



Figure 2

Part Number: 9843000104
 Frequency Range: High Frequency Designs
 Description: 43 BOBBIN RECTANGULAR
 Application: Inductive Components
 Where Used: Open Magnetic Circuit
 Part Type: Bobbins

Mechanical Specifications

Weight: 3.000 (g)

Part Type Information

Bobbins are an economical and well-proven core design for many applications where relatively low but stable inductance values are required.

- For higher frequency designs, use small bobbins in 43 material.
- For power applications, bobbins in 77 material are specified for AL and dc bias limits.
- Bobbins in Figures 2-5 can be supplied with a uniform coating of thermo-set plastic coating which can withstand a minimum breakdown of 500Vrms. This coating will change the dimensions a maximum of 0.5mm (.020"). The last digit of the thermo-set plastic coated part is an '8'.
- The listed dimensions are for assembled bobbins without thermo-set plastic.
- Bobbins are tested for AL value at 1kHz < 10 gauss.
- For any bobbin requirement not listed in the catalog, please contact our customer service group for availability and pricing.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade, last digit 8 = coated bobbin.



Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	8.05	±0.20	0.317	-
B	19.00	±0.40	0.750	-
C	-	-	-	-
D	12.70	±0.25	0.500	-
E	-	-	-	-
F	5.55	+0.25	0.225	-
G	2.70	+0.25	0.111	-
H	8.05	±0.20	0.317	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)	

Electrical Properties	
A_L (nH)	38.0 ±10%
A_L min. @ NI (At)	-
N/AWG	50/28
A_w (cm ²)	.33

Land Patterns

V	W ref	X	Y	Z
-	-	-	-	-
-	-	-	-	-

Winding Information

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

Reel Information

Tape Width mm	Pitch mm	Parts 7 " Reel	Parts 13 " Reel	Parts 14 " 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.

$\sum l/A$ - 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	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.



43 Material Characteristics:

Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ_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	Ω cm	ρ	1×10^5

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.