

Inductor Design

Material	OD
CK(MegaFlux)	508
STACKING	1

Core Dimension					Path length(cm)	12.73
	OD(max)	ID(min)	HT(max)	Stack HT	Cross Section Area(cm²)	1.25
Before coating(mm)	50.8	31.75	13.46	13.46	Window Area(cm²)	7.50
After coating(mm)	51.7	30.9	14.35	14.35	Volume(cc)	15.913

Design Parameter					
Turns	72	Winding Factor(%)	48	DC R(mΩ) @ 20℃	15.75
Wire Area(mm²)	5.00	Rated Current (A)	25.0	Temp of Copper(℃)	20
Wire Eff Area(mm²)	5.00	Peak Current (A)	28.8	DC R(mΩ) @ T(℃)	15.75
Wire length/T(cm)	4.95	Frequency(kHz)	25	Copper loss(Watt)	9.85
Current Density	5.00 A/mm²	Current Ripple Rate(%)	30%	Required Inductance(uH)	190.0
Wire Dia(mm)	2.52	Ripple Current(ΔI)	7.50	Copper Weight(g)	191.6
Surface Area(cm²)	64.2	Graph range	0 A	32 A	

Total Loss & Delta T				
Perm	Total Loss(w)		Delta T	
	DC	AC	DC	AC
26	12.35	20.28	80	121
50	11.86	18.05	76	110
60	11.86	18.05	76	110
75	11.92	18.93	78	114
90	11.92	18.93	78	114
	#N/A	#N/A	#N/A	#N/A
	#N/A	#N/A	#N/A	#N/A

DC Bias Characteristics

A	H(Oe)	26 μ	50 μ	60 μ	75 μ	90 μ	μ	μ
0	-	165.9	311.0	378.4	471.7	565.1	#N/A	#N/A
6	44	163.3	309.8	363.7	431.5	478.3	#N/A	#N/A
13	89	158.4	283.4	309.6	335.3	331.6	#N/A	#N/A
19	133	151.1	244.7	249.2	250.9	226.4	#N/A	#N/A
25	178	142.1	203.0	196.3	188.6	159.8	#N/A	#N/A
29	204	136.2	179.4	170.0	160.4	132.2	#N/A	#N/A
Lrated / Linitia		86%	65%	52%	40%	28%		

Core Loss

perm	ΔI	L@Irated	Flux Density(G)		Core Loss(mW/cc)		Core Loss(W)	
			DC(ΔB/2)	AC(ΔB)	DC	AC	DC	AC
26	10.0	142	792	1,583	157	655	2.50	10.43
50	7.0	203	792	1,583	114	515	1.81	8.20
60	7.3	196	792	1,583	114	515	1.81	8.20
75	7.6	189	792	1,583	130	571	2.08	9.08
90	8.9	160	792	1,583	130	571	2.08	9.08
					#N/A	#N/A	#N/A	#N/A
					#N/A	#N/A	#N/A	#N/A



