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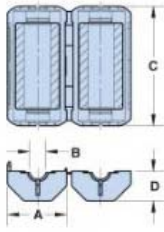


Figure 1

Part Number: 0431177081  
 Frequency Range: Lower & Broadband Frequencies 1-300 MHz (31 material)  
 Description: CSRA56/55/43-31-25 31 SPLIT ROUND CABLE ASSEMBLY  
 Application: Suppression Components  
 Where Used: Cable Component  
 Part Type: Round Cable Snap-its  
 Preferred Part:

**Part Type Information**

**Mechanical Specifications**

Weight: 308.00 (g)

[View Chart Legend](#)

| Dim | mm    | mm tol | nominal inch | inch misc. |
|-----|-------|--------|--------------|------------|
| A   | 56.40 | -      | 2.220        | -          |
| B   | 25.90 | -      | 1.020        | -          |
| C   | 42.95 | -      | 1.690        | -          |
| D   | 27.45 | -      | 1.080        | -          |
| E   | -     | -      | -            | -          |
| F   | -     | -      | -            | -          |
| G   | -     | -      | -            | -          |
| H   | -     | -      | -            | -          |
| J   | -     | -      | -            | -          |
| K   | -     | -      | -            | -          |

| Land Patterns |         |   |   |   |
|---------------|---------|---|---|---|
| V             | W (ref) | X | Y | Z |
| -             | -       | - | - | - |

| Reel Information |          |               |                |                |
|------------------|----------|---------------|----------------|----------------|
| Tape Width mm    | Pitch mm | Parts 7" Reel | Parts 13" Reel | Parts 14" Reel |
| -                | -        | -             | -              | -              |

| Winding Information |           |                 |                 |
|---------------------|-----------|-----------------|-----------------|
| Turns Tested        | Wire Size | 1st Wire Length | 2nd Wire Length |
| -                   | -         | -               | -               |

| Pkg Size |   |
|----------|---|
| -        | - |

| Connector Plate |        |
|-----------------|--------|
| # Holes         | # Rows |
| -               | -      |

| Cable Information |               |                            |                  |
|-------------------|---------------|----------------------------|------------------|
| Max Diameter      | Max Dimension | Solid Equivalent           | Flat Cable Cores |
| 25.400<br>1.000   | -             | <a href="#">2631626202</a> | -                |

**Electrical Specifications**

| Typical Impedance (Ω) |     |
|-----------------------|-----|
| 1 MHz                 | 45  |
| 5 MHz                 | 90  |
| 10 MHz <sup>+</sup>   | 125 |
| 25 MHz <sup>+</sup>   | 218 |
| 100 MHz <sup>+</sup>  | 375 |
| 250 MHz               | 340 |

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

**Ferrite Material Constants**

|                                       |   |
|---------------------------------------|---|
| Specific Heat .....                   | 0.25 cal/g <sup>o</sup> C                     |
| Thermal Conductivity .....            | 10x10 <sup>-3</sup> cal/sec/cm <sup>o</sup> C |
| Coefficient of Linear Expansion ..... | 8 - 10x10 <sup>-6</sup> / <sup>o</sup> C      |
| Tensile Strength .....                | 4.9 kgf/mm <sup>2</sup>                       |
| Compressive Strength .....            | 42 kgf/mm <sup>2</sup>                        |
| Young's Modulus .....                 | 15x10 <sup>3</sup> kgf/mm <sup>2</sup>        |
| Hardness (Knoop) .....                | 650   |
| Specific Gravity .....                | ≈ 4.7 g/cm <sup>3</sup>                       |

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

A MnZn ferrite designed specifically for EMI suppression applications from as low as 1 MHz up to 500 MHz. This material does not have the dimensional resonance limitations associated with conventional MnZn ferrite materials.

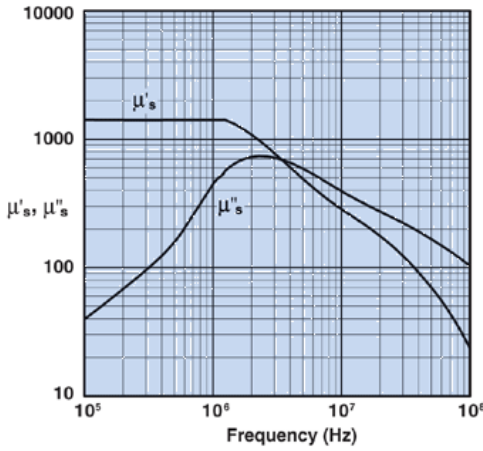
**31 Material Specifications:**

| Property                            | Unit             | Symbol         | Value     |
|-------------------------------------|------------------|----------------|-----------|
| Initial Permeability @ B < 10 gauss |                  | μ <sub>i</sub> | 1500      |
| Flux Density @ Field Strength       | gauss<br>oersted | B<br>H         | 3400<br>5 |

Round cable EMI suppression cores, round cable snap-its, flat cable EMI suppression cores, and flat cable snap-its are all available in 31 material.

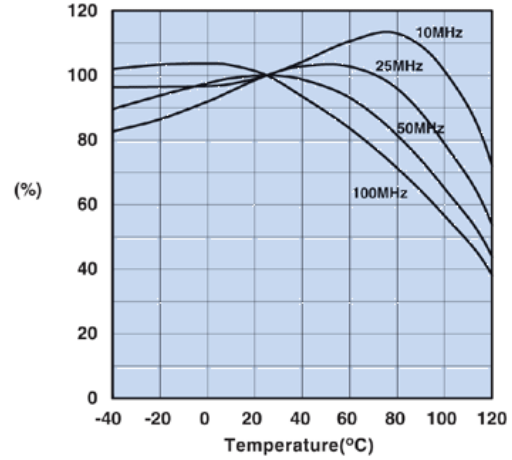
|  |               |                     |                 |
|--|---------------|---------------------|-----------------|
| Residual Flux Density                                      | gauss         | $B_r$               | 2500            |
| Coercive Force   | oersted       | $H_c$               | 0.35            |
| Loss Factor @ Frequency                                    | $10^{-2}$ MHz | $\tan \delta/\mu_i$ | 20<br>0.1       |
| Temperature Coefficient of Initial Permeability (20 -70°C) | %/°C          |                     | 1.6             |
| Curie Temperature  | °C            | $T_c$               | >130            |
| Resistivity  | $\Omega$ cm   | $\rho$              | $3 \times 10^3$ |

Complex Permeability vs. Frequency



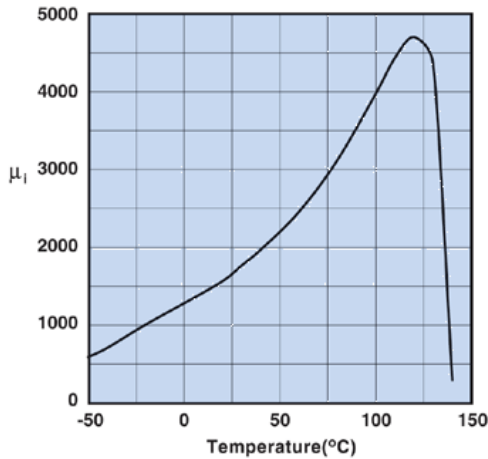
Measured on a 17/10/6mm toroid at 25°C using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



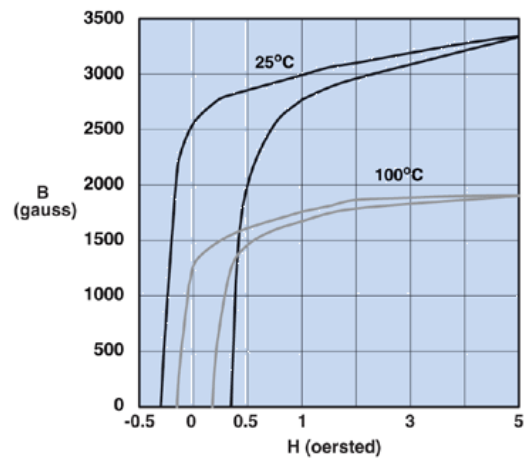
Measured on a 2631000301 using the HP4291A.

Initial Permeability vs. Temperature



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

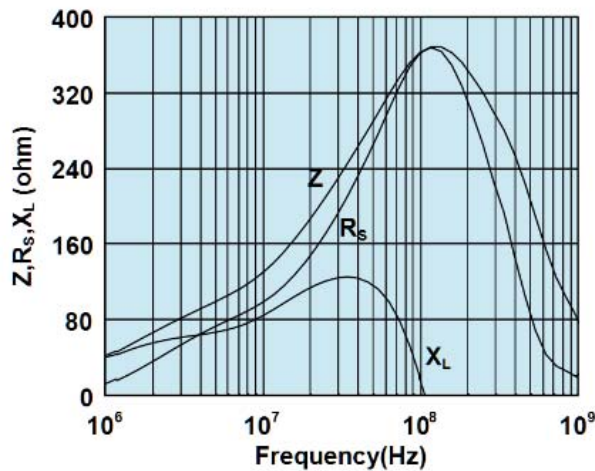
Hysteresis Loop



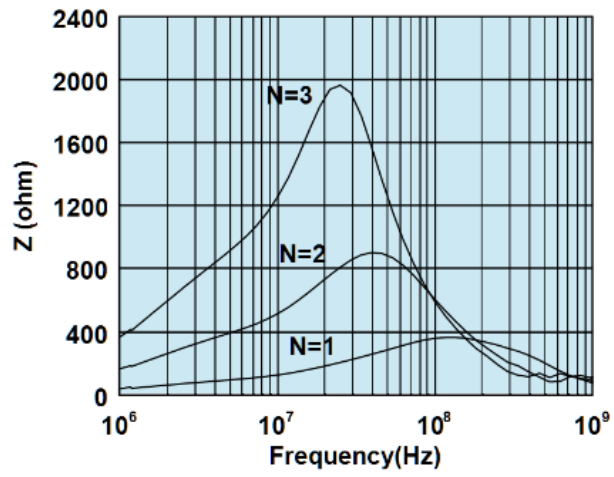
Measured on a 17/10/6mm toroid at 10kHz.

Impedance Curve

0431177081



Impedance, reactance, and resistance vs. frequency.



Impedance vs. frequency with one, two, and three turns.

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