

Part Number: 2743019447  
 Frequency Range: Broadband Frequencies 25-300 MHz (43 & 44 materials)  
 Description: BDS2.9/3.1/4.7-43-1 43 SM BEAD  
 Application: Suppression Components  
 Where Used: Board Component  
 Part Type: SM Beads (Differential-Mode)  
 Preferred Part: ✓

**Part Type Information**

**Mechanical Specifications**

Weight: 0.15 (g)  
 View Chart Legend

Dim	mm	mm tol	nominal inch	inch misc.	Land Patterns					Winding Information			
					V	W (ref)	X	Y	Z	Turns Tested	Wire Size	1st Wire Length	2nd Wire Length
A	2.85	±0.20	0.112	-	1.000 0.040	4.000 0.157	1.800 0.071	3.000 0.118	-	-	-	-	-
B	3.05	±0.10	0.120	-	<b>Reel Information</b> Tape Width mm: 12, Pitch mm: 8, Parts 7" Reel: -, Parts 13" Reel: 2800, Parts 14" Reel: -					<b>Pkg Size</b>			
C	5.10	-0.85	0.184	-						<b>Connector Plate</b>			
D	1.50	±0.50	0.059	-					# Holes	# Rows			
E	-	-	-	-	<b>Cable Information</b> Max Diameter, Max Dimension, Solid Equivalent, Flat Cable Cores								
F	-	-	-	-									
G	-	-	-	-									
H	-	-	-	-									
J	-	-	-	-									
K	-	-	-	-									

**Electrical Specifications**

Typical Impedance (Ω)	
10 MHz	18
25 MHz <sup>+</sup>	29
100 MHz <sup>+</sup>	47
250 MHz	49

Electrical Properties	
Max Rdc(mΩ)	.80

**Ferrite Material Constants**

Specific Heat	0.25 cal/g <sup>o</sup> C
Thermal Conductivity	10x10 <sup>-3</sup> cal/sec/cm <sup>o</sup> C
Coefficient of Linear Expansion	8 - 10x10 <sup>-6</sup> / <sup>o</sup> C
Tensile Strength	4.9 kgf/mm <sup>2</sup>
Compressive Strength	42 kgf/mm <sup>2</sup>
Young's Modulus	15x10 <sup>3</sup> kgf/mm <sup>2</sup>
Hardness (Knoop)	650
Specific Gravity	≈ 4.7 g/cm <sup>3</sup>

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

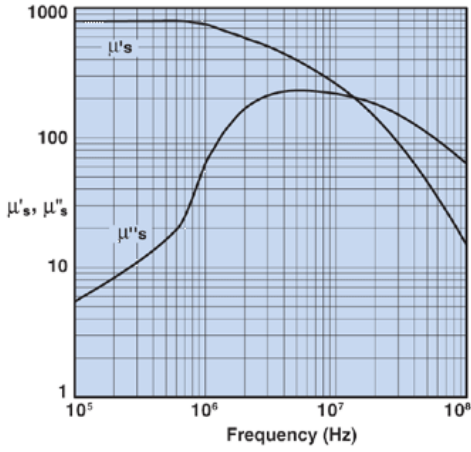
**43 Material Specifications:**

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.

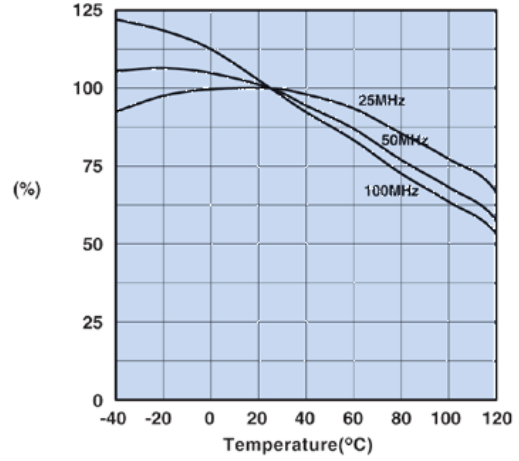
Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ <sub>i</sub>	800
Flux Density @ Field Strength	gauss oersted	B H	2900 10
Residual Flux Density	gauss	B <sub>r</sub>	1300
Coercive Force	oersted	H <sub>c</sub>	0.45
Loss Factor @ Frequency	10 <sup>-3</sup> MHz	tan δ/μ <sub>i</sub>	250 1.0
Temperature Coefficient of Initial Permeability (20 -70 <sup>o</sup> C)	%/ <sup>o</sup> C		1.25
Curie Temperature	<sup>o</sup> C	T <sub>c</sub>	>130

**Complex Permeability vs. Frequency**



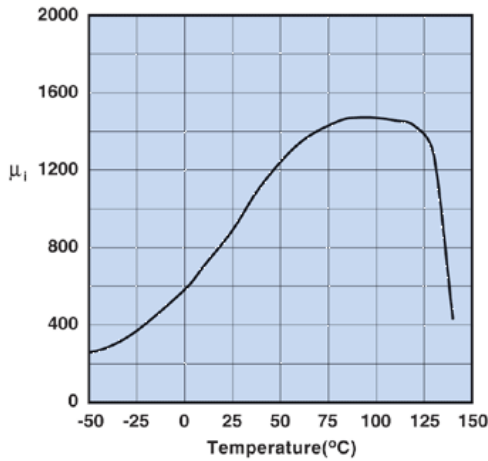
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

**Percent of Original Impedance vs. Temperature**



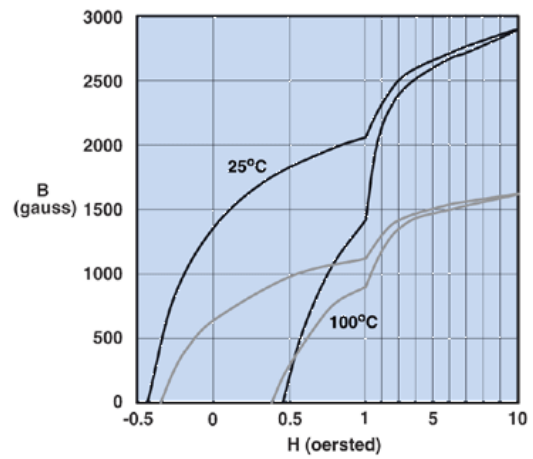
Measured on a 2643000301 using the HP4291A.

**Initial Permeability vs. Temperature**



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

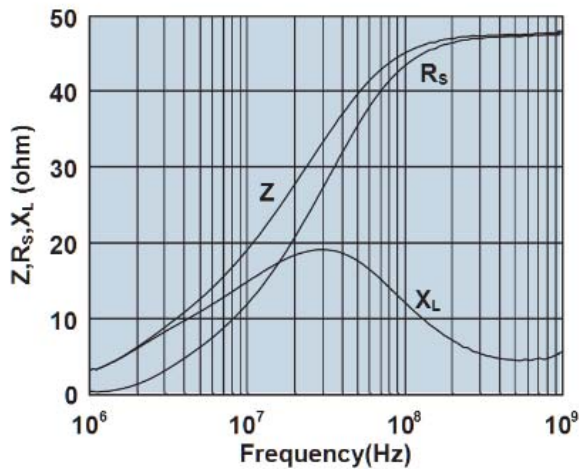
**Hysteresis Loop**



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

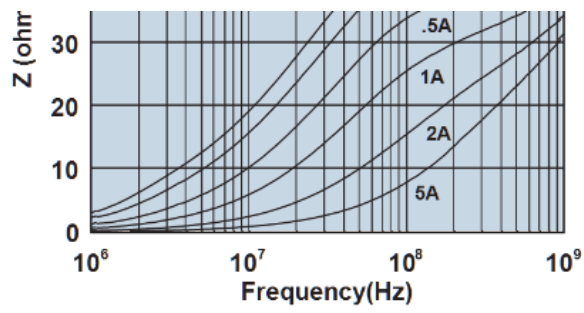
**Impedance Curve**

2743019447



Impedance, reactance, and resistance vs. frequency.





Impedance vs. frequency with dc bias.