

Part Number: 2643626502  
Frequency Range: Broadband Frequencies 25-300 MHz (43 material)  
Description: CS19/10/51-43 43 ROUND CABLE CORE  
Application: Suppression Components  
Where Used: Cable Component  
Part Type: Round Cable EMI Suppression Cores  
Preferred Part: ✓

Part Type Information

Mechanical Specifications

Weight: 47.00 (g)

[View Chart Legend](#)

| Dim | mm    | mm tol | nominal inch | inch misc. | Land Patterns     |               |               |                  |                | Winding Information |           |                 |                 |
|-----|-------|--------|--------------|------------|-------------------|---------------|---------------|------------------|----------------|---------------------|-----------|-----------------|-----------------|
|     |       |        |              |            | V                 | W (ref)       | X             | Y                | Z              | Turns Tested        | Wire Size | 1st Wire Length | 2nd Wire Length |
| A   | 18.70 | ±0.60  | 0.735        | —          | —                 | —             | —             | —                | —              | —                   | —         | —               | —               |
| B   | 10.15 | ±0.40  | 0.400        | —          | Reel Information  |               |               |                  |                | Pkg Size            |           |                 |                 |
| C   | 50.80 | ±1.00  | 2.000        | —          |                   |               |               |                  |                | —                   |           |                 |                 |
| D   | —     | —      | —            | —          | Tape Width mm     | Pitch mm      | Parts 7" Reel | Parts 13" Reel   | Parts 14" Reel | Connector Plate     |           |                 |                 |
| E   | —     | —      | —            | —          |                   |               |               |                  |                | —                   |           | —               |                 |
| F   | —     | —      | —            | —          | Cable Information |               |               |                  |                |                     |           |                 |                 |
| G   | —     | —      | —            | —          |                   |               |               |                  |                |                     |           |                 |                 |
| H   | —     | —      | —            | —          | Max Diameter      | Max Dimension |               | Solid Equivalent |                | Flat Cable Cores    |           |                 |                 |
| J   | —     | —      | —            | —          | —                 |               | —             |                  | —              |                     | —         |                 |                 |
| K   | —     | —      | —            | —          |                   |               |               |                  |                |                     |           |                 |                 |

Electrical Specifications

| Typical Impedance (Ω) |     | Electrical Properties |     |
|-----------------------|-----|-----------------------|-----|
| 10 MHz                | 138 | H(Oe)                 | .29 |
| 25 MHz <sup>+</sup>   | 225 |                       |     |
| 100 MHz <sup>+</sup>  | 348 |                       |     |
| 250 MHz               | 405 |                       |     |

Ferrite Material Constants

|                                                                               |                                  |
|-------------------------------------------------------------------------------|----------------------------------|
| Specific Heat .....                                                           | 0.25 cal/g°C                     |
| Thermal Conductivity .....                                                    | 10x10 <sup>-3</sup> cal/sec/cm°C |
| Coefficient of Linear Expansion .....                                         | 8 - 10x10 <sup>-6</sup> /°C      |
| Tensile Strength .....                                                        | 4.9 kgf/mm²                      |
| Compressive Strength .....                                                    | 42 kgf/mm²                       |
| Young's Modulus .....                                                         | 15x10³ kgf/mm²                   |
| Hardness (Knoop) .....                                                        | 650                              |
| Specific Gravity .....                                                        | ≈ 4.7 g/cm³                      |
| The above quoted properties are typical for Fair-Rite MnZn and NiZn ferrites. |                                  |

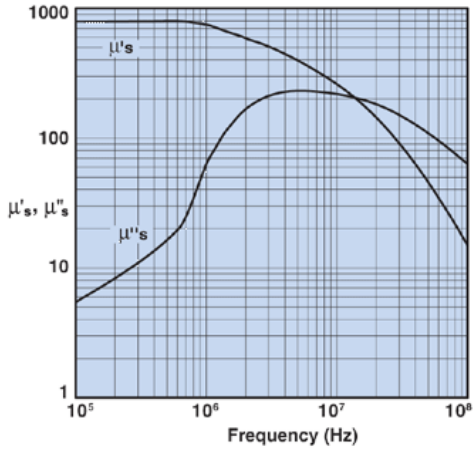
43 Material Specifications:

| Property                                                   | Unit                    | Symbol               | Value              |
|------------------------------------------------------------|-------------------------|----------------------|--------------------|
| Initial Permeability @ B < 10 gauss                        |                         | μ <sub>i</sub>       | 800                |
| Flux Density @ Field Strength                              | gauss<br>oersted        | B<br>H               | 2900<br>10         |
| Residual Flux Density                                      | gauss                   | B <sub>r</sub>       | 1300               |
| Coercive Force                                             | oersted                 | H <sub>c</sub>       | 0.45               |
| Loss Factor @ Frequency                                    | 10 <sup>-3</sup><br>MHz | tan δ/μ <sub>i</sub> | 250<br>1.0         |
| Temperature Coefficient of Initial Permeability (20 -70°C) | %/°C                    |                      | 1.25               |
| Curie Temperature                                          | °C                      | T <sub>c</sub>       | >130               |
| Resistivity                                                | Ω cm                    | ρ                    | 1x10 <sup>-5</sup> |

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.

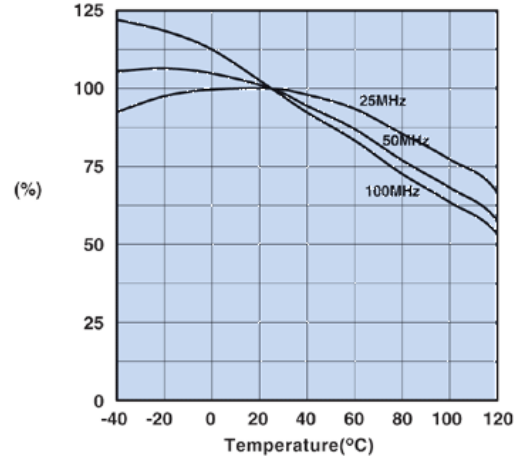
EMI suppression beads, beads on leads, SM beads, multi-aperture cores, round cable EMI suppression cores, round cable snap-its, flat cable EMI suppression cores, flat cable snap-its, miscellaneous suppression cores, bobbins, and toroids are all available in 43 material.

### Complex Permeability vs. Frequency



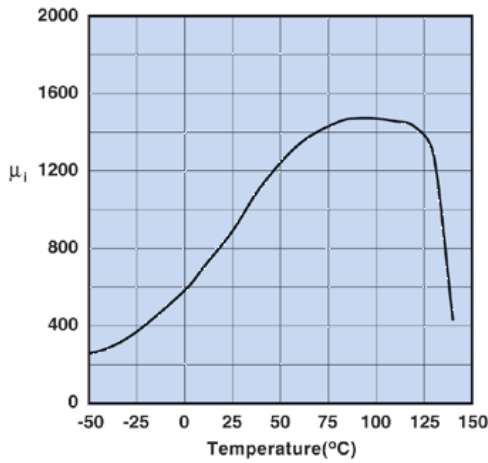
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

### Percent of Original Impedance vs. Temperature



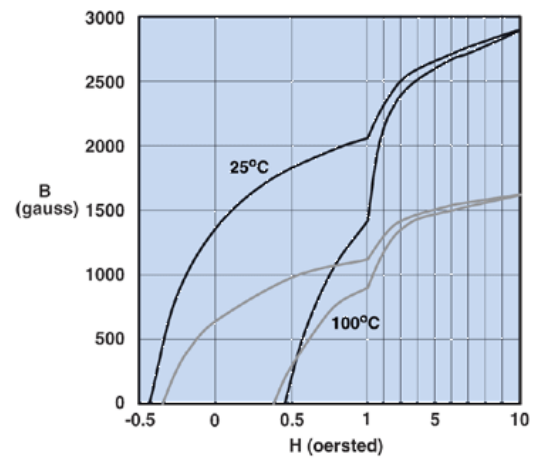
Measured on a 2643000301 using the HP4291A.

### Initial Permeability vs. Temperature



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

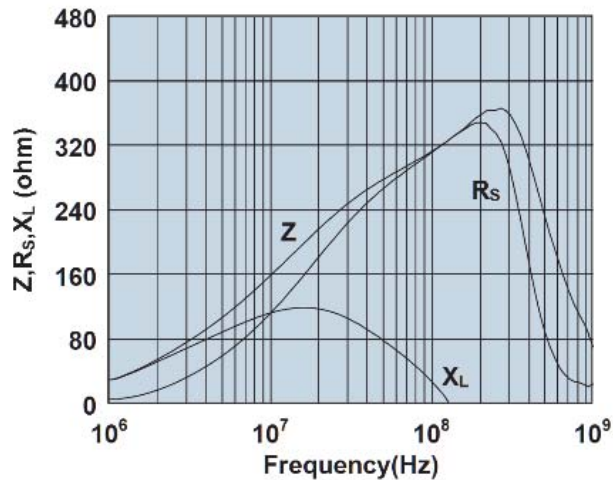
### Hysteresis Loop



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

### Impedance Curve

2643626502



Impedance, reactance, and resistance vs. frequency.