Fair-Rite Products Corp.
Your Signal Solution®
Ferrite Components for the Electronics Industry
Fair-Rite Products Corp. PO Box J,One Commercial Row, Wallkill, NY 12589-0288
Phone: (888) 324-7748 www.fair-rite.com

Fair-Rite Product's Catalog
Part Data Sheet, 0444164951
Printed: 2014-05-13

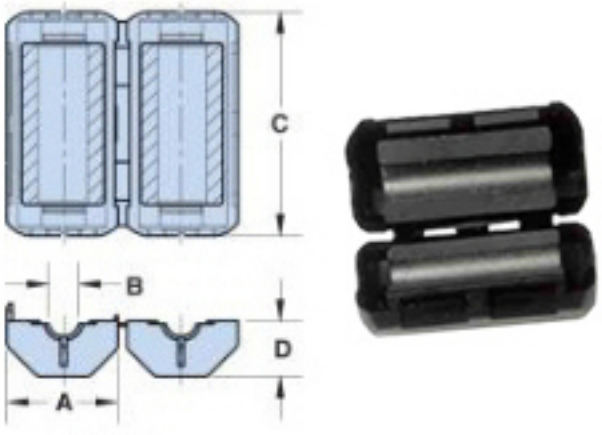

Figure 1

Part Number:	0444164951
Frequency Range:	Broadband Frequencies 25-300 MHz (43 & 44 materials)
Description:	44 ROUND CABLE CORE ASSEMBLY
Application:	Suppression Components
Where Used:	Cable Component
Part Type:	Round Cable Snap-Its

Mechanical Specifications

Weight:	17.000 (g)

Part Type Information

Round cable snap-its can easily accommodate round cables or bundled wires with diameters from 2.5 mm (.100") to 25.4 mm (1.000"). These assemblies are available in four ferrite material classes to suppress differential or common-mode conducted EMI from 1 MHz into the GHz region. The polypropylene cases are meeting the RoHS restrictions of hazardous substances and have a flammability rating of UL94 V-0.

-Round cable snap-it assemblies are controlled for impedances only. Minimum impedance values are specified for the + marked frequencies. The minimum impedance is typically the listed impedance less 20%.

-Single turn impedance tests for the 31, 43, 44 and 46 material are performed on the 4193A Vector Impedance Analyzer. The 61 material parts are tested on the 4291A RF Impedance Analyzer and 75 material parts are tested on the 4285A LCR Meter. Cores are tested with the shortest practical wire length.

-Many of the snap-it parts have round core equivalents. See Round Cable EMI Suppression Cores section of our catalog.

-'B' Dimension is the core Dimension.

-Round Cable Snap-it Kits are available for each of the four suppression materials. 31 Snap-It Kit (0199000030), 43 Snap-It Kit (0199000031), 46 Core and Snap-It Kit (0199000032) and 61 Snap-It Kit (0199000033).

-Explanation of Part Numbers: Digits 1 & 2 = product class and 3& 4 = material grade.

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Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	17.30	-	0.680	-
B	5.10	-	0.201	-
C	36.20	-	1.420	-
D	8.40	-	0.331	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)	
10 MHz	90
25 MHz+	144
100 MHz+	245
250 MHz	257

Electrical Properties	

Land Patterns

V	W ref	X	Y	Z
- -	- -	- -	- -	- -

Winding Information

Turns Tested	Wire Size	1st Wire Length	2nd Wire Length
-	-	-	-

Reel Information

Tape Width mm	Pitch mm	Parts 7 " Reel	Parts 13 " Reel	Parts 14 " Reel
-	-	-	-	-

Package Size

Pkg Size
- (-)

Connector Plate

# Holes	# Rows
-	-

Legend

+ Test frequency
Preferred parts, the suggested choice for new designs,have shorter lead times and are more readily available.
The column H(Oe) gives for each bead the calculated dc bias field in oersted for 1 turn and 1 ampere direct current. The actual dc H field in the application is this value of H times the actual NI (ampere-turn) product. For the effect of the dc bias on the impedance of the bead material, see figures 18-23 in the application note How to choose Ferrite Components for EMI Suppression.
A ½ turn is defined as a single pass through a hole.

Σl/A - Core Constant
l_e: Effective Path Length
A_e: Effective Cross-Sectional Area
V_e: Effective Core Volume
A_L - Inductance Factor $\left(\frac{L}{N^2}\right)$
NI - Value of dc Ampere-turns
N/AWG - Number of Turns/Wire Size for Test Coil

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Ferrite Material Constants

Specific Heat	0.25 cal/g/°C
Thermal Conductivity	**3.5 - 4.5 mW/cm** - °C
Coefficient of Linear Expansion	8 - $10x10^{-6}$/°C
Tensile Strength	4.9 kgf/mm²
Compressive Strength	42 kgf/mm²
Young's Modulus	$15x10^3$ kgf/mm²
Hardness (Knoop)	650
Specific Gravity	≈ 4.7 g/cm³

The above quoted properties are typical for Fair-Rite MnZn and NiZn ferrites.

See next page for further material specifications.

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ISO 9001 Registered · TS 16949 Registered · Pb · RoHS Material Declaration

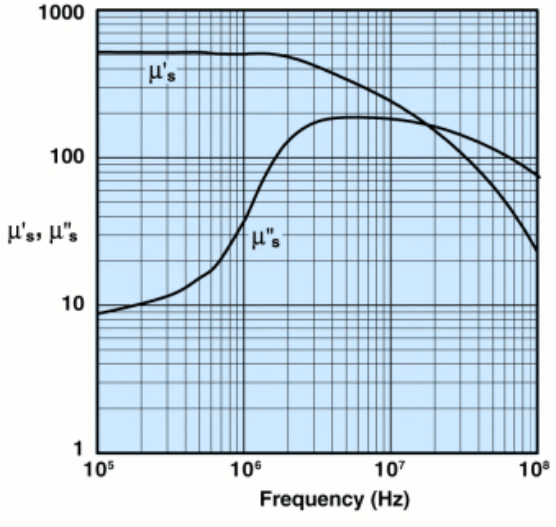
A NiZn ferrite developed to combine a high suppression performance, from 30 MHz to 500 MHz, with a very high dc resistivity.

SM beads, PC beads, wound beads, round cable snap-its, and connector EMI suppression plates are all available in 44 material.

44 Material Characteristics:

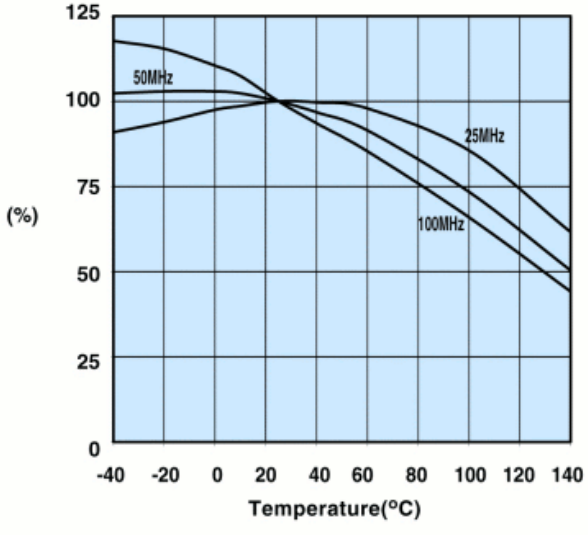
Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ_i	500
Flux Density @ Field Strength	gauss oersted	B H	3000 10
Residual Flux Density	gauss	B_r	1100
Coercive Force	oersted	H_c	0.45
Loss Factor @ Frequency	10^{-6} MHz	$\tan\delta/\mu_i$	125 1.0
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		0.75
Curie Temperature	°C	T_c	>160
Resistivity	Ω cm	ρ	$1x10^9$

Complex Permeability vs. Frequency



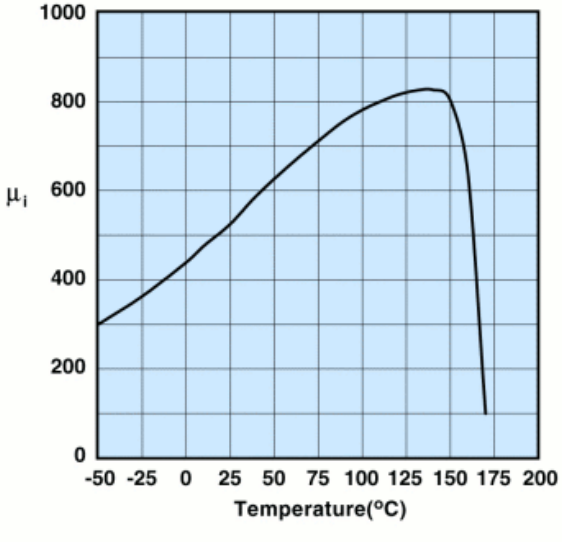
Measured on a 17/10/6mm toroid
using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



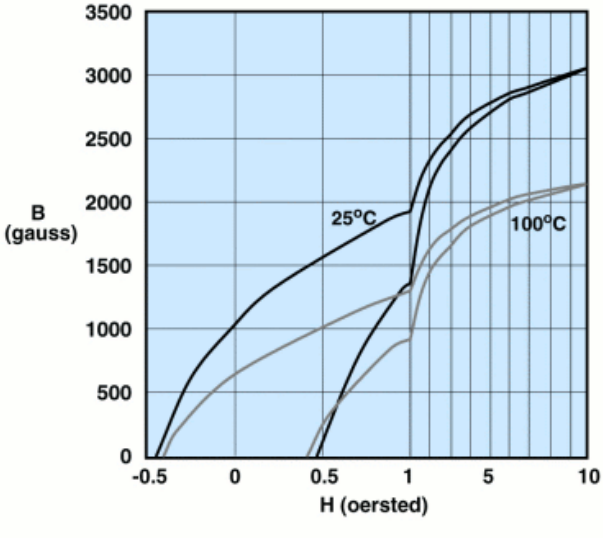
Measured on a 2644000301 using the HP4291A.

Initial Permeability vs. Temperature



Measured on a 17/10/6mm toroid at 100kHz.

Hysteresis Loop



Measured on a 17/10/6mm toroid at 10kHz.

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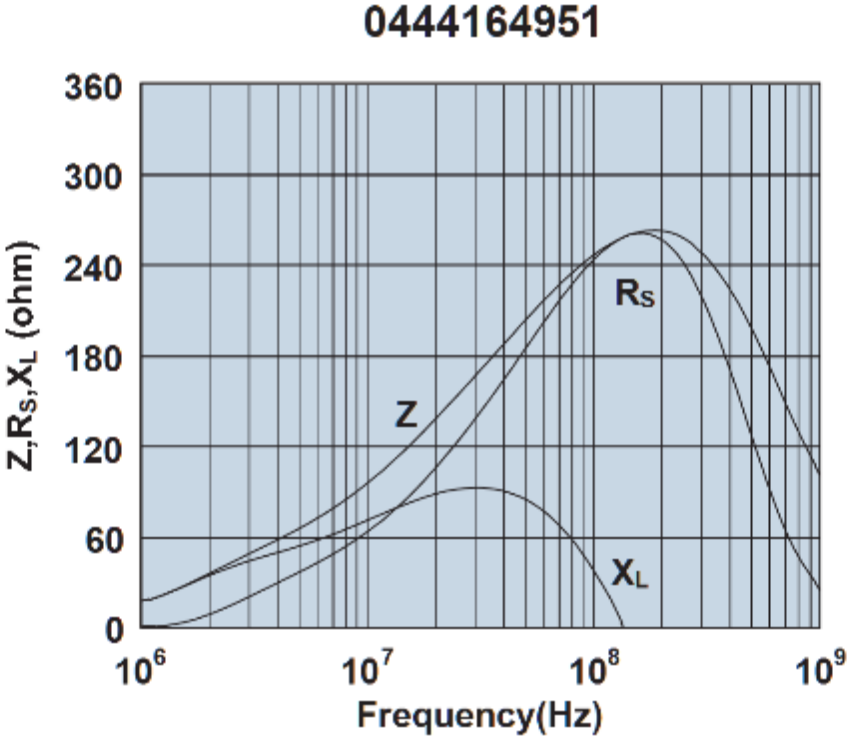

Impedance, reactance, and resistance vs. frequency.