

**Figure 3**

Part Number:	2843010302
Frequency Range:	Suppression Applications for Broadband Frequencies 20-300 MHz (43 material)
Description:	43 MULTI-APERTURE CORE
Application:	Suppression Components
Where Used:	Board Component
Part Type:	Multi-Aperture cores
Preferred Part:	✓

## Mechanical Specifications

Weight: 18.000 (g)

## Part Type Information

Multi-aperture cores are used in suppression applications and in balun (balance-unbalance) and other broadband transformers. They are also employed in airbag designs to prevent accidental activation.

-All multi-aperture cores are supplied burnished.

-Multi-aperture cores in 73 and 43 materials are controlled for impedance only. The 61 NiZn material is controlled for both impedance and AL value. The high frequency 67 material is controlled for AL value. All listed impedance values are typical values. Minimum impedance values are specified for the + marked frequencies. The minimum guaranteed impedance is the listed typical impedance less 20%.

-Multi-aperture cores in 73 and 43 material are measured for impedance on the 4193A Vector Impedance Analyzer. The 61 multi-aperture cores are tested on the 4191A Impedance Analyzer. All impedance measurements are performed with a single turn to both holes, using the shortest practical wire length.

-The 61 and 67 material multi-hole beads are tested for AL value. The test frequency is 10 kHz at < 10 gauss. The test winding is five turns wound through both holes.

-Preferred multi-aperture cores are the suggested choice for new designs. Samples are readily available and orders have typically shorter lead times than other multi-aperture cores. For any multi-aperture requirement not listed here, feel free to contact our customer service group for availability and pricing.

-Our 'Multi-Aperture Core Kit' (part number 0199000036) is available for proto type evaluation.

-Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade last digit 2 = burnished.



## Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	19.45	±0.40	0.765	-
B	25.40	±0.70	1.000	-
C	9.50	±0.25	0.375	-
D	-	-	-	-
E	9.90	±0.25	0.390	-
F	-	-	-	-
G	-	-	-	-
H	4.75	±0.20	0.187	-
J	-	-	-	-
K	-	-	-	-

## Electrical Specifications

Typical Impedance ( $\Omega$ )	
25 MHz	295
100 MHz+	400

Electrical Properties	

## 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 .....	10x10 <sup>-3</sup> cal/sec/cm/°C
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.



### 43 Material Characteristics:

Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		$\mu_i$	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	$\Omega$ cm	$\rho$	$1 \times 10^5$

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.

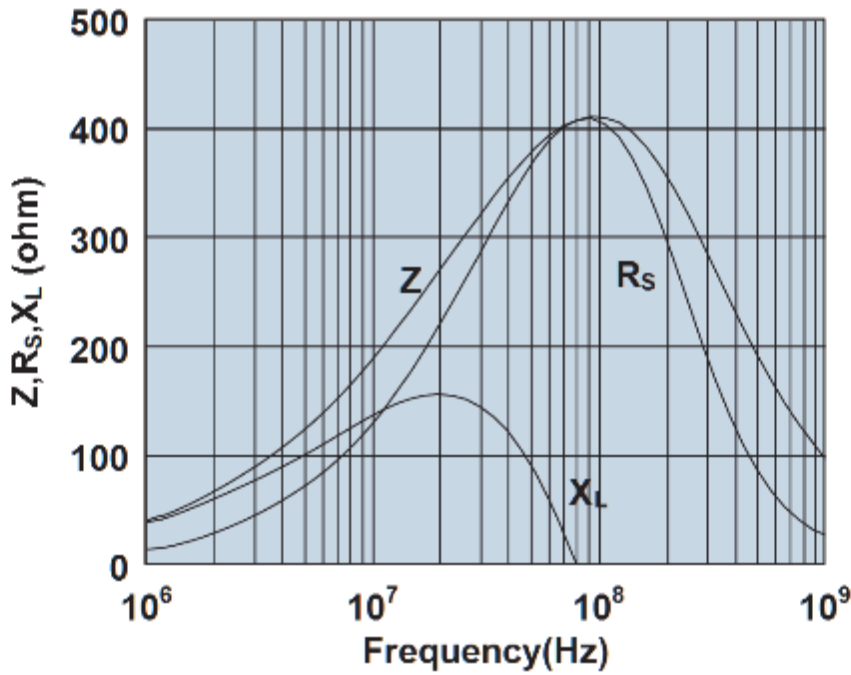
**Hysteresis Loop**



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



### 2843010302



Impedance, reactance, and resistance vs. frequency.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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