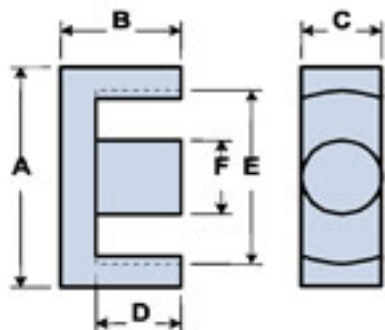




Part Number: 9595404602

Frequency Range: Dimensions

Description: 95 EER CORE

Application: Inductive Components

Where Used: Closed Magnetic Circuit

Part Type: EER Cores

Generic Name: EER40/46

## Mechanical Specifications

Weight: 80.000 (g) per Set

## Part Type Information

EER25.5/18, EER28/28, EER28/34, EER35/42, EER40/46, EER42/44, EER49/54

EER cores, similar to ETD cores, have been designed to make optimum use of a given volume of ferrite material for maximum throughput power. The structure, which includes a round center post, approaches a nearly uniform cross-sectional area that minimizes winding losses.

-EER cores can be supplied with the centerpost 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<br>tol | nominal<br>inch | inch<br>misc. |
|-----|-------|-----------|-----------------|---------------|
| A   | 40.00 | ± 0.7     | 1.575           | -             |
| B   | 22.90 | ± 0.3     | 0.902           | -             |
| C   | 13.30 | ± 0.3     | 0.524           | -             |
| D   | 15.90 | ± 0.3     | 0.626           | -             |
| E   | 29.50 | min       | 1.161           | min           |
| F   | 13.30 | ± 0.3     | 0.524           | -             |
| G   | -     | -         | -               | -             |
| H   | -     | -         | -               | -             |
| J   | -     | -         | -               | -             |
| K   | -     | -         | -               | -             |

## Electrical Specifications

| Typical Impedance ( $\Omega$ ) |  |
|--------------------------------|--|
|                                |  |

| Electrical Properties            |           |
|----------------------------------|-----------|
| $A_L$ (nH)                       | 4200 ±25% |
| $A_e$ (cm <sup>2</sup> )         | 1.44000   |
| $\Sigma I/A$ (cm <sup>-1</sup> ) | 6.90      |
| $l_e$ (cm)                       | 10.00     |
| $V_e$ (cm <sup>3</sup> )         | 14.42000  |
| $A_{min}$ (cm <sup>2</sup> )     | 1.300     |

## Land Patterns

| V | W<br>ref | X | Y | Z |
|---|----------|---|---|---|
| - | -        | - | - | - |
| - | -        | - | - | - |

## Winding Information

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

## Reel Information

| Tape Width<br>mm | Pitch<br>mm | Parts 7 "<br>Reel | Parts 13 "<br>Reel | Parts 14 "<br>Reel |
|------------------|-------------|-------------------|--------------------|--------------------|
| -                | -           | -                 | -                  | -                  |

## Package Size

| Pkg Size |
|----------|
| -<br>(-) |

## 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.

$\Sigma I/A$  - 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



## Ferrite Material Constants

|                                       |                                        |
|---------------------------------------|----------------------------------------|
| Specific Heat .....                   | 0.25 cal/g/°C                          |
| Thermal Conductivity .....            | <b>3.5 - 4.5 mW/cm - °C</b>            |
| Coefficient of Linear Expansion ..... | 8 - 10x10 <sup>-6</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.*

See next page for further material specifications.



# Fair-Rite Products Corp. Your Signal Solution®

Ferrite Components for the Electronics Industry

Fair-Rite Products Corp. PO Box J, One Commercial Row, Wallkill, NY 12589-0288  
Phone: (888) 324-7748 www.fair-rite.com

Fair-Rite Product's Catalog  
Part Data Sheet, 9595404602  
Printed: 2013-07-03



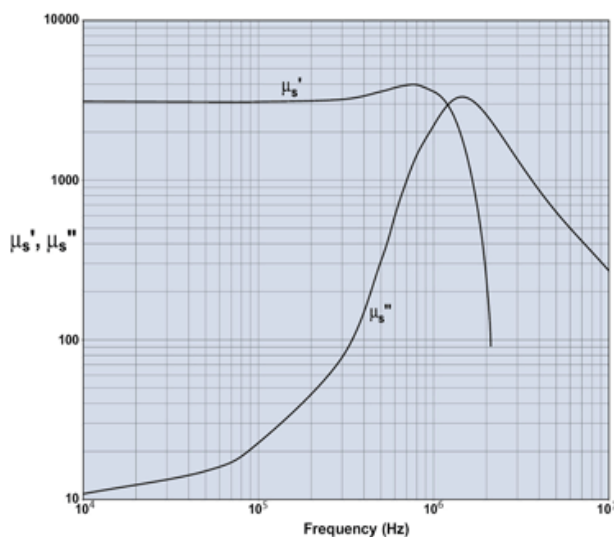
A low loss MnZn ferrite material for power applications up to 200 kHz with low temperature variation. New type 95 Material is a low loss power material, which features less power loss variation over temperature (25-120°C) at moderate flux densities for operation below 200 kHz.

Shapes available in 95 material are Toroids, U cores, Pot Cores, RM, PQ, EFD, EP.

## 95 Material Characteristics

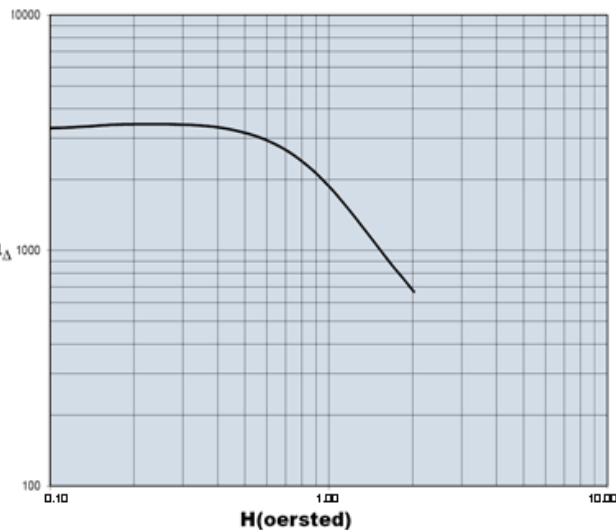
| Property                                                    | Unit             | Symbol                | Value      |
|-------------------------------------------------------------|------------------|-----------------------|------------|
| Initial Permeability @ B < 10 gauss                         |                  | $\mu_i$               | 3000       |
| Flux Density @ Field Strength                               | gauss<br>oersted | B<br>H                | 5000<br>5  |
| Residual Flux Density                                       | gauss            | $B_r$                 | 800        |
| Coercive Force                                              | oersted          | $H_c$                 | 0.13       |
| Loss Factor @ Frequency                                     | $10^{-6}$<br>MHz | $\tan \delta / \mu_i$ | 3.0<br>0.1 |
| Temperature Coefficient of Initial Permeability (20 - 70°C) | % / °C           |                       | 0.4        |
| Curie Temperature                                           | °C               | $T_c$                 | > 220      |
| Resistivity                                                 | ohm-cm           | $\rho$                | 200        |

## Complex Permeability vs. Frequency

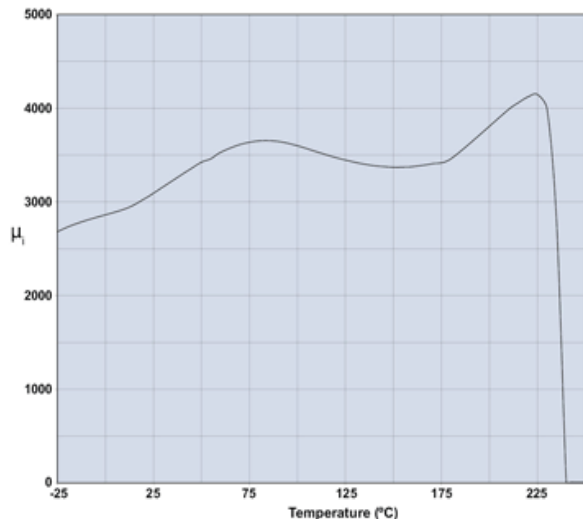


Measured on an 18/10/6mm toroid using HP 4284A and HP4291A.

## Incremental Permeability vs. H

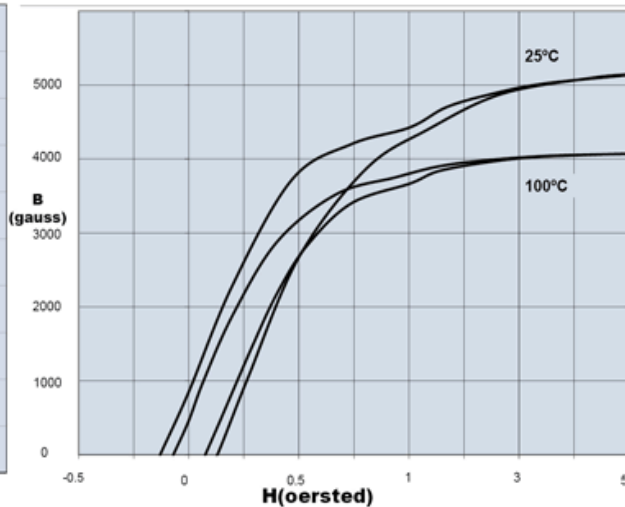


## Initial Permeability vs. Temperature



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

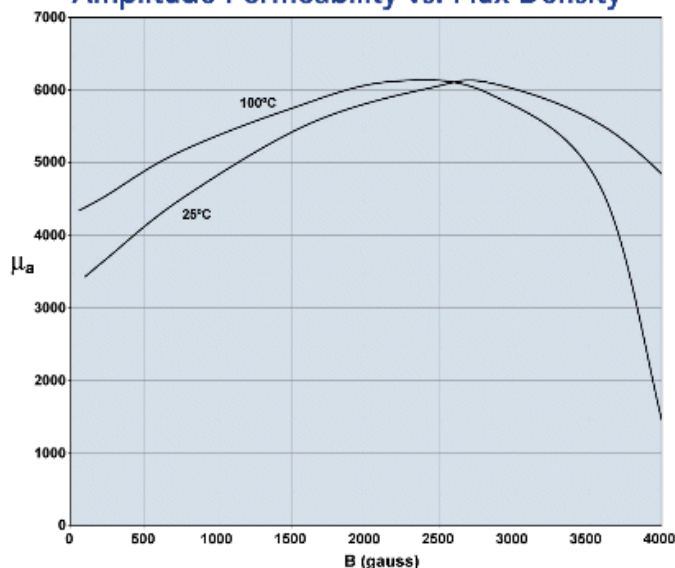
## Hysteresis Loop



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

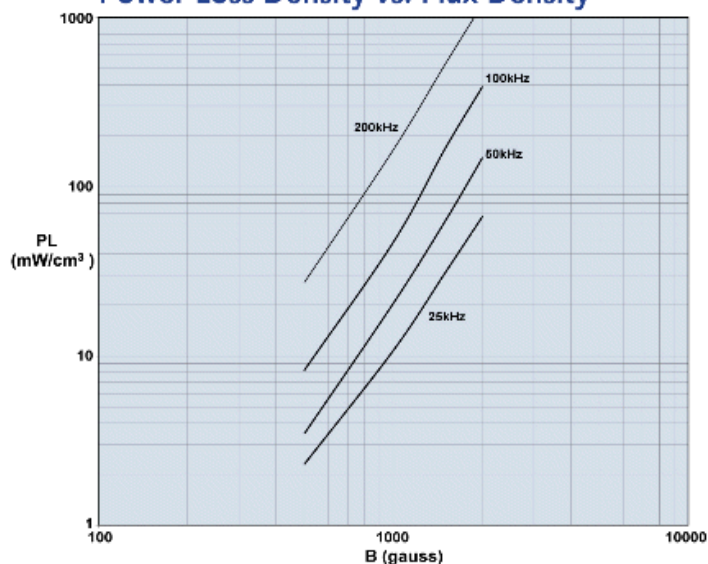
A low loss MnZn ferrite material for power applications up to 200kHz with low temperature variation.

**Amplitude Permeability vs. Flux Density**



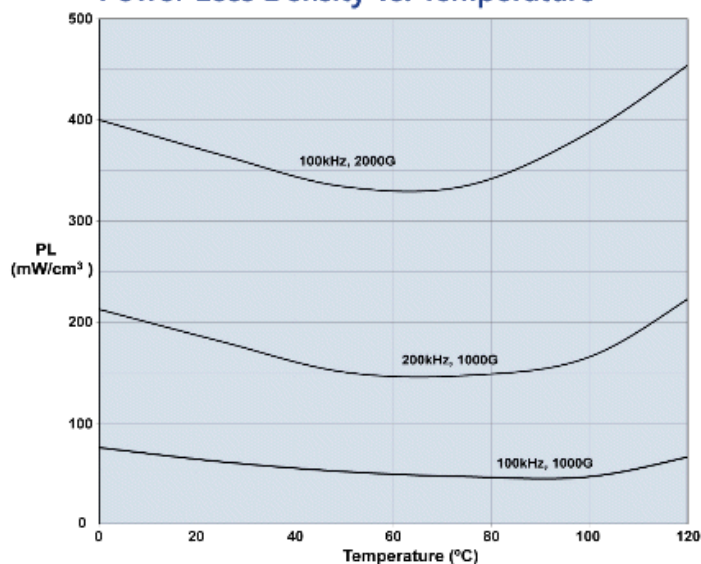
Measured on an 18/10/6mm toroid at 10kHz.

**Power Loss Density vs. Flux Density**



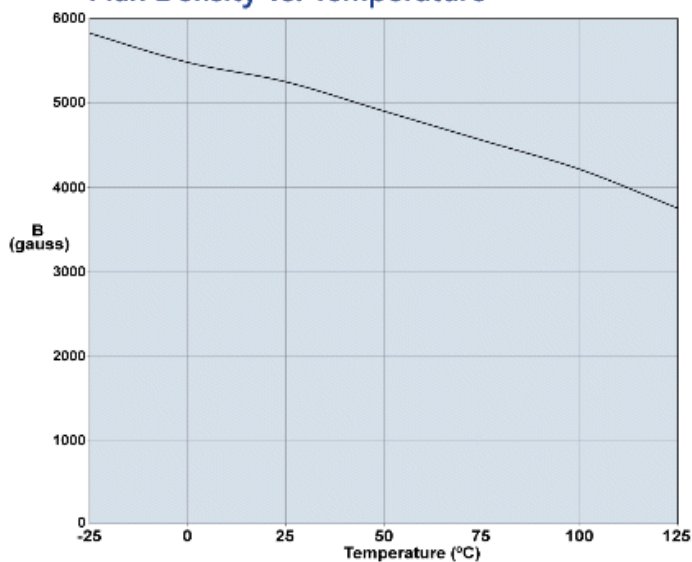
Measured on an 18/10/6mm toroid using the Clarke Hess 258 VAW at 100°C.

**Power Loss Density vs. Temperature**



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

**Flux Density vs. Temperature**



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

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

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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