

Figure 2

Part Number: 5698221421
 Frequency Range: Dimensions
 Description: 98 POT CORE
 Application: Inductive Components
 Where Used: Closed Magnetic Circuit
 Part Type: Pot Cores
 Generic Name: P22/13

Mechanical Specifications

Weight: 12.000 (g) per Set

Part Type Information

P9/5S, P11/7S, P14/8, P18/11, P22/13, P26/16, P30/19, P36/22

Pot cores have found application in all types of inductive devices. The core configuration provides a high degree of self-shielding. It also facilitates gapping to enhance utility for a variety of magnetic designs.

-Pot cores can be supplied with the center post gapped to a mechanical dimension or an AL value.

-AL value is measured at 1 kHz, $B < 10$ gauss.

-Weight indicated is per pair or set.

Mechanical Specifications

| Dim | mm | mm tol | nominal inch | inch misc. |
|-----|-------|-----------|-----------------|---------------|
| A | 21.60 | ±0.4 | 0.850 | - |
| B | 6.70 | ±0.1 | 0.264 | - |
| C | 14.90 | ±1.6 | 0.587 | - |
| D | 4.70 | ±0.15 | 0.185 | - |
| E | 18.20 | ±0.4 | 0.717 | - |
| F | 9.25 | ±0.15 | 0.364 | - |
| G | 3.70 | ±0.7 | 0.146 | - |
| H | 4.55 | ±0.15 | 0.179 | - |
| J | - | - | - | - |
| K | - | - | - | - |

Electrical Specifications

| Typical Impedance (Ω) | |
|--------------------------------|--|
| | |

| Electrical Properties | |
|--------------------------------|-----------|
| A_L (nH) | 4100 ±25% |
| A_e (cm ²) | 0.64800 |
| $\sum I/A$ (cm ⁻¹) | 4.80 |
| l_e (cm) | 3.12 |
| V_e (cm ³) | 2.00000 |
| A_{min} (cm ²) | .510 |

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.

$\sum I/A$ - 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

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 |
|---------|--------|
| - | - |



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.



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Ferrite Components for the Electronics Industry

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Fair-Rite Product's Catalog
Part Data Sheet, 5698221421
Printed: 2013-07-03



A low loss MnZn ferrite material for power applications up to 200 kHz.

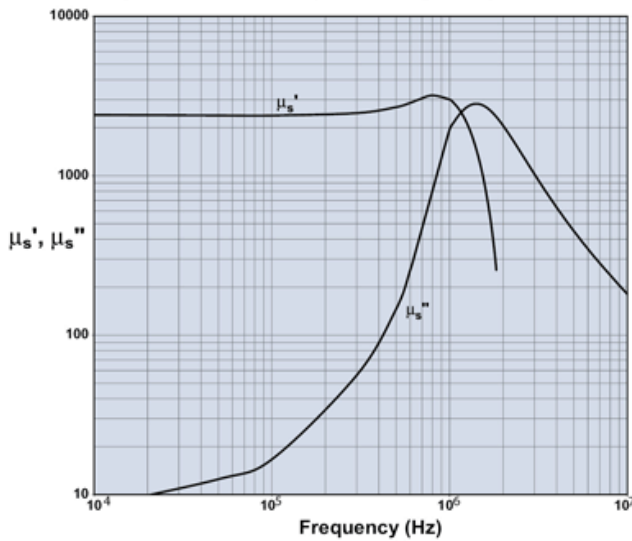
New type 98 Material is an improved version of Fair-Rite's 78 Material, this material supplies, lower power loss at 100°C at moderate flux densities for operation below 200 kHz.

Shapes available in 98 material are Toroids, U Cores, E & I Cores, Pot Cores, RM, PQ, ETD, EFD, EP, EER.

98 Material Characteristics

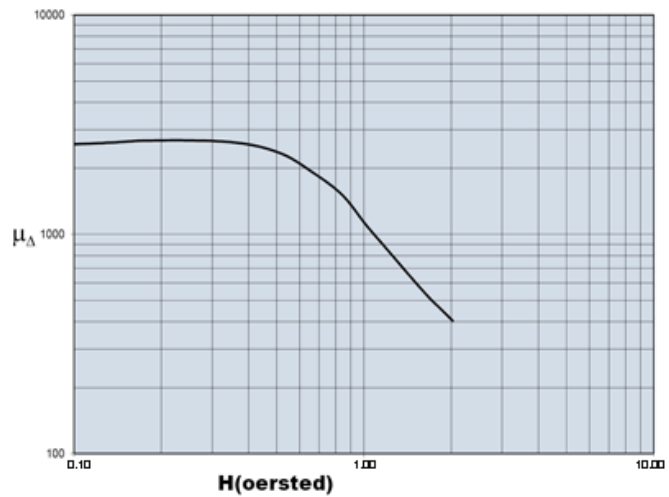
| Property | Unit | Symbol | Value |
|---|------------------|--------------------|------------|
| Initial Permeability @ B < 10gauss | | μ_i | 2400 |
| Flux Density @ Field Strength | gauss oersted | B H | 5000 5 |
| Residual Flux Density | gauss | B_r | 1800 |
| Coercive Force | oersted | H_c | 0.17 |
| Loss Factor @ Frequency | 10^{-6} MHz | $\tan\delta/\mu_i$ | 3.5 0.1 |
| Temperature Coefficient of Initial Permeability (20 - 70°C) | % / °C | | 1.5 |
| Curie Temperature | °C | T_c | > 215 |
| Resistivity | ohm-cm | ρ | 200 |

Complex Permeability vs. Frequency

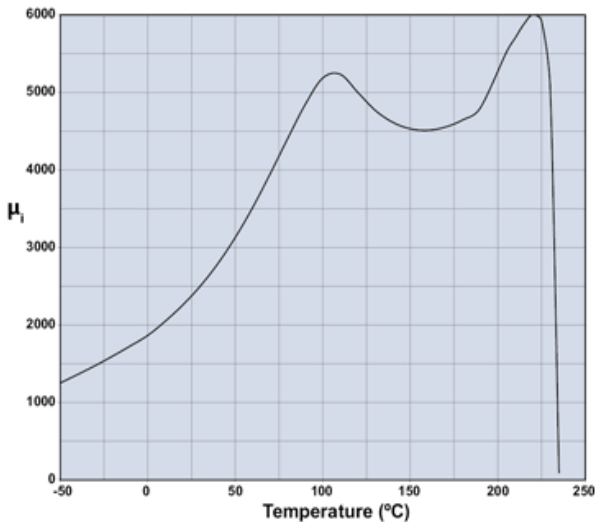


Measured on an 18/10/6mm toroid using HP 4284A and HP4291A.

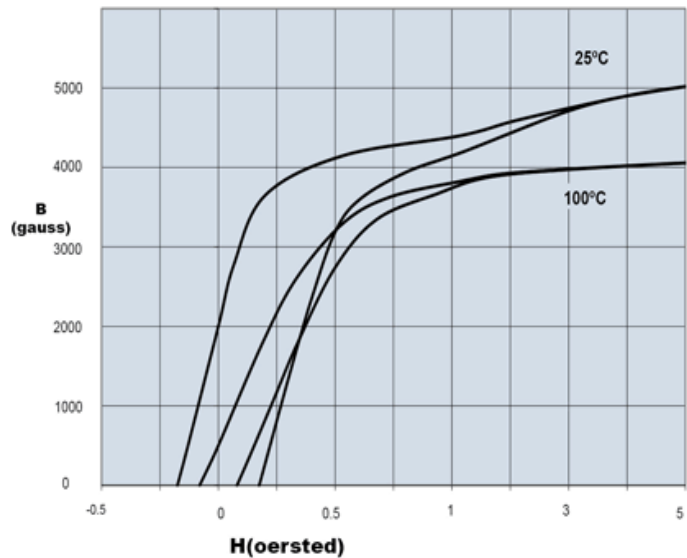
Incremental Permeability vs. H



Initial Permeability vs. Temperature



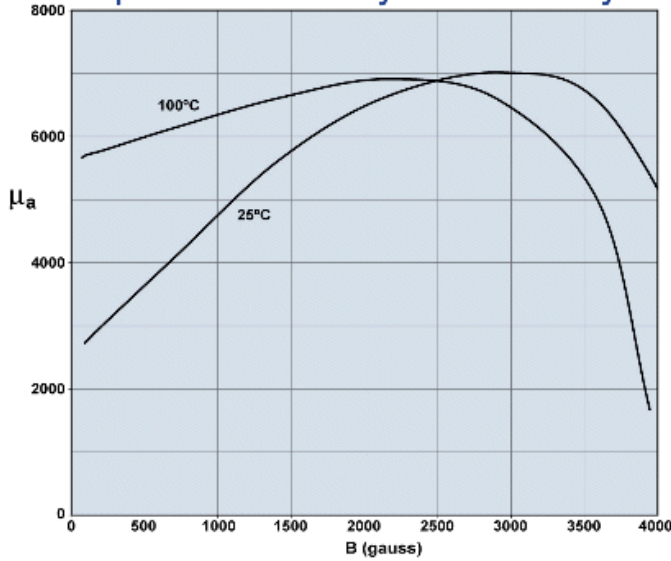
Hysteresis Loop





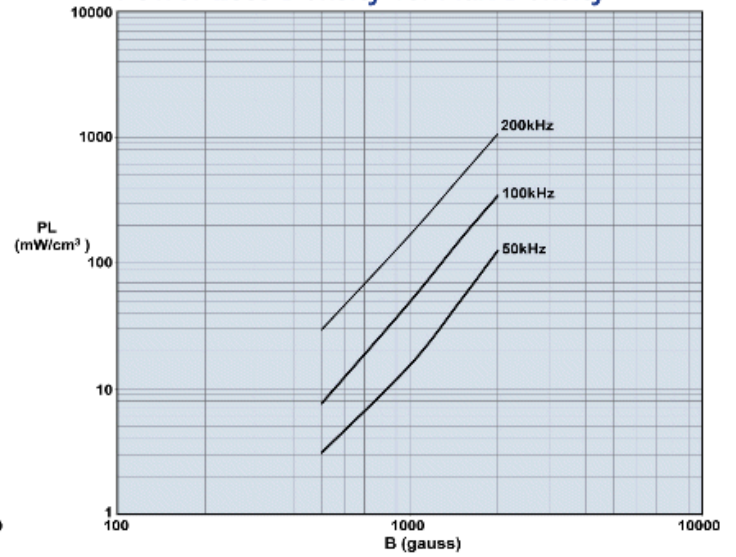
A low loss MnZn ferrite material for power applications up to 200kHz.

Amplitude Permeability vs. Flux Density



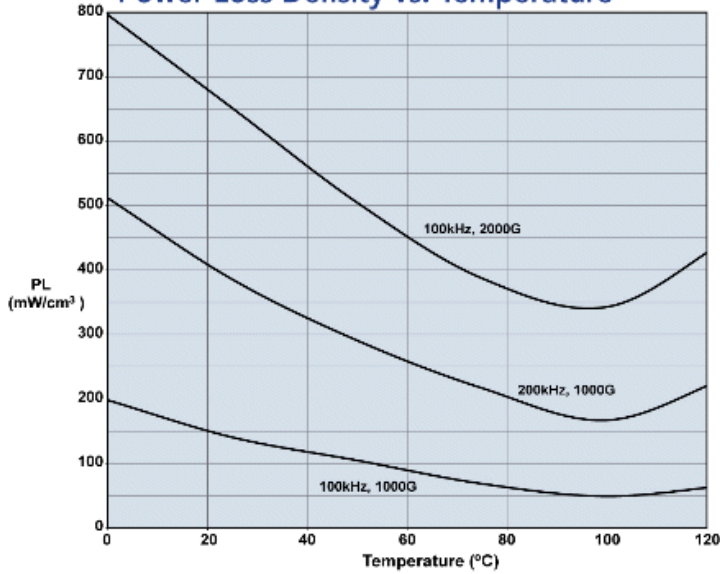
Measured on an 18/10/6mm toroid at 10kHz.

Power Loss Density vs. Flux Density



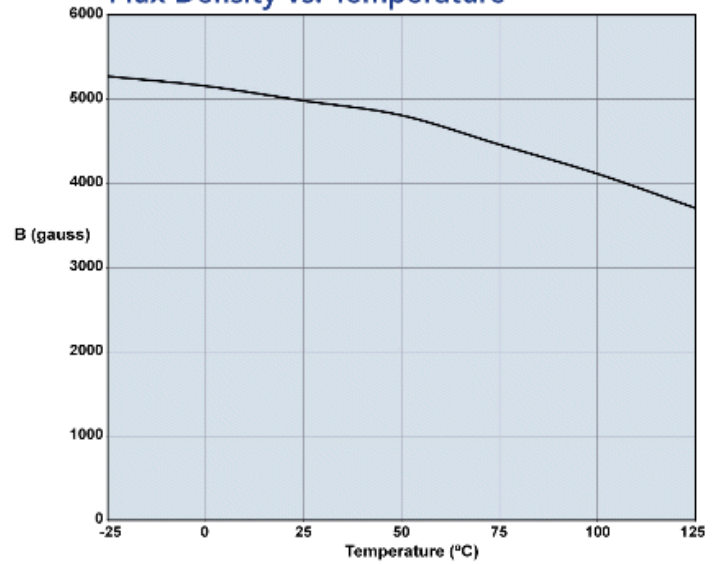
Measured on an 18/10/6mm toroid using the Clarke Hess 258 VAW at 100°C.

Power Loss Density vs. Temperature



Measured on an 18/10/6mm toroid using the Clarke Hess 258 VAW.

Flux Density vs. Temperature



Measured on an 18/10/6mm toroid at 10kHz and H=5 oersted.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<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.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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