

SIFERRIT Materials

Material properties (continued)

Preferred application			Power transformers				
Material			N 59	N 49	N 53	N 82 ⁴⁾	N 62
Base material			MnZn	MnZn	MnZn	MnZn	MnZn
	Symbol	Unit					
Initial permeability ($T = 25\text{ °C}$)	μ_i		850 $\pm 25\%$	1300 $\pm 25\%$	1700 $\pm 25\%$	1900 $\pm 25\%$	1900 $\pm 25\%$
Flux density ($H = 1200\text{ A/m}$, $f = 10\text{ kHz}$)	$B_S(25\text{ °C})$	mT	460	460	490	490	500
	$B_S(100\text{ °C})$	mT	370	370	420	415	410
Coercive field strength ($f = 10\text{ kHz}$)	$H_c(25\text{ °C})$	A/m	60	55	26	17	18
	$H_c(100\text{ °C})$	A/m	50	45	16	11	11
Typical frequency range		kHz	500 ... 1500	300 ... 1000	16 ... 200	16 ... 300	16 ... 200
Hysteresis material constant	η_B	$10^{-6}/\text{mT}$	—	—	—	—	—
Curie temperature	T_C	$^{\circ}\text{C}$	> 240	> 240	> 240	> 240	> 240
Mean value of α_F at 20 ... 55 $^{\circ}\text{C}$		$10^{-6}/\text{K}$	—	—	—	—	—
Density (typical values)		kg/m^3	4750	4750	4800	4800	4800
Relative core losses (typical values)	P_V						
25 kHz, 200 mT, 100 $^{\circ}\text{C}$		mW/g			20	14	16
		mW/cm^3			100	69	80
100 kHz, 200 mT, 100 $^{\circ}\text{C}$		mW/g			125	84	105
		mW/cm^3			625	421	525
300 kHz, 100 mT, 100 $^{\circ}\text{C}$		mW/g			120	135	88
	mW/cm^3			600	670	440	
500 kHz, 50 mT, 100 $^{\circ}\text{C}$	mW/g		39	24			
	mW/cm^3		180	120			
1 MHz, 50 mT, 100 $^{\circ}\text{C}$	mW/g		110	115			
	mW/cm^3		510	560			
Resistivity	ρ	Ωm	26	11	6	11	4
Core shapes			EFD	RM, Ring, EFD, ER ELP	E, U	U, UR	ETD, E, U
Other material properties (graphs) see page			78	81	84	87	90

4) Preliminary data