

Figure 1

Part Number: 0431164281
Frequency Range: Lower & Broadband Frequencies 1-300 MHz (31 material)
Description: CSRA20/20/39-31-6.6 31 ROUND CABLE CORE ASSEMBLY
Application: Suppression Components
Where Used: Cable Component
Part Type: Round Cable Snap-its
Preferred Part: ✓

Part Type Information

Mechanical Specifications

Weight: 26.00 (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	20.00	—	0.788	—	—	—	—	—	—	—	—	—	—
B	6.60	—	0.260	—	Reel Information					Pkg Size			
C	39.40	—	1.550	—						—			
D	9.80	—	0.385	—	Tape Width mm	Pitch mm	Parts 7" Reel	Parts 13" Reel	Parts 14" Reel	Connector Plate			
E	—	—	—	—	—	—	—	—	—	# Holes	# Rows		
F	—	—	—	—	Cable Information								
G	—	—	—	—	Max Diameter	Max Dimension			Solid Equivalent		Flat Cable Cores		
H	—	—	—	—	6.300 .250	—			2631540002		—		
J	—	—	—	—									
K	—	—	—	—									

Electrical Specifications

Typical Impedance (Ω)	
1 MHz	28
5 MHz	83
10 MHz ⁺	105
25 MHz ⁺	180
100 MHz ⁺	310
250 MHz	240

Electrical Properties	
—	—

Ferrite Material Constants

Specific Heat	0.25 cal/g°C
Thermal Conductivity	10x10 ⁻³ cal/sec/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.	

A MnZn ferrite designed specifically for EMI suppression applications from as low as 1 MHz up to 500 MHz. This material does not have the dimensional resonance limitations associated with conventional MnZn ferrite materials.

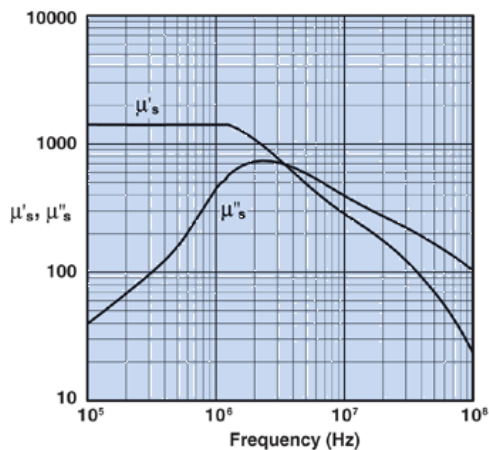
31 Material Specifications:

Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ _i	1500
Flux Density @ Field Strength	gauss oersted	B H	3400 5

Round cable EMI suppression cores, round cable snap-its, flat cable EMI suppression cores, and flat cable snap-its are all available in 31 material.

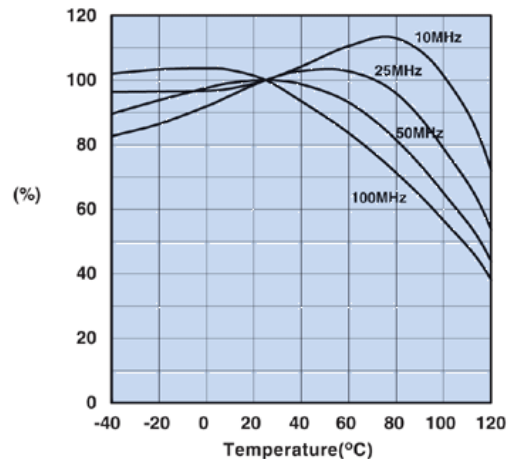
Residual Flux Density	gauss	B_r	2500
Coercive Force	oersted	H_c	0.35
Loss Factor @ Frequency	10^{-2} MHz	$\tan \delta / \mu_i$	20
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		1.6
Curie Temperature	°C	T_c	>130
Resistivity	Ω cm	ρ	3×10^3

Complex Permeability vs. Frequency



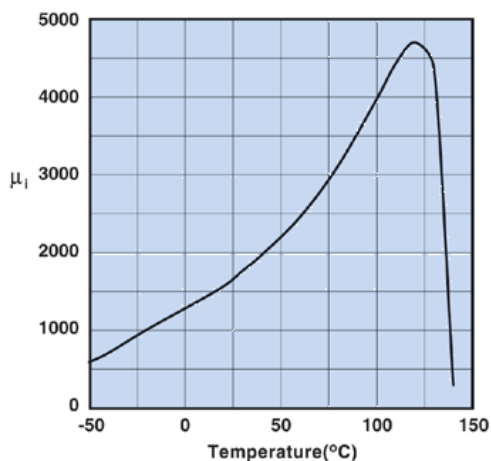
Measured on a 17/10/6mm toroid at 25°C using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



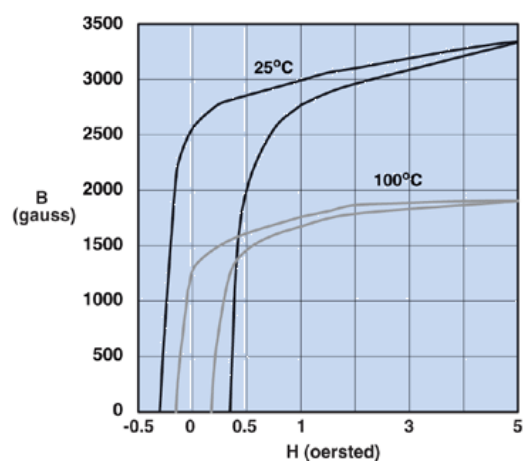
Measured on a 2631000301 using the HP4291A.

Initial Permeability vs. Temperature



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

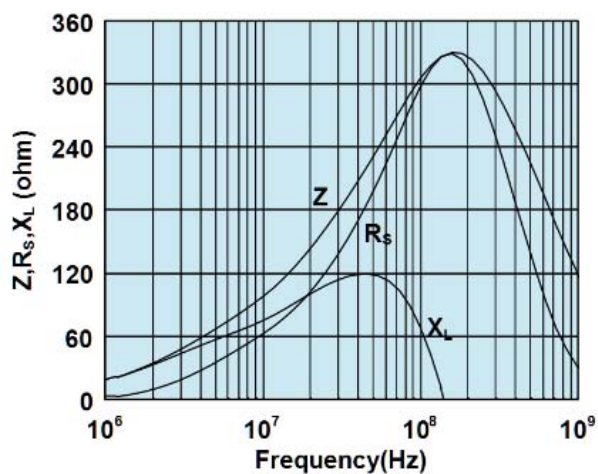
Hysteresis Loop



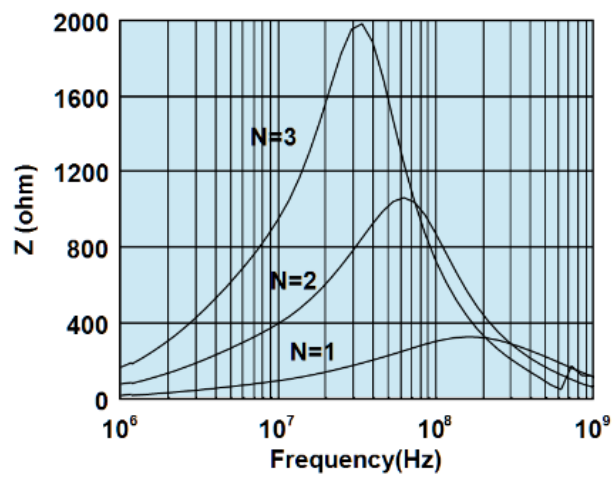
Measured on a 17/10/6mm toroid at 10kHz.

Impedance Curve

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Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with one, two, and three turns.