



Fair-Rite Products Corp.

Your Signal Solution®

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

Fair-Rite Product's Catalog
Part Data Sheet, 2644245701
Printed: 2008-08-25

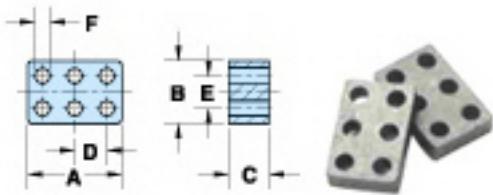


Figure 2

Part Number: 2644245701

Frequency Range: Connector Plates

Description: 44 MULTI-HOLE PLATE

Application: Suppression Components

Where Used: Cable Component

Part Type: Connector EMI Suppression Plates

Preferred Part:

Mechanical Specifications

Weight: .220 (g)

Part Type Information

To provide suppression of conducted EMI at critical interfaces Fair-Rite has available a line of suppression plates that can be used with many types of connectors. All connector plates are supplied in the NiZn 44 grade ideally suited for this application because of its high impedance along with a high resistivity.

-Connector plates are controlled for impedance only. The impedances listed are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed typical impedance less 20%. Single turn impedance tests are performed on the 4193A Vector Impedance Analyzer, using the shortest practical wire length.

-The 'C' Dimension can be modified to suit specific applications.

-For any connector EMI suppression plate requirement not listed here, feel free to contact our customer service group for availability and pricing.

-Explanation of Part Numbers: Digit 1&2 = product class and 3&4 = the 44 material grade.



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Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	7.44	± 0.10	0.293	-
B	4.90	± 0.10	0.193	-
C	1.52	± 0.13	0.060	-
D	2.54	± 0.13	0.100	-
E	2.54	± 0.10	0.100	-
F	1.22	± 0.07	0.048	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)	
25 MHz+	13
100 MHz+	28

Electrical Properties	

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
-	-	-	-	-

Package Size

Pkg Size
- (-)

Connector Plate

# Holes	# Rows
6	2

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 1/2 turn is defined as a single pass through a hole.

$\sum I/A$ - Core Constant

A_e - Effective Cross-Sectional Area

A_L - Inductance Factor ($\frac{L}{N^2}$)

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

l_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/°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.

See next page for further material specifications.



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A NiZn ferrite developed to combine a high suppression performance, from 30 MHz to 500 MHz, with a very high dc resistivity.

SM beads, PC beads, wound beads, round cable snap-its, and connector EMI suppression plates are all available in 44 material.

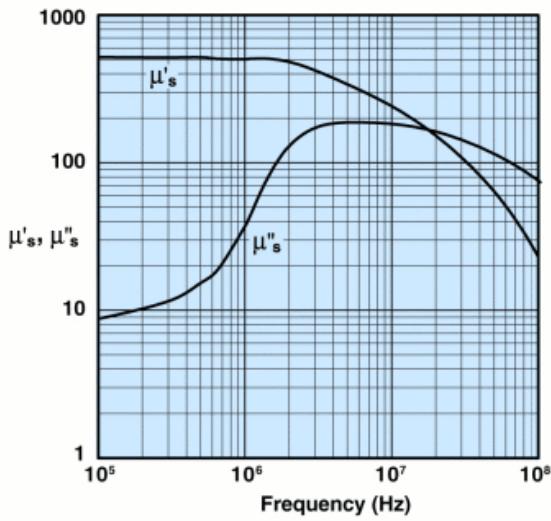
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44 Material Characteristics:

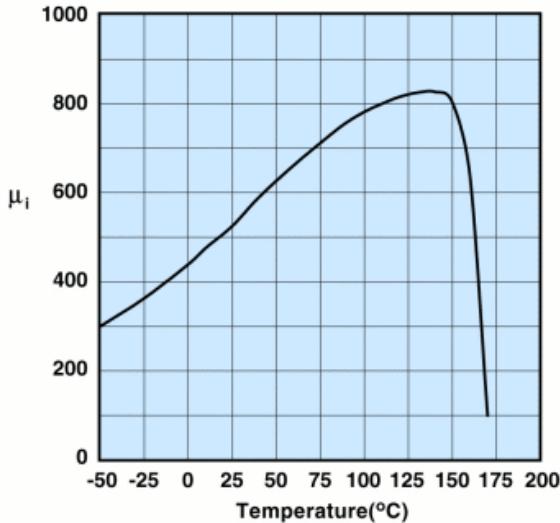
Property	Unit	Symbol	Value
Initial Permeability @ $B < 10$ gauss		μ_i	500
Flux Density @ Field Strength	gauss oersted	B H	3000 10
Residual Flux Density	gauss	B_r	1100
Coercive Force	oersted	H_c	0.45
Loss Factor	10^{-6} MHz	$\tan \delta / \mu_i$	125 1.0
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		0.75
Curie Temperature	°C	T_c	>160
Resistivity	$\Omega \text{ cm}$	ρ	1×10^{-9}

Complex Permeability vs. Frequency



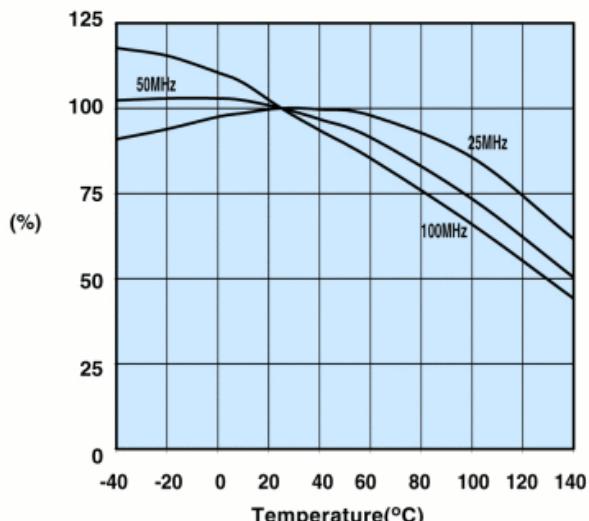
Measured on a 17/10/6mm toroid
using the HP 4284A and the HP 4291A.

Initial Permeability vs. Temperature



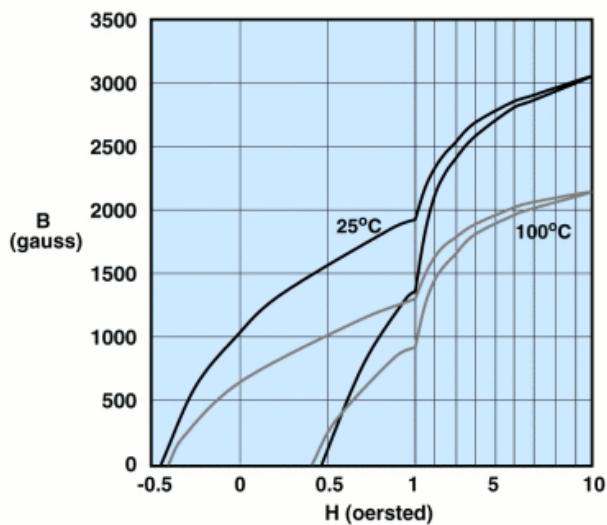
Measured on a 17/10/6mm toroid at 100kHz.

Percent of Original Impedance vs. Temperature



Measured on a 2644000301 using the HP4291A.

Hysteresis Loop



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



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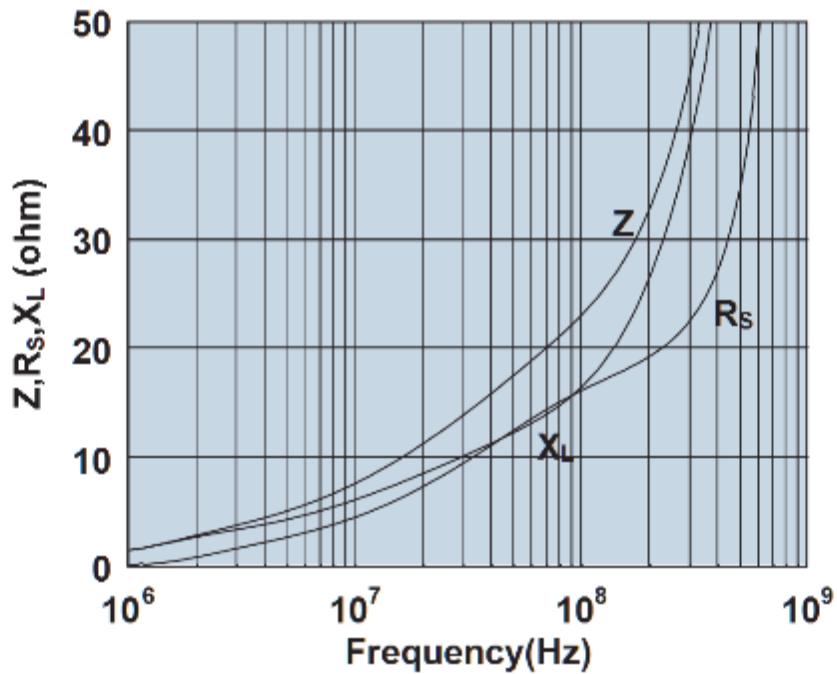
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Impedance, reactance, and resistance vs. frequency.

Mouser Electronics

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