

Part Number: 2944666651
 Frequency Range: Broadband Frequencies 1-200 MHz (44 material)
 Description: 44 WOUND BEAD
 Application: Suppression Components
 Where Used: Board Component
 Part Type: Wound Beads
 Preferred Part: ✓

Mechanical Specifications

Weight: 1.300 (g)

Part Type Information

Six and eleven hole beads, in two NiZn materials, are available both as beads (product class 26) and wound with tinned copper wire in several winding configurations (product class 29).

-Parts with a '1' as the last digit of the part number are supplied bulk packed. Wound beads with part numbers 29--666631 and 29--666651 can be supplied radially taped and reeled per IEC 60286-1 and EIA 468-B standards. For these taped and reeled wound beads the last digit of the part number is a '4'. Taped and reeled wound beads are supplied 500 pieces on a 13" reel.

-Wire used for winding is oxygen free high conductivity copper with a lead-free tin plating.

-Beads are controlled for impedance limits 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%. The 44 material beads and wound beads are tested on the 4193A Vector Impedance Meter. The 61 material parts on the 4191A RF Impedance Analyzer.

-Recommended storage temperature and operating temperature is -55°C to 125°C

-For any wound bead requirement not listed in here, please contact our customer service group for availability and pricing.

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



Fair-Rite Products Corp.

Your Signal Solution®

Ferrite Components for the Electronics Industry

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Fair-Rite Product's Catalog
Part Data Sheet, 294466651
Printed: 2010-11-09



Mechanical Specifications

| Dim | mm | mm tol | nominal inch | inch misc. |
|-----|-------|-----------|-----------------|---------------|
| A | 6.00 | ±0.25 | 0.236 | - |
| B | 0.75 | +0.15 | 0.032 | - |
| C | 10.00 | ±0.25 | 0.394 | - |
| D | 3.50 | Ref | 0.138 | Ref |
| E | - | - | - | - |
| F | - | - | - | - |
| G | - | - | - | - |
| H | - | - | - | - |
| J | - | - | - | - |
| K | - | - | - | - |

Electrical Specifications

| Typical Impedance (Ω) | |
|--------------------------------|-----|
| 1 MHz | 58 |
| 10 MHz+ | 300 |
| 50 MHz+ | 650 |
| 100 MHz+ | 600 |
| 200 MHz | 415 |

| Electrical Properties | |
|-----------------------|--|
| | |

Land Patterns

| V | W ref | X | Y | Z |
|---|----------|---|---|---|
| - | - | - | - | - |
| - | - | - | - | - |

Winding Information

| Turns Tested | Wire Size | 1st Wire Length | 2nd Wire Length |
|-----------------|--------------|--------------------|--------------------|
| 2 | 0.53 24 AWG | 38.0 ±3.0 1.500 | - |

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.

Σ l/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



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.



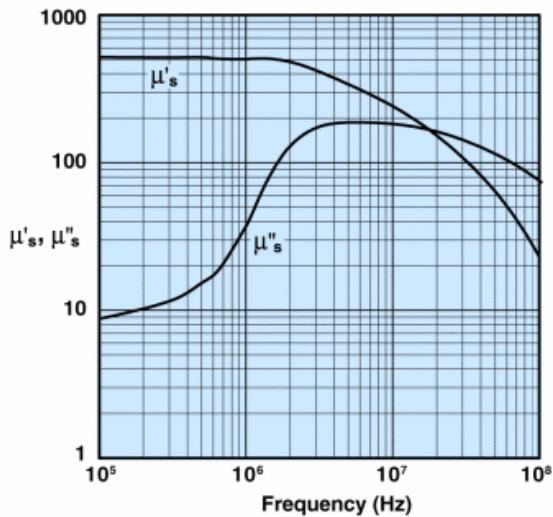
44 Material Characteristics:

| 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 @ Frequency | 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 | Ω cm | ρ | 1×10^9 |

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

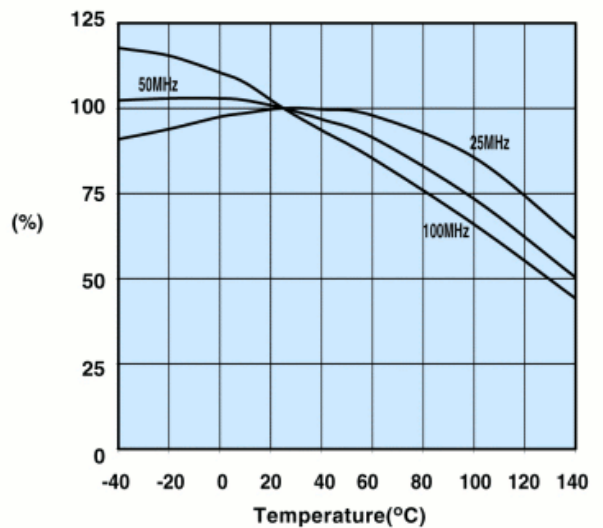
SM beads, PC beads, wound beads, round cable snap-its, and connector EMI suppression plates are all available in 44 material.

Complex Permeability vs. Frequency



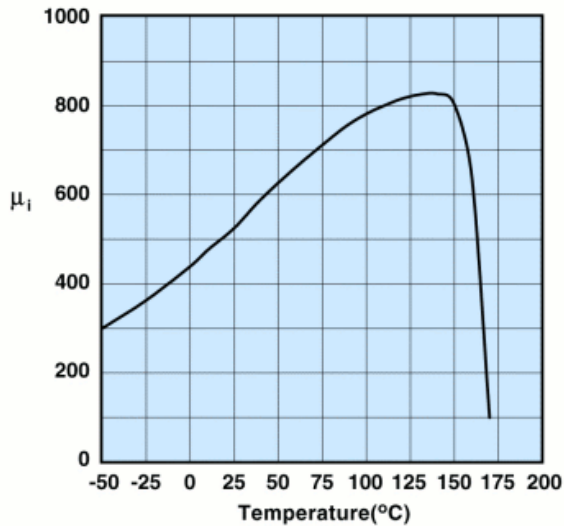
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



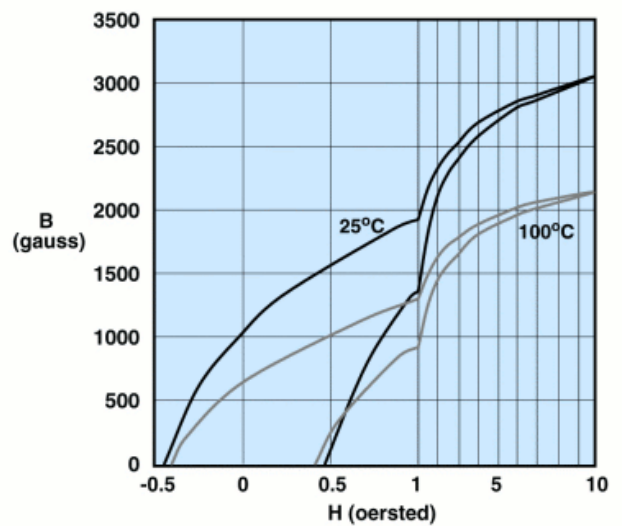
Measured on a 2644000301 using the HP4291A.

Initial Permeability vs. Temperature



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

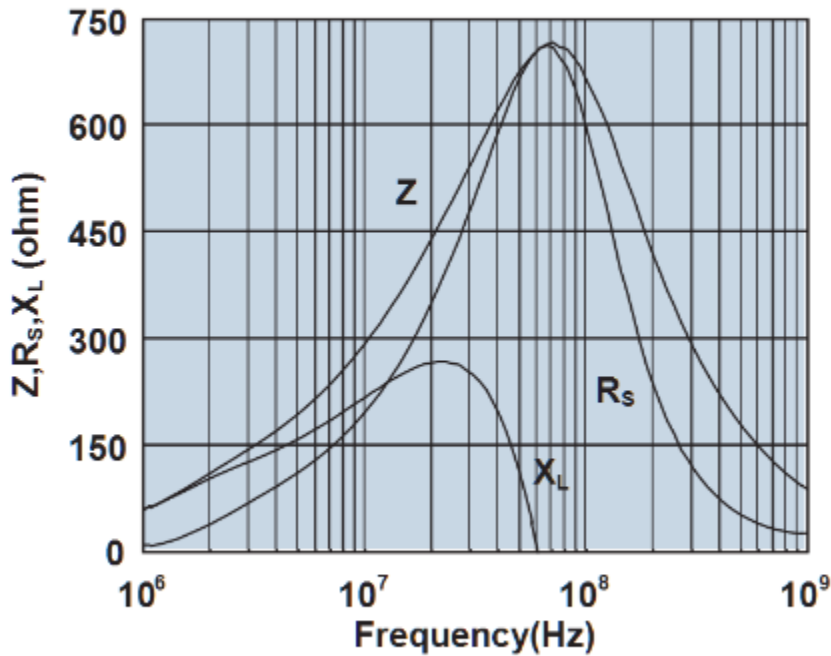
Hysteresis Loop



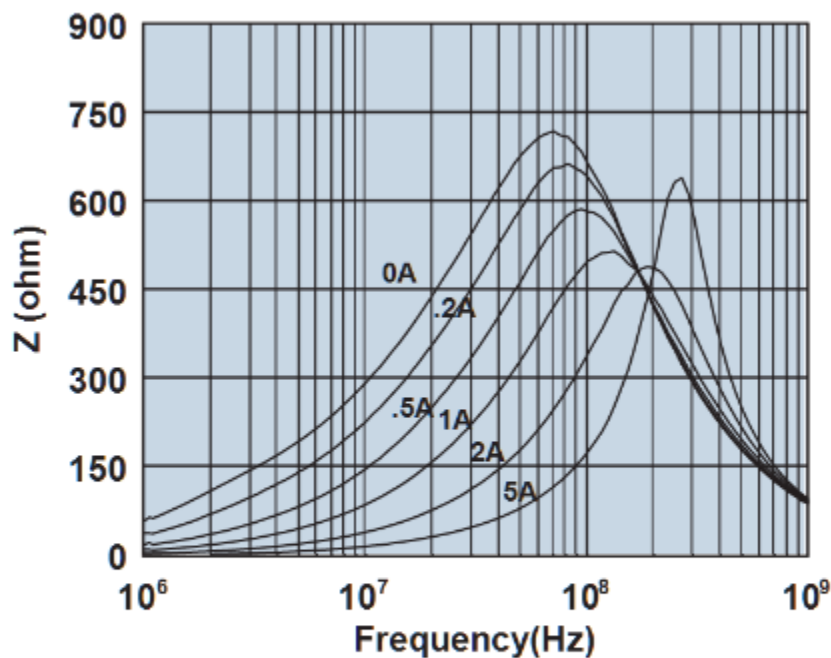
Measured on a 17/10/6mm toroid at 10kHz.



2944666651



Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with dc bias.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

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