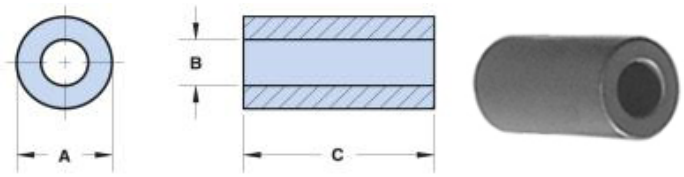


BOOKMARK PART/PAGE

Pb RoHS Certificate of Compliance RoHS Material Declaration MSDS

Part Number: 2643006302
Generic Name:
Frequency Range: Broadband Frequencies 25-300 MHz (43 material)
Description: 43 SHIELD BEAD
Application: Suppression Components
Where Used: Board Component
Part Type: EMI Suppression Beads

Part Type Information

Fair-Rite offers a broad selection of ferrite EMI suppression beads with guaranteed minimum impedance specifications.

• Beads with a "1" as the last digit of the part number are not burnished. Parts that are burnished to break the sharp edges have a "2" as the last digit.

• Upon request beads can be supplied with a Parylene coating. The last digit of the Parylene coated part is a "4". The minimum coating thickness beads is 0.005 mm (.0002").

• 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".

• Suppression beads 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 73 and 43 material beads are performed on the 4193A Vector Impedance Analyzer. The 61 material beads are tested on the 4291A RF Impedance Analyzer. Beads are tested with the shortest practical wire length.

• Performance curves for these suppression components can be viewed by clicking on the part number in the chart.

• For any EMI suppression bead requirement not listed here, feel free to contact our customer service for availability and pricing.

• The "C" dimension, the bead length, can be modified to suit specific applications.

• Our "Shield Bead Kit" (part number 0199000019) contains a selection of these beads.

• Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1= not burnished, 2 = burnished and 4 = Parylene coated.

Mechanical Specifications

Weight: 2.20 (g)

Chart Legend
+ Test frequency
●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.

Dim	mm	mm tol	nominal inch	inch misc.
A	9.50	±0.25	0.375	_
B	4.75	+0.30	0.193	_
C	10.40	±0.25	0.410	_
D	_	_	_	_
E	_	_	_	_
F	_	_	_	_
G	_	_	_	_
H	_	_	_	_
J	_	_	_	_
K	_	_	_	_

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
_	_	_	_	_

Pkg Size
_

Connector Plate	
# Holes	# Rows
_	_

Cable Information			
Max Diameter	Max Dimension	Solid Equivalent	Flat Cable Cores
_	_	_	_

Electrical Specifications

Typical Impedance (Ω)	
10 MHz	34
25 MHz+	53
100 MHz+	80
250 MHz	92

Electrical Properties	
H(Oe)	.60

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/mm^2
Compressive Strength	42 kgf/mm^2
Young's Modulus	15x10^3 kgf/mm^2
Hardness (Knoop)	650
Specific Gravity	≈ 4.7 g/cm^3

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

43 Material Characteristics:

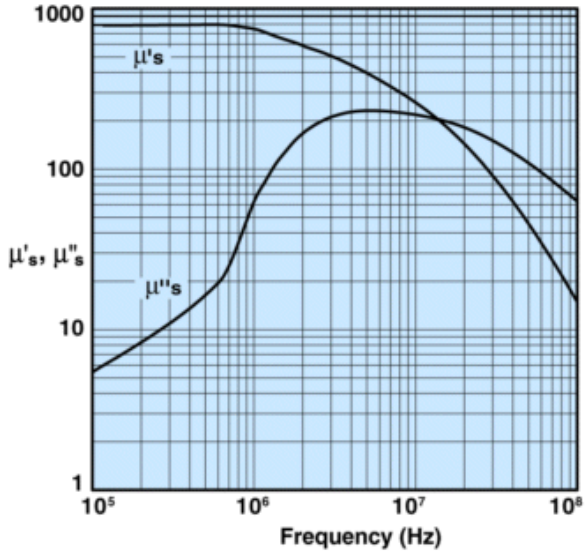
This NiZn is our most popular ferrite for suppression of conducted

This NiZn is our most popular ferrite for suppression of conducted EMI from 20 MHz to 250 MHz. This material is also used for inductive applications such as high frequency common-mode chokes.

EMI suppression beads, beads on leads, SM beads, multi-aperture cores, round cable EMI suppression cores, round cable snap-its, flat cable EMI suppression cores, flat cable snap-its, miscellaneous suppression cores, bobbins, and toroids are all available in 43 material.

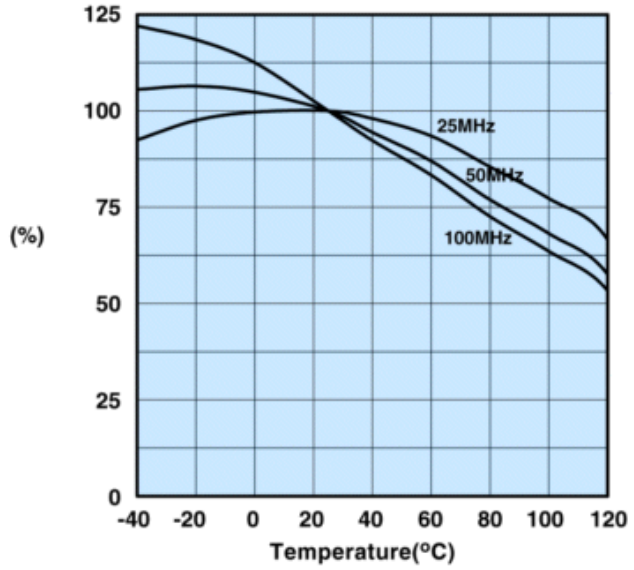
Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ_i	800
Flux Density @ Field Strength	gauss oersted	B H	2900 10
Residual Flux Density	gauss	B_r	1300
Coercive Force	oersted	H_c	0.45
Loss Factor @ Frequency	10^{-6} MHz	$\tan\delta/\mu_i$	250 1.0
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		1.25
Curie Temperature	°C	T_c	>130
Resistivity	Ω cm	ρ	$1x10^5$

Complex Permeability vs. Frequency



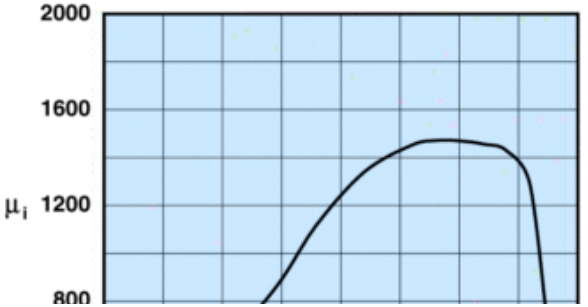
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature

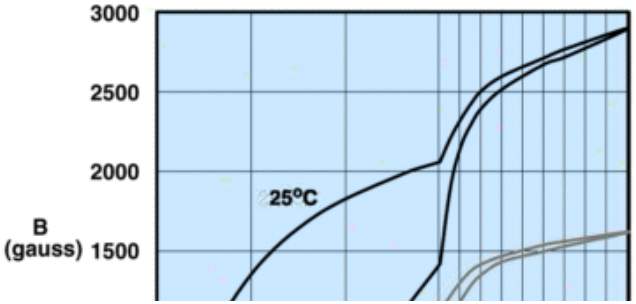


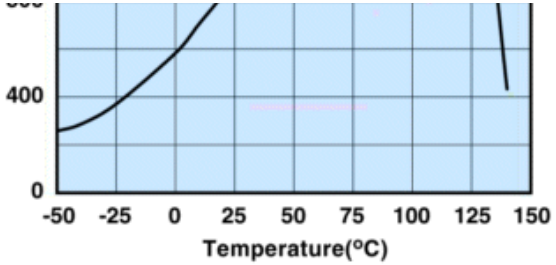
Measured on a 2643000301 using the HP4291A.

Initial Permeability vs. Temperature

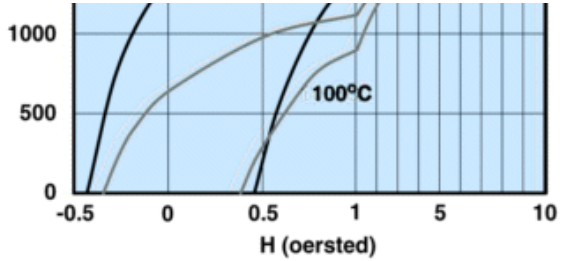


Hysteresis Loop



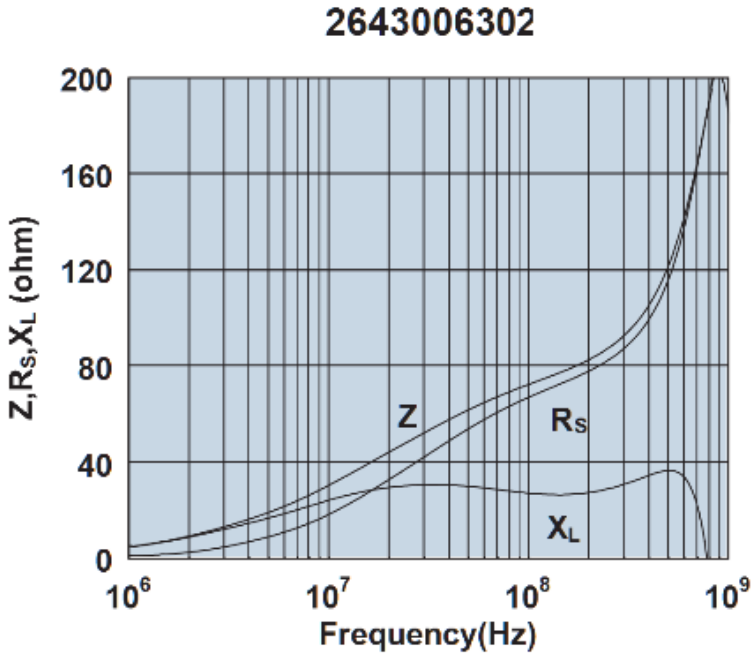


Measured on a 17/10/6mm toroid at 100kHz.



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

Impedance Curve



Impedance, reactance, and resistance vs. frequency.

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