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Catalog Part Search: 5943001001

Low Permeability, 67 (ui=40) material

Low Permeability, 68 (ui=16) material

Low Permeability, 61 (ui=125) material

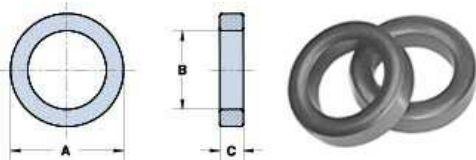
Low-Medium Permeability, 52 (ui=250) material

Low-Medium Permeability, 43 (ui=800) material

Medium Permeability, 77 (ui=2000) & 78 (ui=2300) materials

High Permeability, 75 (ui=5000) material

High Permeability, 76 (ui=10,000) material



Part Number: 5943001001

Generic Name:

Frequency Range: Low-Medium Permeability, 43 (ui=800) material

Description: 43 TOROID

Application: Inductive Components

Where Used: Closed Magnetic Circuit

Part Type: Toroids

Part Type Information

A ring configuration provides the ultimate utilization of the intrinsic ferrite material properties. Toroidal cores are used in a wide variety of applications such as power input filters, ground-fault interrupters, common-mode filters and in pulse and broadband transformers.

- Toroids are listed by initial permeability classes and increasing dimension of the inside diameter.
- All toroidal cores are supplied burnished to break sharp edges.
- Toroids are tested for AL values at 10 kHz.
- Toroids with an outside diameter of 9.5mm (.375") or smaller can be supplied Parylene C coated. The Parylene coating will increase the "A" and "C" dimensions and decrease the "B" dimension a maximum of 0.038mm (.0015"). The ninth digit of a Parylene coated toroid part number is a "1". [Click to see the material characteristics of Parylene C.](#) Parylene C coating is RoHS compliant.
- Toroids with an outside diameter of 9.5mm (.375") or larger can be supplied with a uniform coating of thermo-set plastic coating. This coating will increase the "A" and "C" dimensions and decrease the "B" dimension a maximum of 0.5mm (.020"). The 9th digit of the thermo-set plastic coated toroid part number is a "2". Thermo-set plastic coating is RoHS compliant.
- Thermo-set plastic coated parts can withstand a minimum breakdown voltage of 1000 Vrms, uniformly applied across the "C" dimension of the toroid.
- The "C" dimension may be modified to suit specific applications.
- For any toroidal core requirement not listed in the catalog, please contact our customer service department for availability and pricing.
- Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade, 9th digit 1 = Parylene coating, 2 = thermo-set plastic coating.

Mechanical Specifications

Weight: 13.00 (g)

Chart Legend
 ΣVA : Core Constant, l_e : Effective Path Length, A_e : Effective Cross-Sectional Area, V_e : Effective Core Volume
 AL : Inductance Factor $\left(\frac{1}{\mu_r}\right)$

Dim	mm	mm tol	nominal inch	inch misc.	Land Patterns					Winding Information				
					V	W (ref)	X	Y	Z	Turns Tested	Wire Size	1st Wire Length	2nd Wire Length	
A	29.00	±0.65	1.142	-	-	-	-	-	-	-	-	-	-	-
B	19.00	±0.50	0.748	-	-	-	-	-	-	-	-	-	-	-
C	7.50	±0.25	0.295	-	Reel Information					Pkg Size				
D	-	-	-	-	Tape Width mm	Pitch mm	Parts 7" Reel	Parts 13" Reel	Parts 14" Reel	Connector Plate				
E	-	-	-	-										
F	-	-	-	-	Cable Information		# Holes		# Rows					
G	-	-	-	-										
H	-	-	-	-	Max Diameter	Max Dimension	Solid Equivalent	Flat Cable Cores						
J	-	-	-	-										
K	-	-	-	-	-	-	-	-						

Electrical Specifications

Typical Impedance (Ω)	
-	-

Electrical Properties	
$A_L(\text{nH})$	510 \pm 20%
$A_e(\text{cm}^2)$	0.37000
$\Sigma/A(\text{cm}^{-1})$	19.80
$l_e(\text{cm})$	7.30
$V_e(\text{cm}^3)$	2.70000

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.

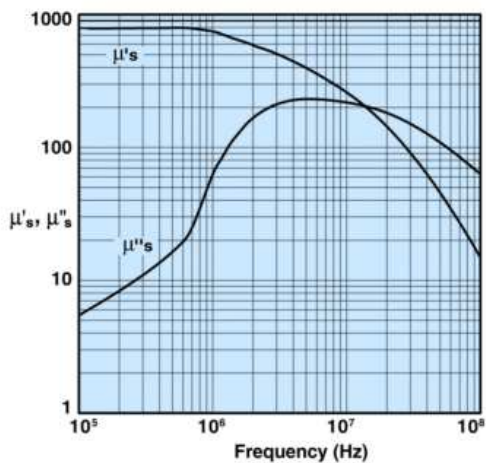
This NiZn is our most popular ferrite for suppression of conducted EMI from 20 MHz to 250 MHz. This material is also used for inductive applications such as high frequency common-mode chokes.

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.

43 Material Characteristics:

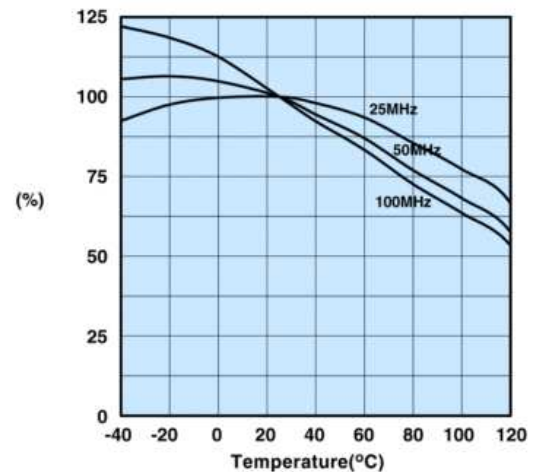
Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ_i	800
Flux Density @ Field Strength	gauss oersted	B H	2900 10
Residual Flux Density	gauss	B_r	1300
Coercive Force	oersted	H_c	0.45
Loss Factor @ Frequency	10 ⁻⁶ MHz	$\tan \delta / \mu_i$	250 1.0
Temperature Coefficient of Initial Permeability (20 - 70°C)	%/°C		1.25
Curie Temperature	°C	T_c	>130
Resistivity	Ω cm	ρ	1x10 ⁸

Complex Permeability vs. Frequency



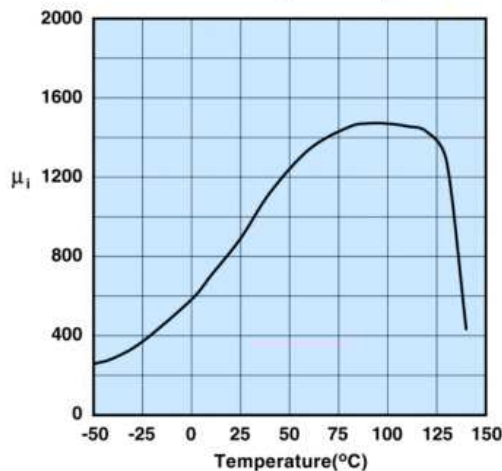
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

Percent of Original Impedance vs. Temperature



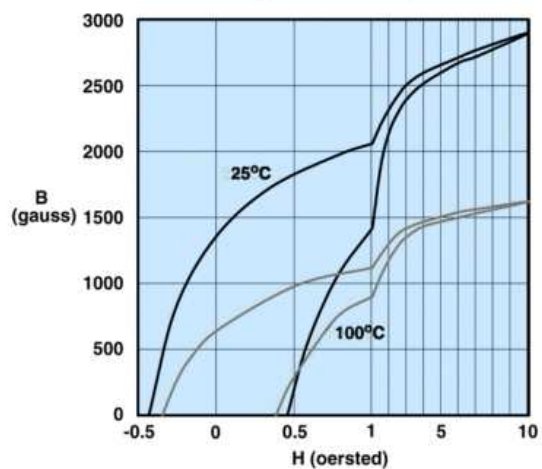
Measured on a 2643000301 using the HP4291A.

Initial Permeability vs. Temperature



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

Hysteresis Loop



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