

Part Number: 2643375102
 Frequency Range: Broadband Frequencies 25-300 MHz (43 material)
 Description: 43 SHIELD BEAD
 Application: Suppression Components
 Where Used: Board Component
 Part Type: EMI Suppression Beads

Mechanical Specifications

Weight: 1.400 (g)

Part Type Information

Fair-Rite offers a broad selection of ferrite EMI suppression beads with guaranteed minimum impedance specifications.

-Beads with a '1' as the last digit of the part number are not burnished. Parts that are burnished to break the sharp edges have a '2' as the last digit.

-Upon request beads can be supplied with a Parylene coating. The last digit of the Parylene coated part is a '4'. The minimum coating thickness beads is 0.005 mm (.0002").

-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 www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf document for 'How to choose Ferrite Components for EMI Suppression.

-Suppression beads are controlled for impedances only. Minimum impedance values are specified for the + marked frequencies. The minimum impedance is typically the listed impedance less 20%.

-Single turn impedance tests for 73 and 43 material beads are performed on the 4193A Vector Impedance Analyzer. The 61 material beads are tested on the 4291A RF Impedance Analyzer. Beads are tested with the shortest practical wire length.

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

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

-Our 'Shield Bead Kit' (part number 0199000019) contains a selection of these beads.

-Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1= not burnished, 2 = burnished and 4 = Parylene coated.



Mechanical Specifications

| Dim | mm | mm tol | nominal inch | inch misc. |
|-----|------|-----------|-----------------|---------------|
| A | 9.50 | ±0.25 | 0.375 | - |
| B | 4.50 | +0.75 | 0.192 | - |
| C | 6.35 | ±0.35 | 0.250 | - |
| D | - | - | - | - |
| E | - | - | - | - |
| F | - | - | - | - |
| G | - | - | - | - |
| H | - | - | - | - |
| J | - | - | - | - |
| K | - | - | - | - |

Electrical Specifications

| Typical Impedance (Ω) | |
|--------------------------------|----|
| 10 MHz | 21 |
| 25 MHz+ | 35 |
| 100 MHz+ | 50 |
| 250 MHz | 66 |

| Electrical Properties | |
|-----------------------|-----|
| H(Oe) | .60 |

Land Patterns

| V | W ref | X | Y | 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 ½ turn is defined as a single pass through a hole.

$\Sigma L/A$ - 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 | 3.5 - 4.5 mW/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.



43 Material Characteristics:

| Property | Unit | Symbol | Value |
|--|------------------|-----------------------|-----------------|
| Initial Permeability @ B < 10 gauss | | μ_i | 800 |
| Flux Density @ Field Strength | gauss oersted | B H | 2900 10 |
| Residual Flux Density | gauss | B_r | 1300 |
| Coercive Force | oersted | H_c | 0.45 |
| Loss Factor @ Frequency | 10^{-6} MHz | $\tan \delta / \mu_i$ | 250 1.0 |
| Temperature Coefficient of Initial Permeability (20 -70°C) | %/°C | | 1.25 |
| Curie Temperature | °C | T_c | >130 |
| Resistivity | Ω cm | ρ | 1×10^5 |

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.

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 2643000301 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.



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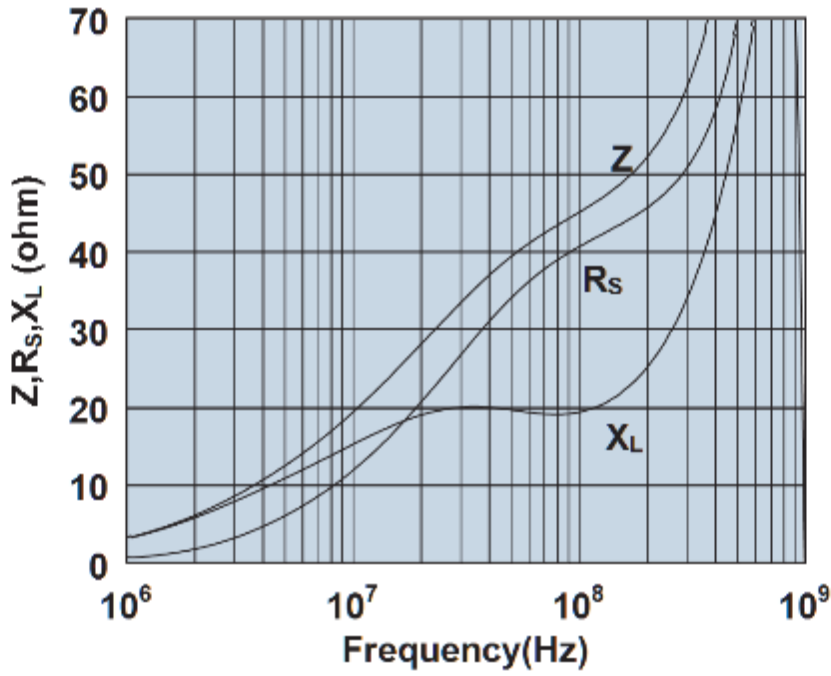
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Fair-Rite Product's Catalog
Part Data Sheet, 2643375102
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RoHS
Material
Declaration

2643375102



Impedance, reactance, and resistance vs. frequency.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

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<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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