

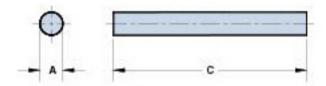
Fair-Rite Products Corp. PO Box J,One Commercial Row, Wallkill, NY 12589-0288 Phone: (888) 324-7748 www.fair-rite.com

Fair-Rite Product's Catalog Part Data Sheet, 3061990911 Printed: 2013-07-03









Part Number: 3061990911

Frequency Range: Low Permeability, 61 (ui=125) material

Description: 61 ROD

Application: Inductive Components

Where Used: Open Magnetic Circuit

Part Type: Antenna/RFID Rods

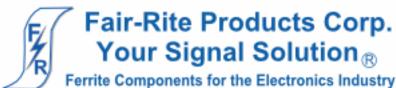
Mechanical Specifications

Weight: 11.900 (g)

Part Type Information

These rods are designed for use in antenna and RFID transponder applications. Rods are available in three materials to cover a frequency range from 50 kHz to 25 MHz. Suggested frequency ranges: 78 material < 200 kHz, 61 material 0.2 -5.0 MHz and 61 material > 5.0 MHz.

- -See www.fair-rite.com/newfair/catalog_rodinfo.htm graphs for temperature information for these rods.
- -Rods can be supplied with a Parylene C coating. Parylene coated rods have a '4' as the last digit. Parylene C is RoHS compliant.
- -For any rod requirement not listed here, feel free to contact our customer service group for availability and pricing.
- -The Antenna/RFID Kit (part number 0199000024) contains a selection of these rods.
- -Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade, the last digit 1 = uncoated rod and 4 = Parylene coated rod.



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Mechanical Specifications

Dim	mm	mm	nominal	inch
		tol	inch	misc.
Α	8.00	±0.05	0.315	-
В	-	-	-	-
С	45.00	±0.90	1.772	-
D	-	-	-	-
Е	•	ı	-	-
F	•	ı	-	-
G	•	ı	-	-
Н	-		-	-
J	-		-	-
K	-	-	-	-

Electrical Specifications

Licotrioai opcomoations		
Typical Impedance (Ω)		
Electrical Properties		
U _{ROD}	18	
Ae(cm ²)	0.50300	

Land Patterns

V	W	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

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

∑I/A - Core Constant

A_e: Effective Cross-Sectional Area

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

I e: Effective Path Length

Ve: Effective Core Volume

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
 3.5 - 4.5 mW/cm - °C

Coefficient of Linear Expansion 8 - 10x10⁻⁶/°C

Tensile Strength 4.9 kgf/mm²

Compressive Strength 42 kgf/mm²

Young's Modulus 15x10³ kgf/mm²

Specific Gravity $\approx 4.7 \text{ g/cm}^3$

The above quoted properties are typical for Fair-Rite MnZn and NiZn ferrites.

See next page for further material specifications.

Fair-Rite Products Corp. Your Signal Solution® Ferrite Components for the Electronics Industry

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A high frequency NiZn ferrite developed for a range of inductive applications up to 25 MHz. This material is also used in EMI applications for suppression of noise frequencies above 200 MHz.

EMI suppression beads, beads on leads, SM beads, wound beads, multi-aperture cores, round cable snap-its, rods, antenna/RFID rods, and toroids are all available in 61 material.

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

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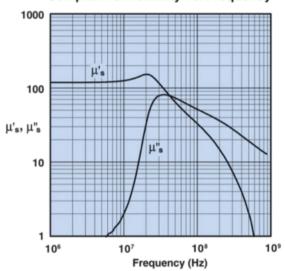




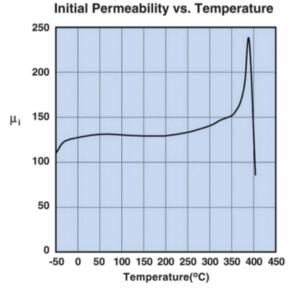
61 Material Characteristics:

Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ	125
Flux Density	gauss	В	2350
@ Field Strength	oersted	н	15
Residual Flux Density	gauss	B,	1200
Coercive Force	oersted	Hc	1.8
Loss Factor	10-6	tan δ/μ,	30
@ Frequency	MHz		1.0
Temperature Coefficient of Initial Permeability (20 -70°C)	%/°C		0.10
Curie Temperature	°C	Tc	>300
Resistivity	Ωcm	ρ	1x10 ⁸

Complex Permeability vs. Frequency

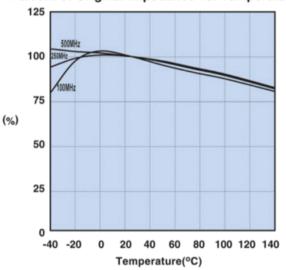


Measured on a 19/10/6mm toroid using the HP 4284A and the HP 4291A.



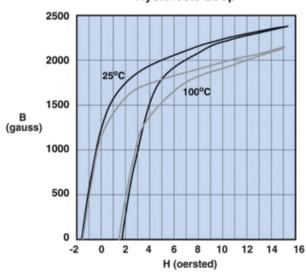
Measured on a 19/10/6mm toroid at 100kHz.

Percent of Original Impedance vs. Temperature



Measured on a 2661000301 using the HP4291A.

Hysteresis Loop



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