000μ)		L8 type (1300μ)	
	AL*	DCB**	AL	DCB	AL	DCB	AL	DCB	AL	DCB	AL	DCB
TN986545	0.077	98	0.108	81	0.155	53	0.217	37	0.3098	26	0.403	20
TN 110705	0.094	108	0.132	90	0.189	59	0.264	41	0.3778	29	0.491	23
TN 120805	0.077	120	0.107	100	0.153	65	0.214	45	0.3060	33	0.398	25
TN 141005	0.071	144	0.099	120	0.142	78	0.198	54	0.2833	39	0.368	30
TN 151006	0.102	150	0.143	125	0.204	81	0.286	56	0.4080	41	0.530	31
TN 161005	0.098	156	0.137	130	0.196	85	0.275	59	0.3923	42	0.510	33
TN 160805	0.142	144	0.198	120	0.283	78	0.396	54	0.5664	39	0.736	30
TN 161008	0.151	162	0.212	135	0.302	88	0.423	61	0.6044	44	0.786	34
TN 181305	0.074	189	0.104	158	0.148	102	0.208	71	0.2968	51	0.386	39
TN 181108	0.164	174	0.230	145	0.328	94	0.460	65	0.6566	47	0.854	36
TN 181110	0.205	174	0.287	145	0.410	94	0.574	65	0.8207	47	1.067	36
TN 191005	0.132	174	0.185	145	0.264	94	0.369	65	0.5276	47	0.686	36
TN 201205	0.106	192	0.149	160	0.213	104	0.298	72	0.4250	52	0.553	40
TN 201206	0.128	192	0.179	160	0.255	104	0.357	72	0.5100	52	0.663	40
TN 201208	0.170	192	0.238	160	0.340	104	0.476	72	0.6800	52	0.884	40
TN 201210	0.213	192	0.298	160	0.425	104	0.595	72	0.8500	52	1.105	40
TN 201010	0.283	180	0.396	150	0.566	98	0.793	68	1.1328	49	1.473	38
TN 20106.5	0.184	180	0.257	150	0.368	98	0.515	68	0.7356	49	0.956	38
TN 211106	0.159	192	0.223	160	0.319	104	0.446	72	0.6375	52	0.829	40

Product	L1 type (250μ)		L2 type (350μ)		L4 type (500μ)		L6 type (700μ)		L7 type (1000μ)		L8 type (1300μ)	
Code No.	AL	DCB	AL	DCB	AL	DCB	AL	DCB	AL	DCB	AL	DCB
TN 211610	0.115	222	0.161	185	0.230	120	0.322	83	0.4595	60	0.597	46
TN 221310	0.218	210	0.305	175	0.436	114	0.611	79	0.8727	57	1.135	44
TN 241215	0.425	216	0.595	180	0.850	117	1.190	81	1.7000	59	2.210	45
TN 261610	0.202	252	0.283	210	0.405	137	0.567	95	0.8095	68	1.052	53
TN 261910	0.132	270	0.185	225	0.264	146	0.370	101	0.5289	73	0.688	56
TN 302010	0.170	300	0.238	250	0.340	163	0.476	113	0.6800	81	0.884	63
TN 302015	0.255	300	0.357	250	0.510	163	0.714	113	1.0200	81	1.326	63
TN 302020	0.340	300	0.476	250	0.680	163	0.952	113	1.3600	81	1.768	63
TN 322010	0.196	312	0.275	260	0.392	169	0.549	117	0.7846	85	1.020	65
TN 322015	0.294	312	0.412	260	0.588	169	0.824	117	1.1769	85	1.530	65
TN 332310	0.152	336	0.213	280	0.304	182	0.425	126	0.6071	91	0.789	70
TN 332315	0.228	336	0.319	280	0.455	182	0.638	126	0.9107	91	1.184	70
TN 332320	0.304	336	0.425	280	0.607	182	0.850	126	1.2143	91	1.579	70
TN 332325	0.379	336	0.531	280	0.759	182	1.063	126	1.5179	91	1.973	70
TN 383020	0.200	408	0.280	340	0.400	221	0.560	153	0.8000	111	1.040	85
TN 402510	0.196	390	0.275	325	0.392	211	0.549	146	0.7846	106	1.020	81
TN 402515	0.294	390	0.412	325	0.588	211	0.824	146	1.1769	106	1.530	81
TN 403215	0.142	432	0.198	360	0.283	234	0.397	162	0.5667	117	0.737	90
TN 503215	0.280	492	0.392	410	0.560	267	0.784	185	1.1195	133	1.455	103
TN 503220	0.373	492	0.522	410	0.746	267	1.045	185	1.4927	133	1.940	103
TN 504025	0.236	540	0.331	450	0.472	293	0.661	203	0.9444	146	1.228	113

Product	L1 type (250μ)		L2 type (350μ)		L4 type (500μ)		L6 type (700μ)		L7 type (1000μ)		L8 type (1300μ)	
Code No.	AL	DCB	AL	DCB	AL	DCB	AL	DCB	AL	DCB	AL	DCB
TN 583820	0.354	576	0.496	480	0.708	312	0.992	216	1.4167	156	1.842	120
TN 603525	0.559	570	0.783	475	1.118	309	1.566	214	2.2368	154	2.908	119
TN 644020	0.392	624	0.549	520	0.785	338	1.098	234	1.5692	169	2.040	130
TN 655025	0.277	690	0.388	575	0.554	374	0.776	259	1.1087	187	1.441	144
TN 806015	0.182	840	0.255	700	0.364	455	0.510	315	0.7286	228	0.947	175
TN 906020	0.340	900	0.476	750	0.680	488	0.952	338	1.3600	244	1.768	188
TN 1008020	0.189	1080	0.264	900	0.378	585	0.529	405	0.7556	293	0.982	225
TN 1108025	0.336	1140	0.470	950	0.671	618	0.939	428	1.3421	309	1.745	238
TN 1158020	0.305	1170	0.427	975	0.610	634	0.854	439	1.2205	317	1.587	244
TN 1158525	0.319	1200	0.446	1000	0.638	650	0.893	450	1.2750	325	1.658	250
TN 1208525	0.363	1230	0.508	1025	0.726	666	1.016	461	1.4512	333	1.887	256
TN 12010025	0.193	1320	0.270	1100	0.386	715	0.541	495	0.7727	358	1.005	275
TN 13010030	0.333	1380	0.466	1150	0.665	748	0.931	518	1.3304	374	1.730	288
TN 14010020	0.283	1440	0.397	1200	0.567	780	0.793	540	1.1333	390	1.473	300
TN 14010025	0.354	1440	0.496	1200	0.708	780	0.992	540	1.4167	390	1.842	300
TN 17012525	0.366	1740	0.513	1450	0.733	943	1.026	653	1.4655	471	1.905	363
TN 22219025	0.165	2472	0.231	2060	0.330	1339	0.462	927	0.6602	670	0.858	515
TN 22219030	0.198	2472	0.277	2060	0.396	1339	0.555	927	0.7922	670	1.030	515
TN 24819830	0.286	2676	0.400	2230	0.572	1450	0.800	1004	1.1435	725	1.487	558

NOTE: *AL -- $\mu H/N^2$, ** DCB : Ampere turns value when inductance decreases to 50%