

查询"M13"供应商



## **Ferrites and accessories**

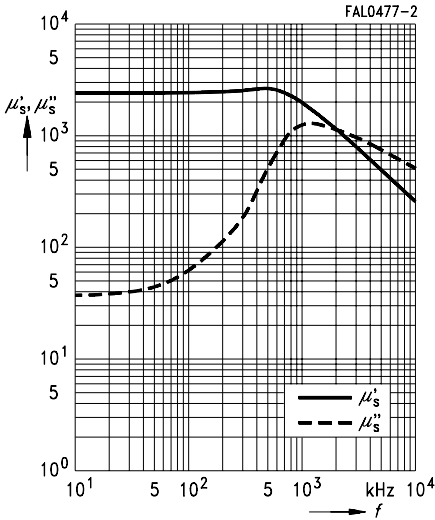
SIFERRIT material M13

Date: September 2006

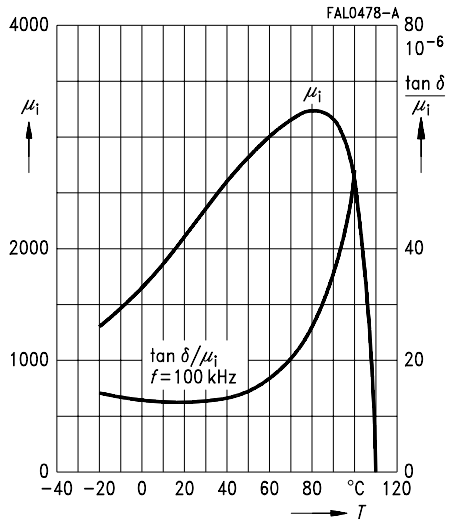
**SIFERRIT materials**
**M13** [查询"M13"供应商](#)
**Material properties**

Preferred application			Inductors for line attenuation
Material			M13
Base material			NiZn
Color code (adjuster)			—
	Symbol	Unit	
Initial permeability (T = 25 °C)	$\mu_i$		2300 ±25%
Meas. field strength	H	A/m	1200
Flux density (near saturation) (f = 10 kHz)	B <sub>S</sub> (25 °C) B <sub>S</sub> (100 °C)	mT mT	280 135
Coercive field strength (f = 10 kHz)	H <sub>c</sub> (25 °C) H <sub>c</sub> (100 °C)	A/m A/m	12 8
Optimum frequency range	f <sub>min</sub> f <sub>max</sub>	MHz	0.001 ... 0.1
Relative at f <sub>min</sub> loss factor at f <sub>max</sub>	$\tan \delta / \mu_i$	10 <sup>-6</sup> 10 <sup>-6</sup>	<5 <20
Hysteresis material constant	$\eta_B$	10 <sup>-6</sup> /mT	<4.0
Curie temperature	T <sub>C</sub>	°C	>105
Relative temperature coefficient at 25 ... 55 °C at 5 ... 25 °C	$\alpha_F$	10 <sup>-6</sup> /K	— —
Mean value of $\alpha_F$ at 25 ... 55 °C		10 <sup>-6</sup> /K	3.7
Density (typical values)		kg/m <sup>3</sup>	5200
Disaccommodation factor at 25 °C	DF	10 <sup>-6</sup>	—
Resistivity	$\rho$	Ωm	10 <sup>5</sup>
Core shapes			Toroid, Double-aperture

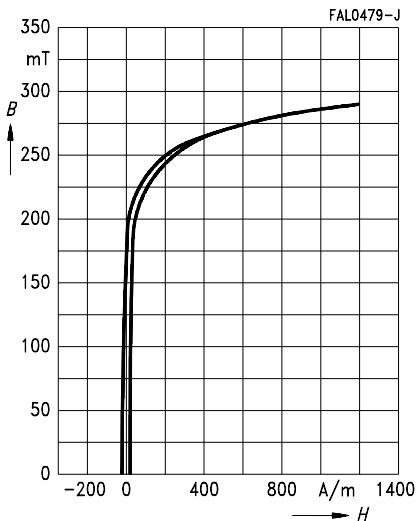
Complex permeability  
versus frequency  
(measured on R10 toroids,  $\hat{B} \leq 0.25$  mT)



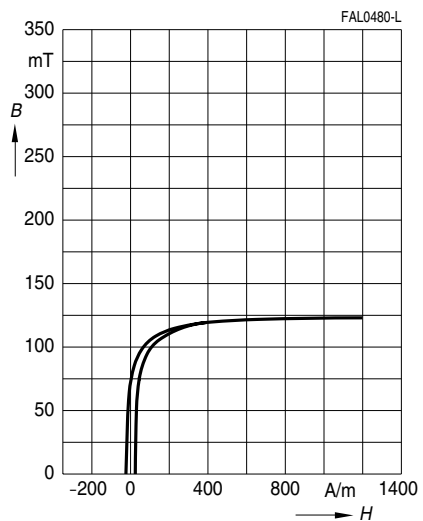
Initial permeability  $\mu_i$  and relative loss factor  
 $\tan \delta / \mu_i$  versus temperature  
(measured on R25 toroids,  $\hat{B} \leq 0.25$  mT)



Dynamic magnetization curves  
(typical values)  
( $f = 10$  kHz,  $T = 25$  °C)



Dynamic magnetization curves  
(typical values)  
( $f = 10$  kHz,  $T = 100$  °C)



**SIFERRIT materials****Cautions and warnings****General**

Based on IEC 60401-3, the data specified here are typical data for the material in question, which have been determined principally on the basis of toroids (ring cores).

The purpose of such characteristic material data is to provide the user with improved means for comparing different materials.

There is no direct relationship between characteristic material data and the data measured using other core shapes and/or core sizes made of the same material. In the absence of further agreements with the manufacturer, only those specifications given for the core shape and/or core size in question are binding.

**Effects of core combination on  $A_L$  value**

Stresses in the core affect not only the mechanical but also the magnetic properties. It is apparent that the initial permeability is dependent on the stress state of the core. The higher the stresses are in the core, the lower is the value for the initial permeability. Thus the embedding medium should have the greatest possible elasticity.

For detailed information see Data Book 2007, chapter "General – Definitions, 8.2".

**Heating up**

Ferrites can run hot during operation at higher flux densities and higher frequencies.

**NiZn-materials**

The magnetic properties of NiZn-materials can change irreversible in high magnetic fields.

## Important notes

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