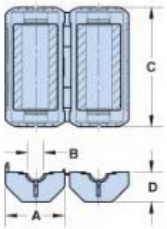


Figure 1

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.
A	20.00	_	0.788	_
B	6.60	_	0.260	_
C	39.40	_	1.550	_
D	9.80	_	0.385	_
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
6.300 .250	_	2631540002	_

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	10×10^{-3} cal/sec/cm/°C
Coefficient of Linear Expansion	$8 - 10 \times 10^{-6}$/°C
Tensile Strength	4.9 kgf/mm²
Compressive Strength	42 kgf/mm²
Young's Modulus	15×10^{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.

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.

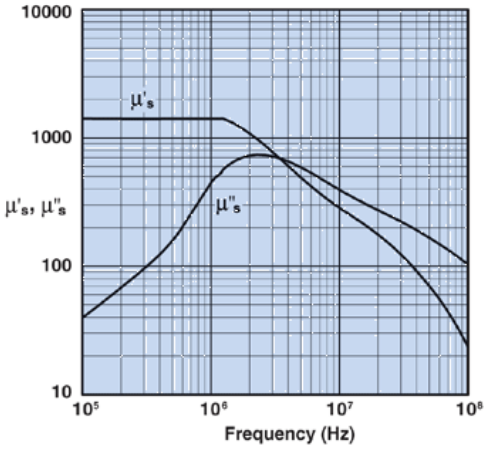
31 Material Specifications:

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.

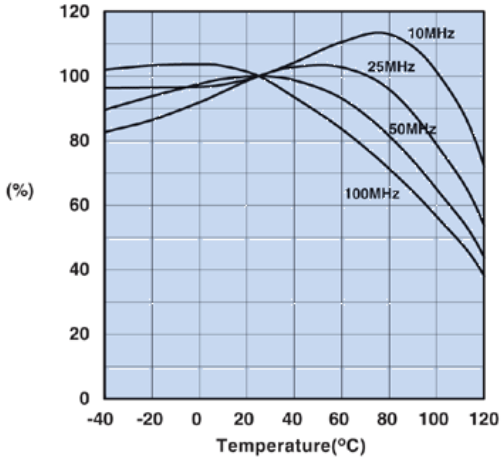
Residual Flux Density	gauss	B_r	2500
Coercive Force	oersted	H_c	0.35
Loss Factor @ Frequency	10^{-6} MHz	$\tan\delta/\mu_i$	20 0.1
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		1.6
Curie Temperature	°C	T_c	>130
Resistivity	Ω cm	ρ	$3x10^3$

Complex Permeability vs. Frequency



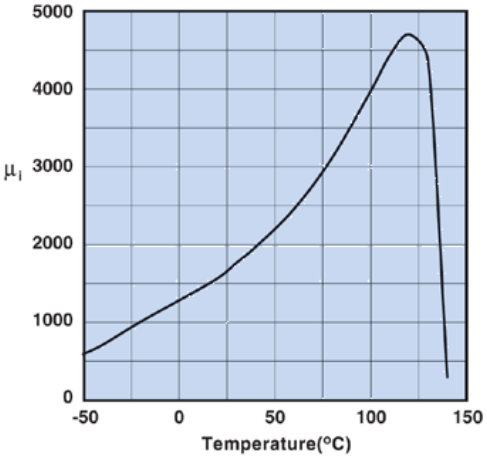
Measured on a 17/10/6mm toroid at 25°C using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



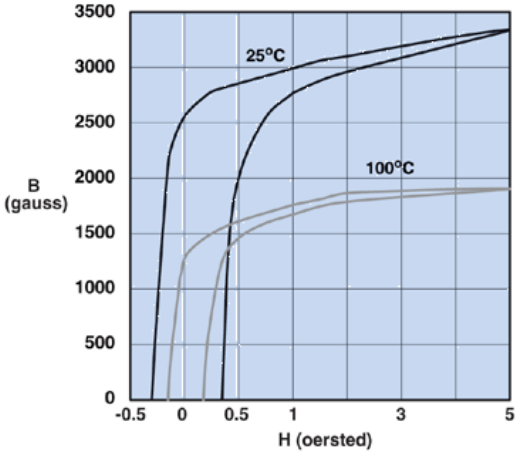
Measured on a 2631000301 using the HP4291A.

Initial Permeability vs. Temperature



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

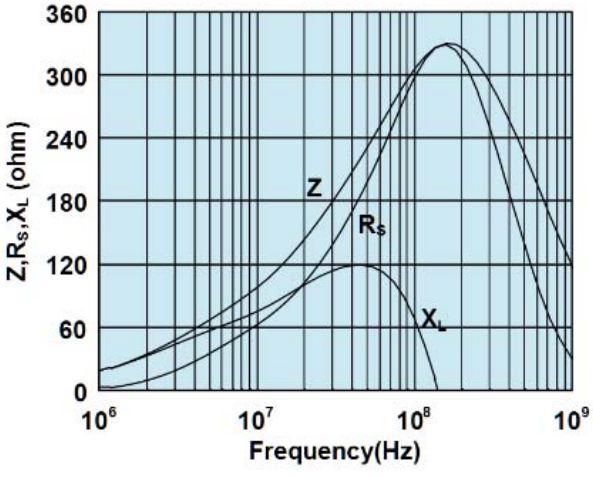
Hysteresis Loop



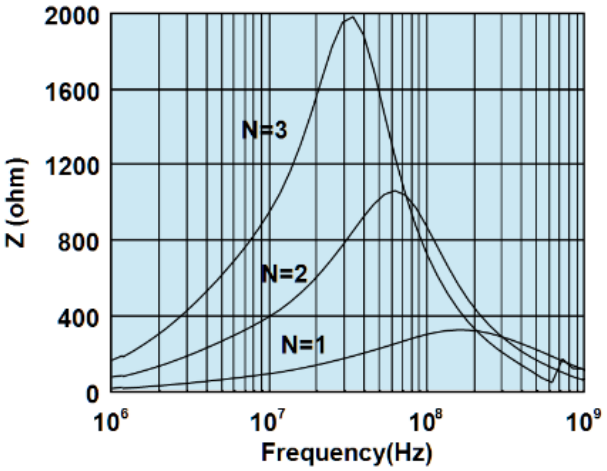
Measured on a 17/10/6mm toroid at 10kHz.

Impedance Curve

0431164281



Impedance, reactance, and resistance vs. frequency.



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

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