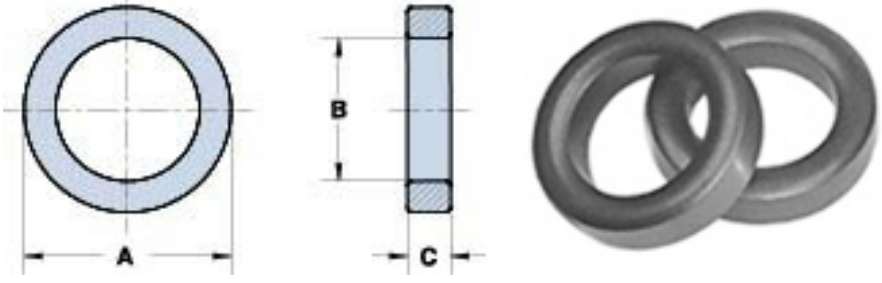
Fair-Rite Products Corp.
Your Signal Solution®
Ferrite Components for the Electronics Industry
Fair-Rite Products Corp. PO Box J,One Commercial Row, Wallkill, NY 12589-0288
Phone: (888) 324-7748 www.fair-rite.com

Fair-Rite Product's Catalog
Part Data Sheet, 5967001901
Printed: 2010-11-09



Part Number:	5967001901
Frequency Range:	Low Permeability, 67 (ui=40) material
Description:	67 TOROID
Application:	Inductive Components
Where Used:	Closed Magnetic Circuit
Part Type:	Toroids
Preferred Part:	✔

Mechanical Specifications

Weight:	4.700 (g)

Part Type Information

A ring configuration provides the ultimate utilization of the intrinsic ferrite material properties. Toroidal cores are used in a wide variety of applications such as power input filters, ground-fault interrupters, common-mode filters and in pulse and broadband transformers.

-Toroids are listed by initial permeability classes and increasing dimension of the inside diameter.

-All toroidal cores are supplied burnished to break sharp edges.

-Toroids are tested for AL values at 10 kHz. The square loop 85 material toroids are specified to a squareness ratio and not to an AL value.

-Toroids with an outside diameter of 9.5mm (.375") or smaller can be supplied Parylene C coated. The Parylene coating will increase the 'A' and 'C' dimensions and decrease the 'B' dimension a maximum of 0.038mm (.0015"). The ninth digit of a Parylene coated toroid part number is a '1'. See the material characteristics of Parylene C in our online catalog.

-Toroids with an outside diameter of 9.5mm (.375") or larger can be supplied with a uniform coating of thermo-set plastic coating. This coating will increase the 'A' and 'C' dimensions and decrease the 'B' dimension a maximum of 0.5mm (.020"). The 9th digit of the thermo-set plastic coated toroid part number is a '2'. Thermo-set plastic coating is RoHS compliant.

-Thermo-set plastic coated parts can withstand a minimum breakdown voltage of 1000 Vrms, uniformly applied across the 'C' dimension of the toroid.

-The "C" dimension may be modified to suit specific applications.

-For any toroidal core requirement not listed in the catalog, please contact our customer service department for availability and pricing.

-Explaination of Part Numbers: Digits 1&2 = product class, 3&4 = material grade, 9th digit 1 = Parylene coating, 2 = thermo-set plastic coating.

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Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	12.70	±0.25	0.500	-
B	7.90	±0.20	0.312	-
C	12.70	±0.35	0.500	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)	

Electrical Properties	
A_L (nH)	48 +35%, -25%
Ae(cm^2)	0.29900
Σl/A(cm^{-1})	10.40
l_e (cm)	3.12
V_e (cm^3)	0.93000

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
-	-

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.

Σl/A - Core Constant

l_e: Effective Path Length

A_e: Effective Cross-Sectional Area

V_e: Effective Core Volume

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

NI - Value of dc Ampere-turns

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

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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	$\approx$ 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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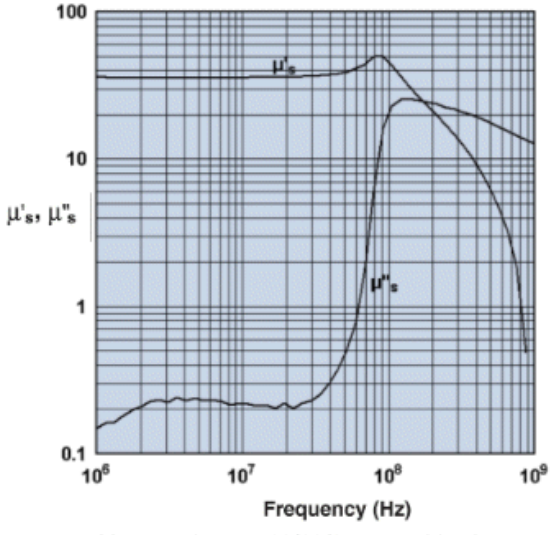
A high frequency NiZn ferrite for the design of broadband transformers, antennas and HF, high Q inductor applications up to 50 MHz. Toroids, multi-aperture cores and antenna/RFID rods are available in this material.

Strong magnetic fields or excessive mechanical stresses may result in irreversible changes in permeability and losses.

67 Material Characteristics:

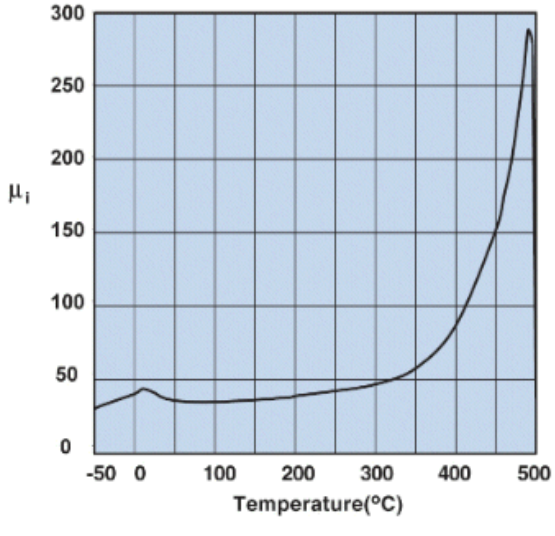
Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ_i	40
Flux Density @ Field Strength	gauss oersted	B H	2300 20
Residual Flux Density	gauss	B_r	800
Coercive Force	oersted	H_c	3.5
Loss Factor @ Frequency	10^{-6} MHz	$\tan\delta/\mu_i$	150 50
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		0.05
Curie Temperature	°C	T_c	>475
Resistivity	Ω cm	ρ	$1x10^7$

Complex Permeability vs. Frequency



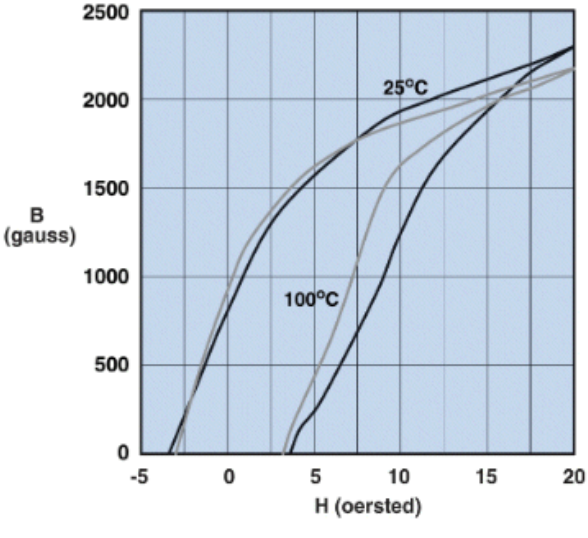
Measured on an 19/10/6mm toroid using the HP 4284A and the HP 4291A.

Initial Permeability vs. Temperature



Measured on a 19/10/6mm toroid at 100 kHz.

Hysteresis Loop



Measured on a 19/10/6mm toroid at 10 kHz.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

Fair-Rite:

0461178181 2677006302 2743002112 4077296011 5961003801 5975001101 5977001721 2675665702
2867000102 3078990851 0199000005 444173951 5943018601 5943011101 0446167281 2643801002
2643801102 2673022401 0444177081 5943000911 5978003801 2661000801 2961666631 5943000501
5977000301 0446164951 2643626502 2675821502 2873006802 2944666661