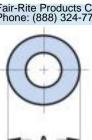
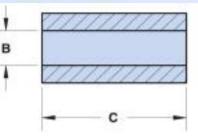


Fair-Rite Product's Catalog Part Data Sheet. 2643480002

Printed: 2010-11-09

Fair-Rite Products Corp. PO Box J,One Commercial Row, Wallkill, NY 12589-0288 Phone: (888) 324-7748 www.fair-rite.com





Part Number:	2643480002
Frequency Range:	Broadband Frequencies 25-300 MHz (43 material)
Description:	43 ROUND CABLE CORE
Application:	Suppression Components
Where Used:	Cable Component
Part Type:	Round Cable EMI Suppression Cores
Preferred Part:	\checkmark

Mechanical Specifications

Weight: 12.000 (g)

Part Type Information

Fair-Rite offers a broad selection of ferrite EMI suppression cable cores in several materials with guaranteed minimum impedance specifications.

-All cable cores have been burnished to remove the sharp edges.

-The column 'H' (Oe) gives for each cable core 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-turns) product. For the effect of the dc bias on the impedance of the core material, see the figures 18-23 in the application note 'How to choose Ferrite Components for EMI Suppression'.

-Suppression cable cores are controlled for impedances only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed impedance less 20%.

-Single turn impedance tests for 31, 43 and 46 material cores are performed on the 4193A Vector Impedance Meter. The 61 material parts are tested on the 4191A RF Impedance Analyzer. Cores are tested with the shortest Practical wire length.

-Performance curves for individual components can be viewed by clicking on the part number in the chart.

-For smaller suppression parts, refer to the EMI Suppression Bead section of our catalog.

-For any cable suppression core not listed here, feel free to contact our customer service group for availability and pricing.

-The 'C' dimension, the core length, can be modified to suit specific applications.

-Our Expanded Cable and Suppressor Kit (part number 0199000005) Contains a selection of these suppression cores.

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

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Mechanical Specifications

mm	mm	nominal	
contained opeometations			

Dim	mm	mm	nominal	inch
		tol	inch	misc.
А	12.30	±0.40	0.485	-
В	4.95	+0.25	0.200	-
С	25.40	±0.75	1.000	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
Н	-	-	-	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)		
10 MHz	102	
25 MHz+	165	
100 MHz+	236	
250 MHz	233	

Electrical Properties		
H(Oe)	.52	

Land Patterns

\vee	W ref	Х	Υ	Z
-	-	-	-	-
-	-	-	-	-

Winding Information

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

Reel Information

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

Package Size

Pkę	g 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.

I/A - Core Constant

A_e: Effective Cross-Sectional Area

 A_{I} - Inductance Factor $\left(\frac{L}{N^{2}}\right)$

N/AWG - Number of Turns/Wire Size for Test Coil

I e: Effective Path Length

V_e: Effective Core Volume

NI - Value of dc Ampere-turns



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Ferrite Material Constants

Specific Heat	0.25 cal/g/ºC
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	\approx 4.7 g/cm ³
The above quoted properties are typical for Fair-Rit	e MnZn and NiZn ferrites.

See next page for further material specifications.

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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.

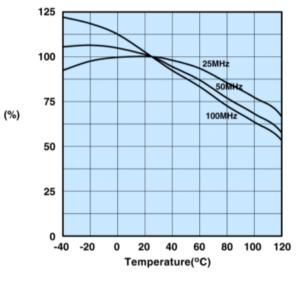
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43 Material Characteristics:

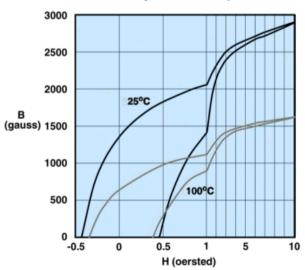
Property	Unit	Symbol	Value
Initial Permeability		μ	800
Flux Density	gauss	В	2900
@ Field Strength	oersted	н	10
Residual Flux Density	gauss	B,	1300
Coercive Force	oersted	He	0.45
Loss Factor	10-6	tan δ/μ _i	250
@ Frequency	MHz		1.0
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		1.25
Curie Temperature	°C	Tc	>130
Resistivity	Ωcm	ρ	1x10 ⁵

Percent of Original Impedance vs. Temperature

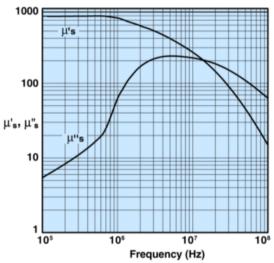


Measured on a 2643000301 using the HP4291A.

Hysteresis Loop

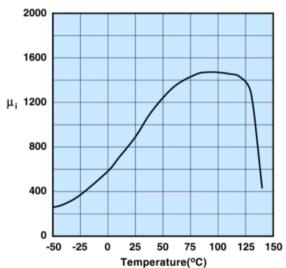


Complex Permeability vs. Frequency



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

Initial Permeability vs. Temperature



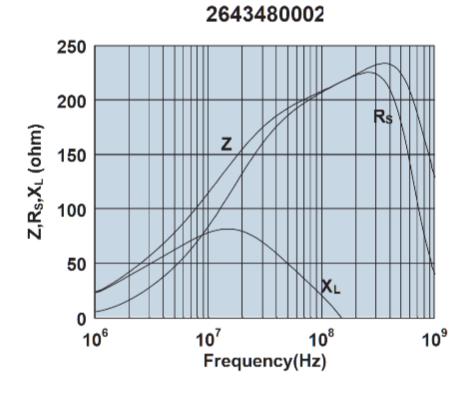
Measured on a 17/10/6mm toroid at 100kHz.

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



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Impedance, reactance, and resistance vs. frequency.