

Figure 1  
Common-Mode Bead

Land Pattern  
for Fig. 1  
E = Z

**Part Number:** 2744045447  
**Frequency Range:** Broadband Frequencies 10-300 MHz (44 material)  
**Description:** CMS2.9/5.6/8.5-44 44 COMMON MODE SM BEAD  
**Application:** Suppression Components  
**Where Used:** Board Component  
**Part Type:** SM Beads (Common-Mode)  
**Preferred Part:** ✓

**Part Type Information**

**Mechanical Specifications**

**Weight:** 0.53 (g)

[View Chart Legend](#)

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	2.85	±0.20	0.112	-	4.000 0.158	7.000 0.276	1.800 0.071	3.000 0.118	2.540 0.100	-	-	-	-
B	5.60	±0.20	0.220	-	<b>Reel Information</b> Tape Width mm: 16, Pitch mm: 8, Parts 7" Reel: -, Parts 13" Reel: 2400, Parts 14" Reel: -					<b>Pkg Size</b> -			
C	8.90	-0.80	0.335	-						<b>Connector Plate</b> # Holes: -, # Rows: -			
D	1.35	±0.50	0.053	-	<b>Cable Information</b> Max Diameter: -, Max Dimension: -, Solid Equivalent: -, Flat Cable Cores: -								
E	2.54	±0.10	0.100	-									
F	-	-	-	-									
G	-	-	-	-									
H	-	-	-	-									
J	-	-	-	-									
K	-	-	-	-									

**Electrical Specifications**

Typical Impedance (Ω)	
10 MHz	23
25 MHz†	38
100 MHz†	60
250 MHz	78
300 MHz	-

Electrical Properties	
Max Rdc(mΩ)	1.40

**Ferrite Material Constants**

Specific Heat .....	0.25 cal/g°C
Thermal Conductivity .....	10x10 <sup>-3</sup> cal/sec/cm <sup>2</sup> °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.*

**44 Material Specifications:**

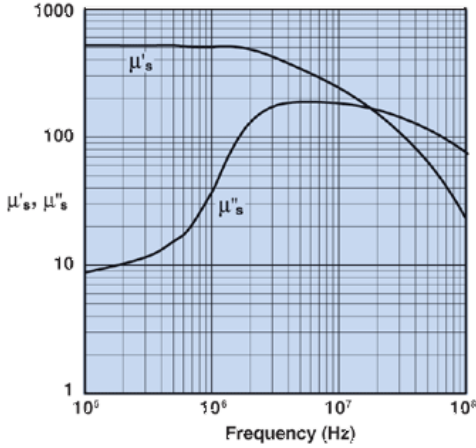
A NiZn ferrite developed to combine a high suppression performance, from 30 MHz to 500 MHz, with a very high dc resistivity.

SM beads, PC beads, wound beads, round cable snap-its, and connector EMI suppression plates are all available in 44 material.

Property	Unit	Symbol	Value
Initial Permeability @ B < 10 gauss		μ <sub>i</sub>	500
Flux Density @ Field Strength	gauss oersted	B H	3000 10
Residual Flux Density	gauss	B <sub>r</sub>	1100
Coercive Force	oersted	H <sub>c</sub>	0.45
Loss Factor @ Frequency	10 <sup>-5</sup> MHz	tan δ/μ <sub>i</sub>	125 1.0

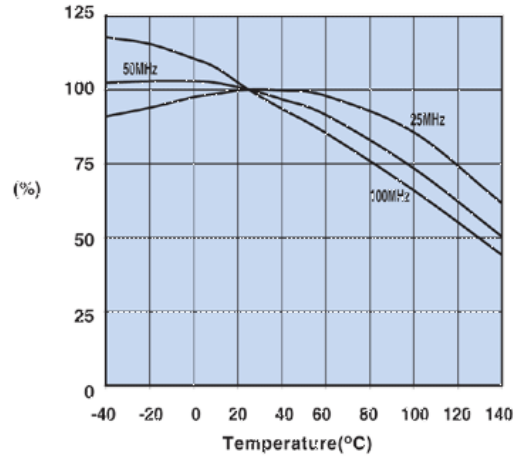
Temperature Coefficient of Initial Permeability (20-70°C)	%/°C		0.75
Curie Temperature	°C	$T_c$	>160
Resistivity	$\Omega$ cm	$\rho$	$1 \times 10^{-9}$

### Complex Permeability vs. Frequency



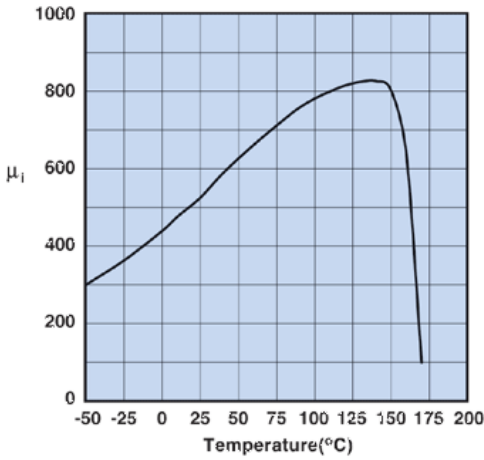
Measured on a 17/10/6mm toroid using the HP 4284A and the HP 4291A.

### Percent of Original Impedance vs. Temperature



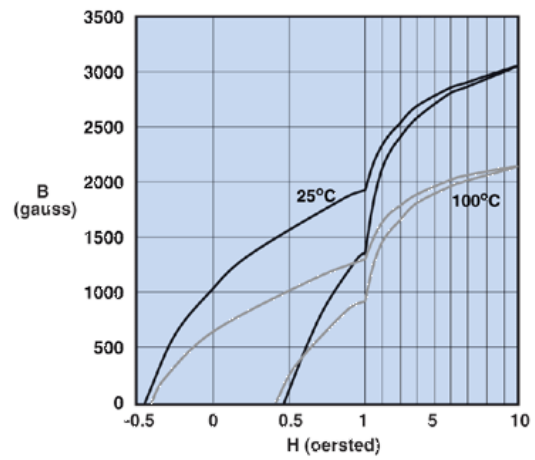
Measured on a 26440C0301 using the HP4291A.

### Initial Permeability vs. Temperature



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

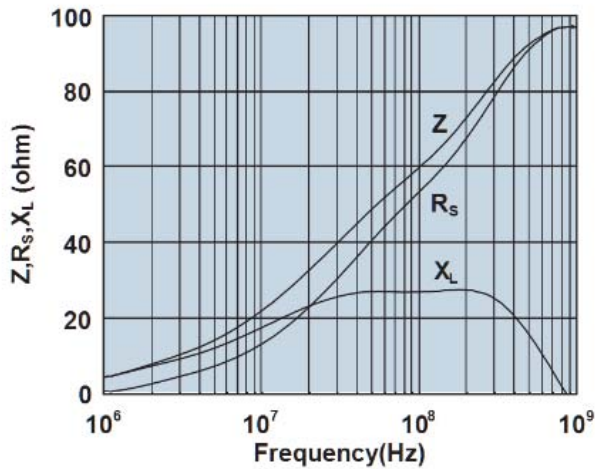
### Hysteresis Loop



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

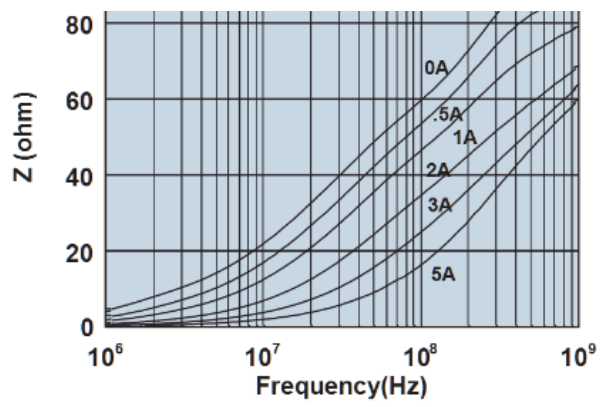
### Impedance Curve

2744045447



Impedance, reactance, and resistance vs. frequency.





Impedance vs. frequency with dc bias.