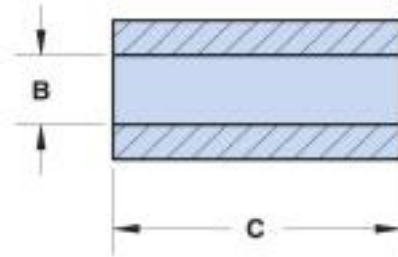
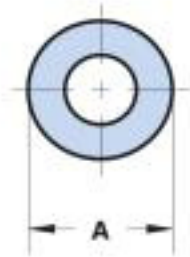




Application:           Suppression Components  
Where Used:           Board Component  
Part Type:             EMI Suppression Beads





Frequency Range: Higher Frequencies 250-1000 MHz (61 material)

Application: Suppression Components

Where Used: Board Component

Part Type: EMI Suppression Beads

## Part Type Information

Fair-Rite offers a broad selection of ferrite EMI suppression beads with guaranteed minimum impedance specifications.

-Beads with a '1' as the last digit of the part number are not burnished. Parts that are burnished to break the sharp edges have a '2' as the last digit.

-Upon request beads can be supplied with a Parylene coating. The last digit of the Parylene coated part is a '4'. The minimum coating thickness beads is 0.005 mm (.0002").

-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 [www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf](http://www.fair-rite.com/newfair/pdf/CUP%20Paper.pdf) document for 'How to choose Ferrite Components for EMI Suppression.

-Suppression beads are controlled for impedances only. Minimum impedance values are specified for the + marked frequencies. The minimum impedance is typically the listed impedance less 20%.

-Single turn impedance tests for 73 and 43 material beads are performed on the 4193A Vector Impedance Analyzer. The 61 material beads are tested on the 4291A RF Impedance Analyzer. Beads are tested with the shortest practical wire length.

-For any EMI suppression bead requirement not listed here, feel free to contact our customer service for availability and pricing.

-The 'C' dimension, the bead length, can be modified to suit specific applications.

-Our 'Shield Bead Kit' (part number 0199000019) contains a selection of these beads.

-Explanation of Part Numbers: Digits 1&2 = product class, 3&4 = material grade and last digit 1= not burnished, 2 = burnished and 4 = Parylene coated.



Part Number: 2661000101  
Description: 61 SHIELD BEAD  
Preferred Part: ✓  
Weight: .100 (g)

### Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	3.50	±0.20	0.138	-
B	1.30	±0.10	0.051	-
C	3.25	±0.25	0.128	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	30
250 MHz+	45
500 MHz+	62
1000 MHz	95

Electrical Properties	
H(Oe)	2.00

### 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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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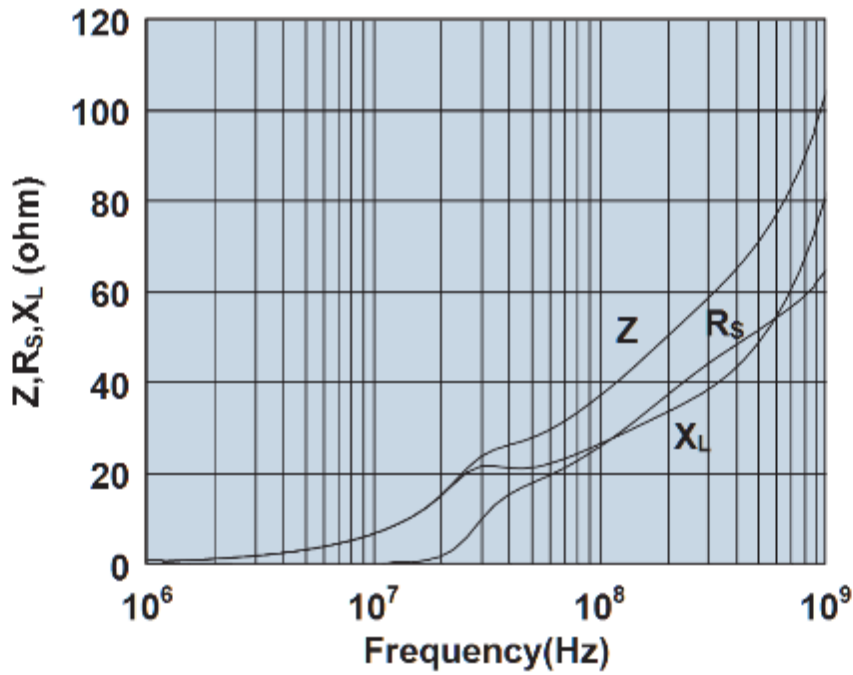
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Fair-Rite Product's Catalog  
Part Data Sheet, 2661000101  
Printed: 2013-07-03



### 2661000101



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661000301  
Description: 61 SHIELD BEAD  
Preferred Part: ✓  
Weight: .180 (g)

### Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	3.50	±0.20	0.138	-
B	1.30	±0.10	0.051	-
C	6.00	±0.25	0.236	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	54
250 MHz+	82
500 MHz+	103
1000 MHz	120

Electrical Properties	
H(Oe)	2.00

### Land Patterns

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

### Winding Information

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

### 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.

∑l/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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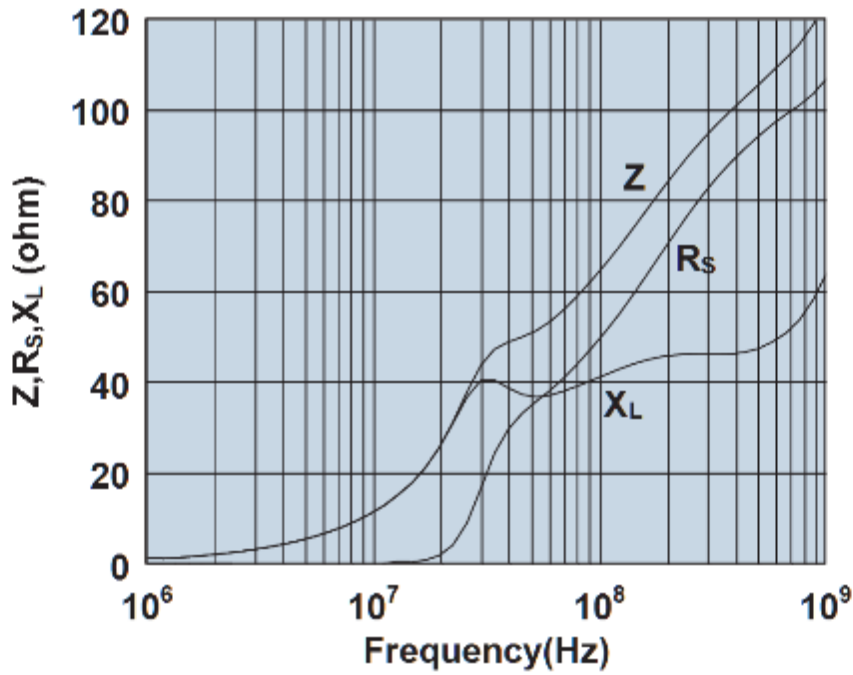
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Part Data Sheet, 2661000301  
Printed: 2013-07-03



### 2661000301



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661000701  
Description: 61 SHIELD BEAD  
Weight: .380 (g)  
Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	3.50	±0.20	0.138	-
B	1.30	±0.10	0.051	-
C	12.70	±0.35	0.500	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	120
250 MHz+	158
500 MHz+	178
1000 MHz	185

Electrical Properties	
H(Oe)	2.00

### 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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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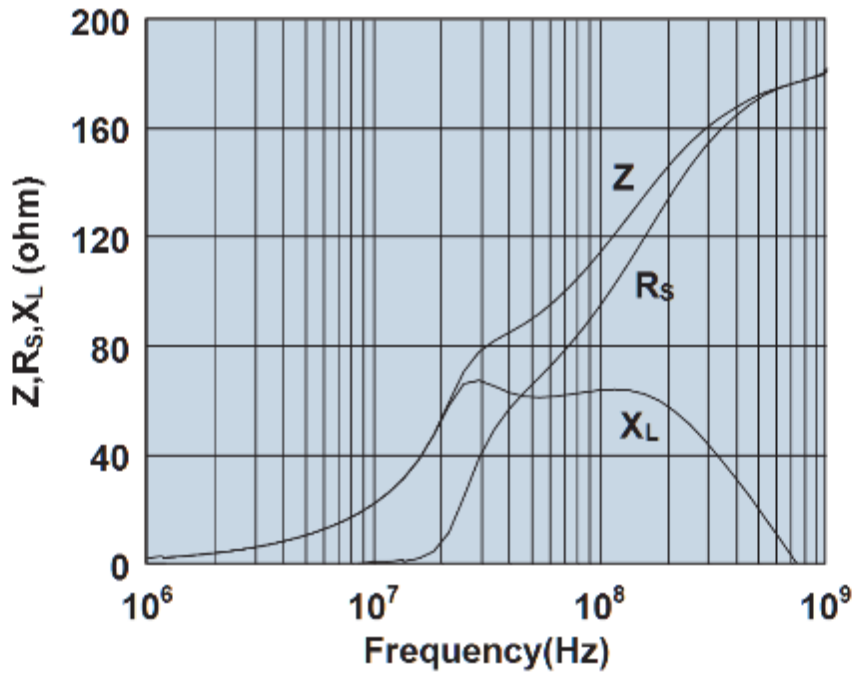
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Part Data Sheet, 2661000701  
Printed: 2013-07-03



**RoHS**  
Material  
Declaration

### 2661000701



Impedance, reactance, and resistance vs. frequency.





Part Number: 2661022401  
Description: 61 SHIELD BEAD  
Weight: .380 (g)  
Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	5.10	±0.25	0.200	-
B	1.45	+0.25	0.062	-
C	6.35	±0.25	0.250	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	58
250 MHz+	82
500 MHz+	103
1000 MHz	138

Electrical Properties	
H(Oe)	1.50

### 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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns

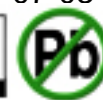


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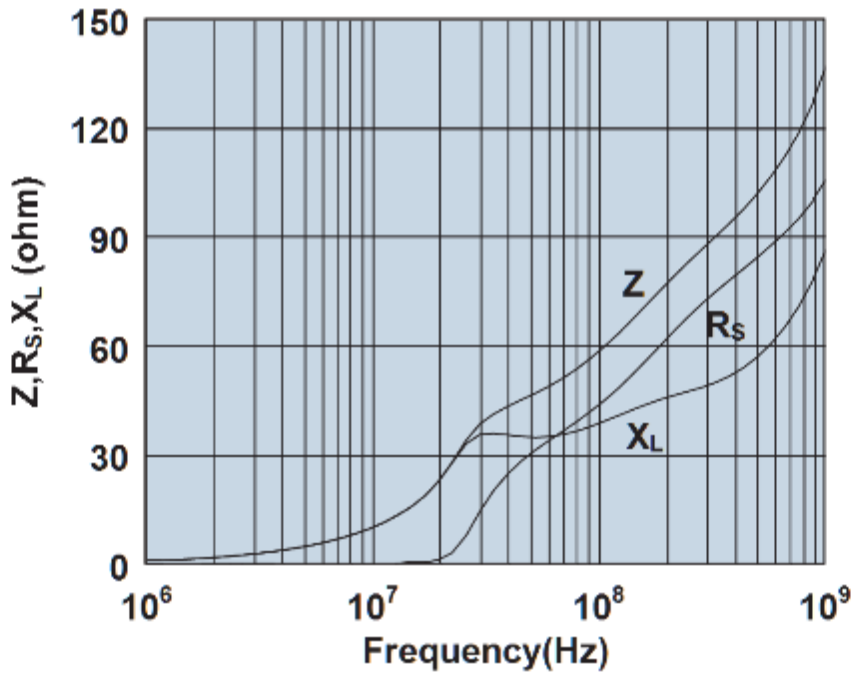
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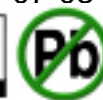
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Part Data Sheet, 2661022401  
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### 2661022401



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661021801  
Description: 61 SHIELD BEAD  
Preferred Part: ✓  
Weight: .670 (g)

### Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	5.10	±0.25	0.200	-
B	1.45	+0.25	0.062	-
C	11.10	±0.35	0.437	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	102
250 MHz+	141
500 MHz+	167
1000 MHz	185

Electrical Properties	
H(Oe)	1.50

### 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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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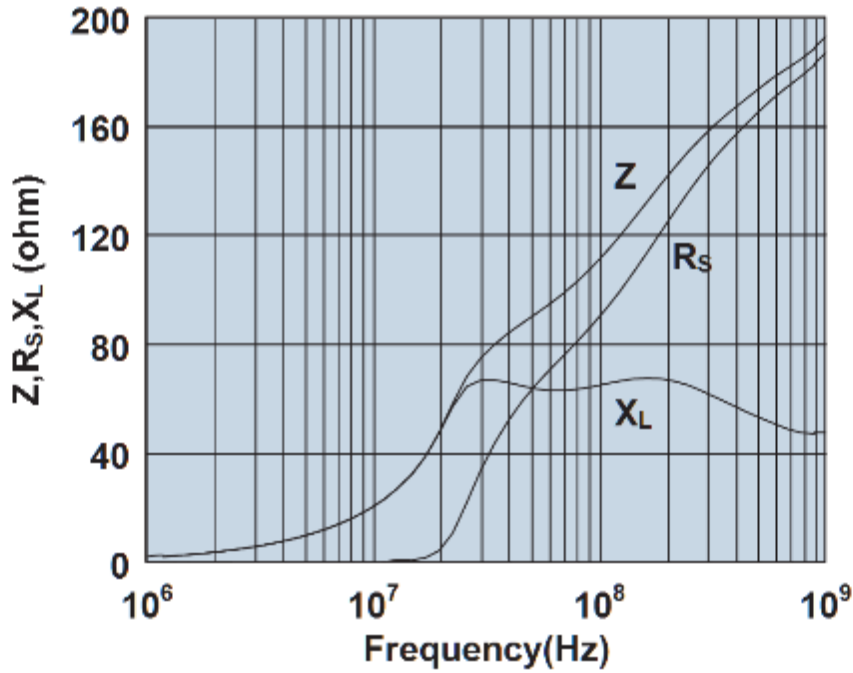
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### 2661021801



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661023801  
Description: 61 SHIELD BEAD  
Weight: 1.400 (g)  
Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	5.10	±0.25	0.200	-
B	1.45	+0.25	0.062	-
C	22.85	±0.75	0.900	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	210
250 MHz+	286
500 MHz+	325
1000 MHz	350

Electrical Properties	
H(Oe)	1.50

### 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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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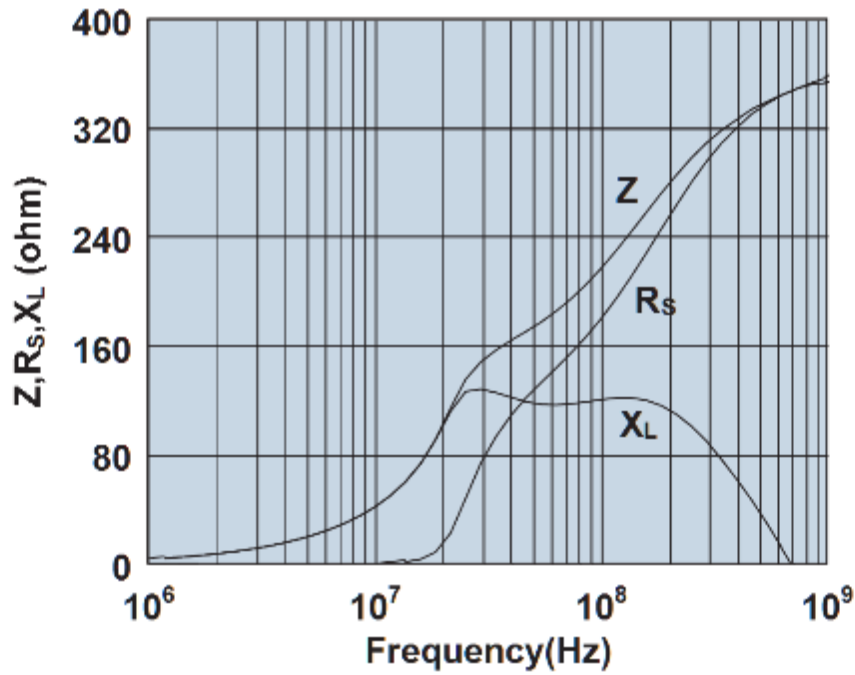
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Part Data Sheet, 2661023801  
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## 2661023801



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661000801  
Description: 61 SHIELD BEAD  
Preferred Part: ✓  
Weight: 1.000 (g)

### Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	7.50	±0.25	0.296	-
B	2.25	+0.25	0.094	-
C	7.55	±0.25	0.297	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	75
250 MHz+	103
500 MHz+	120
1000 MHz	143

Electrical Properties	
H(Oe)	1.00

### 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.

∑l/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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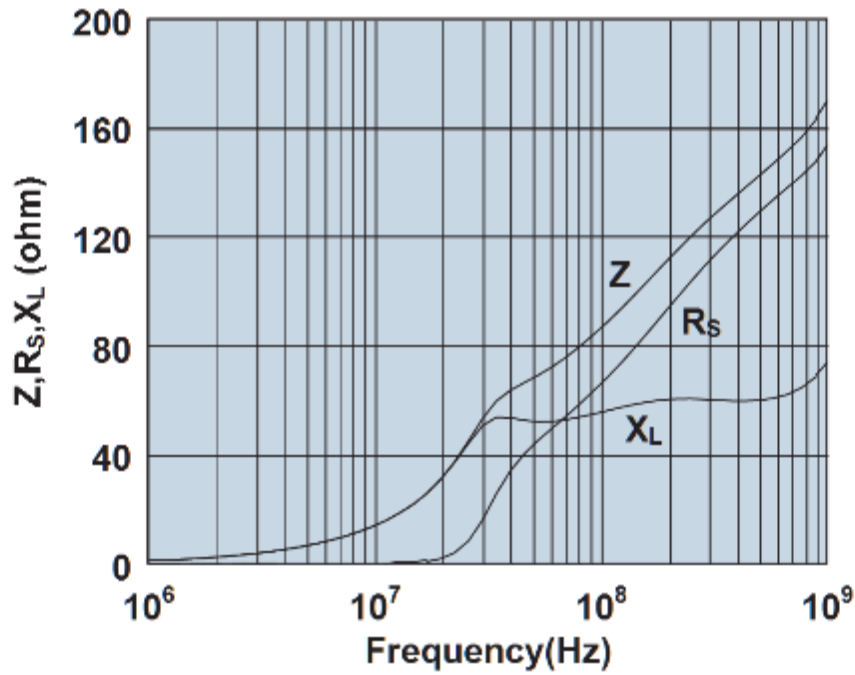
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Fair-Rite Product's Catalog  
Part Data Sheet, 2661000801  
Printed: 2013-07-03



## 2661000801



Impedance, reactance, and resistance vs. frequency.





Part Number: 2661250402  
Description: 61 SHIELD BEAD  
Weight: 1.200 (g)  
**Mechanical Specifications**

Dim	mm	mm tol	nominal inch	inch misc.
A	6.35	±0.15	0.250	-
B	2.95	+0.45	0.125	-
C	12.70	±0.50	0.500	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

**Electrical Specifications**

Typical Impedance (Ω)	
100 MHz	85
250 MHz+	115
500 MHz+	135
1000 MHz	155

Electrical Properties	
H(Oe)	.91

**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.

Σl/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



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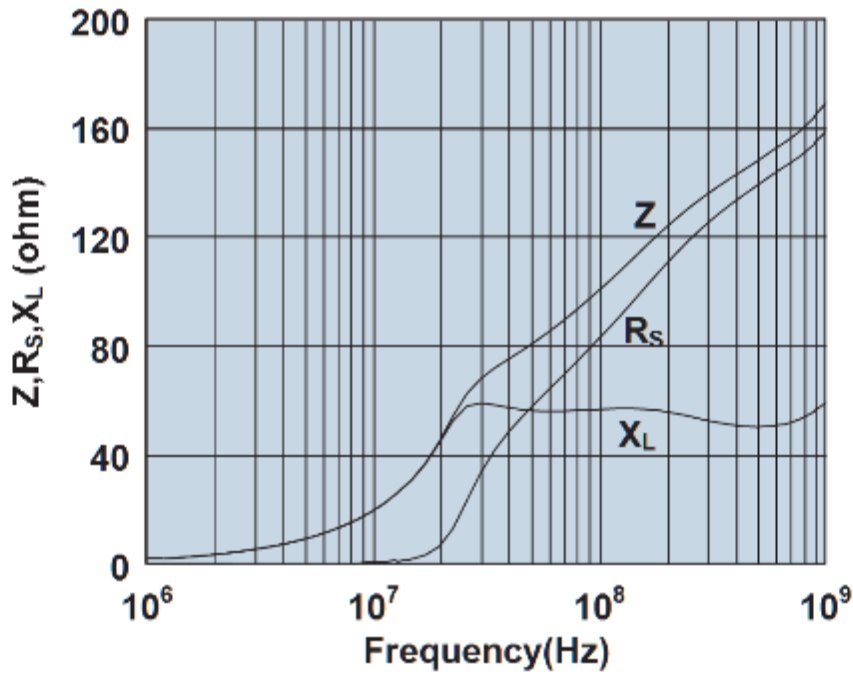
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Part Data Sheet, 2661250402  
Printed: 2013-07-03



**RoHS**  
Material  
Declaration

### 2661250402



Impedance, reactance, and resistance vs. frequency.



Part Number: 2661375102  
Description: 61 SHIELD BEAD  
Preferred Part: ✓  
Weight: 2.500 (g)

### Mechanical Specifications

Dim	mm	mm tol	nominal inch	inch misc.
A	9.50	±0.25	0.375	-
B	4.50	+0.75	0.192	-
C	6.35	±0.35	0.250	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-
H	-	-	-	-
J	-	-	-	-
K	-	-	-	-

### Electrical Specifications

Typical Impedance (Ω)	
100 MHz	42
250 MHz+	63
500 MHz+	83
1000 MHz	117

Electrical Properties	
H(Oe)	.60

### 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.

∑l/A - Core Constant

A<sub>e</sub> - Effective Cross-Sectional Area

A<sub>L</sub> - Inductance Factor (L/N<sup>2</sup>)

N/AWG - Number of Turns/Wire Size for Test Coil

l<sub>e</sub> - Effective Path Length

V<sub>e</sub> - Effective Core Volume

NI - Value of dc Ampere-turns



# Fair-Rite Products Corp. Your Signal Solution®

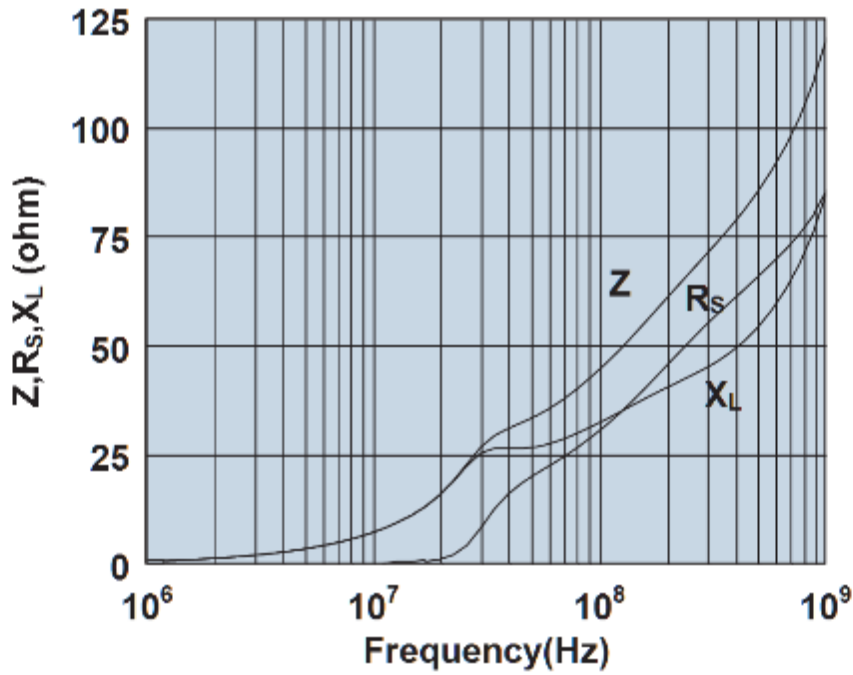
Ferrite Components for the Electronics Industry

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Impedance, reactance, and resistance vs. frequency.