Nanocrystalline Cores for Inverter Power Supply Transformer

Special features

High Bs value (1.23T) and smaller core size

Low core loss and temperature increasing

High Curie temperature and good temperature stability

High permeability and less wire winding turns and exciting current

Application

High and middle frequency main transformer cores

High power inverter power supply

Switched mode power supply

High voltage transformer

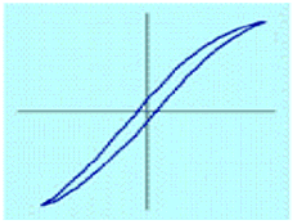
Pulse transformer

Property

Main properties	Nanocrystalline	Fe-based amorphous	Power Ferrite core
Saturation flux density Bs (T)	1.25	1.56	0.5
Residual flux Br (T)	~0.40	~0.80	~0.20
Permeability |μ| (20KHz) (Gs / Oe)	~40000	~15000	2500
Permeability |μ| (100KHz) (Gs / Oe)	~20000	~5000	2500
Iron loss (5kHz/1.0T) (W/Kg)	12	24	-
Iron loss (10kHz/0.8T) (W/Kg)	22	40	-
Iron loss (20KHz/0.5T) (W/Kg)	25	40	-
Iron loss (20KHz/0.3T) (W/Kg)	10	16	30
Iron loss (50KHz/0.2T) (W/Kg)	20	40	46
Iron loss (100KHz/0.1T) (W/Kg)	15	21	18
Iron loss (200KHz/0.1T) (W/Kg)	30	50	46
Saturation magnetostriction λ_S (10^{-6})	2	28	4
Resistivity (μΩ·m)	80	130	5×10^6
Curie temperature (℃)	570	410	230
Stacking factor	0.75	0.84	-
Mass density (kg/m^3)	7.25	7.25	4.8

Specification

Flat BH loop F



Product Code Name:

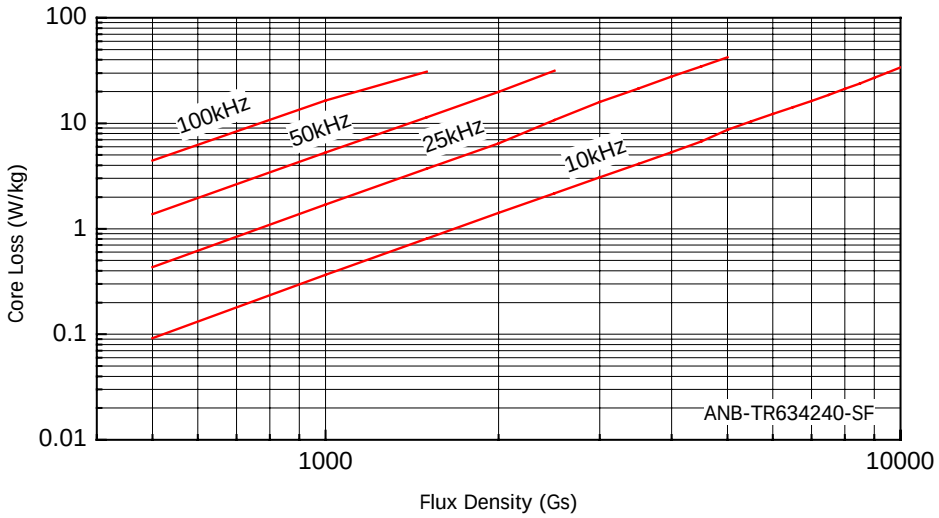
ANB- TR 120 80 20 - S F
ANB- TR 120 80 20 – AF
ANB- TR 120 80 20 - AR

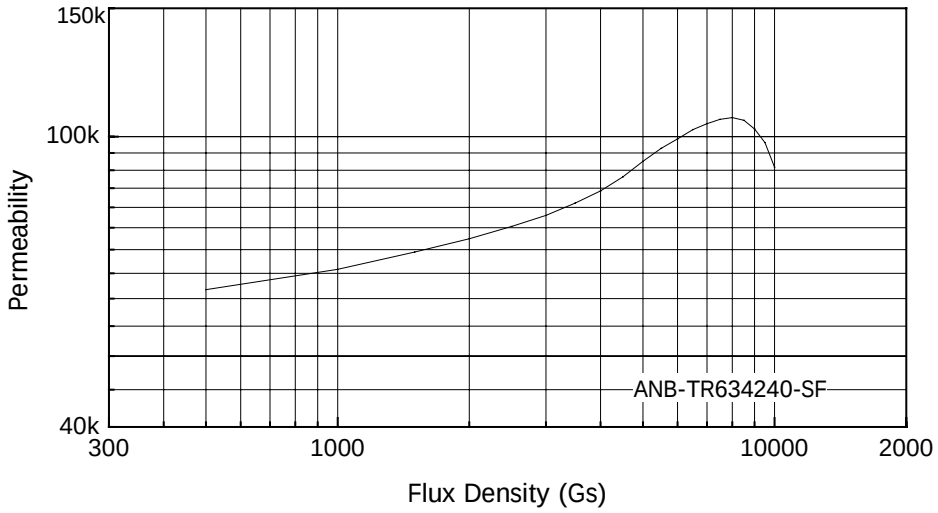
ANB: Company core code No. TR: Toroidal transformer nanocrystalline core
120: core OD, 80: core ID, 20: core HT in mm
S: Fe-based nanocrystalline thin slit strip core F: Flat BH loop
A: Fe-based nanocrystalline thick strip core R: Round BH loop

Product	Case size (mm)			Core size(mm)			Ic	Ac	Core weight	Wa	AcWa
Code No.	OD	ID	HT	OD	ID	HT	(cm)	(cm^2)	Grams	cm^2	Cm^4
332310	33.6	17.8	22	33	23	10	8.79	0.39	25	2.49	0.96
332315	33.6	17.8	27	33	23	15	8.79	0.58	37	2.49	1.44
332320	33.6	17.8	32	33	23	20	8.79	0.77	49	2.49	1.92
332325	33.6	17.8	37	33	23	25	8.79	0.96	61	2.49	2.40
383020	42	26.5	24	38	30	20	10.68	0.62	48	5.52	3.40
402510	44.5	21	14	40	25	10	10.21	0.58	43	3.46	2.00
402515	44.5	21	19	40	25	15	10.21	0.87	64	3.46	3.00
403215	44.5	29.4	19.3	40	32	15	11.30	0.46	38	6.79	3.14
503215	54	29	19	50	32	15	12.87	1.04	97	6.61	6.87
503220	54	29	24	50	32	20	12.87	1.39	129	6.61	9.16
504025	54.5	35.3	29.7	50	40	25	14.13	0.96	99	9.79	9.43
583820	61.8	34.5	23.7	58	38	20	15.07	1.54	168	9.35	14.40
603525	66.2	29.8	29.6	60	35	25	14.92	2.41	260	6.97	16.77
644020	66	37	23	64	40	20	16.33	1.85	219	10.75	19.87
655025	68.2	46.7	28.6	65	50	25	18.06	1.44	189	17.13	24.74
906020	95	56	24	90	60	20	23.55	2.31	394	24.63	56.90
1008020	104	76.4	23.4	100	80	20	28.26	1.54	316	45.84	70.59
1108025	114	76.4	28.6	110	80	25	29.83	2.89	624	45.84	132.39
1158020	119	76	24	115	80	20	30.62	2.70	598	45.36	122.25
1158525	119	81	29	115	85	25	31.40	2.89	657	51.53	148.82
1208525	125	81	29	120	85	25	32.19	3.37	786	51.53	173.60
12010025	125	96	29	120	100	25	34.54	1.93	482	72.38	139.33
13010030	136	96	34.5	130	100	30	36.11	3.47	907	72.38	250.80
14010020	144	96	24.5	140	100	20	37.68	3.08	841	72.38	222.93
14010025	144	96	29	140	100	25	37.68	3.85	1052	72.38	278.66
17012525	174	116	29	170	120	25	45.53	4.81	1589	105.68	508.64
22219030	226	184.5	35.9	222	190	30	64.68	3.70	1733	267.34	988.09

Note: Wa: Core window area for wire winding, WaAc: Area product

Material Characteristic Curves





Fe-based Amorphous Toroidal Cores for Transformer

Special features

High Bs value (1.54T) and smaller core size
Low Remanence Br/Bs <0.25
High permeability 6000~10000 with better DC bias enduring ability
High Curie temperature and good temperature stability

Application

Middle frequency main transformer core or Pulse transformer
Common mode choke core

Specification and Property

ANB-AM1208020-L8K:

AM: Fe-based amorphous core L8K: permeability level =8000