



Mn-Zn

# Ferrite Core for Telecommunication

## P series

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### **Caution**

**The products in this catalog are not recommended  
for new design.**

Please refer to our Web site about replacement information.

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 **REMINDERS FOR USING THESE PRODUCTS**

Please be sure to read this manual thoroughly before using the products.

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- |   |  |
|---|--|
| (1) Aerospace/aviation equipment                                  | (9) Military equipment   |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (10) Electric heating apparatus, burning equipment                           |
| (3) Medical equipment   | (11) Disaster prevention/crime prevention equipment                          |
| (4) Power-generation control equipment                            | (12) Safety equipment  |
| (5) Atomic energy-related equipment                               | (13) Other applications that are not considered general-purpose applications |
| (6) Seabed equipment  |  |
| (7) Transportation control equipment                              |  |
| (8) Public information-processing equipment                       |  |

When using these products in general purposes and standard use, it is recommended that protection circuits are used, devices are secured, and backup circuits are kept for increased safety.

# Ferrite Cores for Telecommunication

Product compatible with RoHS directive  
Halogen-free

## Overview of the P Series

### FEATURES

- The pot cores have a good self-shielding property.
- The shape gives a high inductance value to each occupied space.

### APPLICATION

Various transformers, coils, proximity sensors

### PART NUMBER CONSTRUCTION

H5A	P5.8/3.3	Z	-	5	2	S
Material	Size of P core	AL-value (Z: without air gap)		Type of Pot core	Number of lead slot	Shape of lead slot
H5A	P5.8/3.3					
H5C2	P7/4					
	P9/5					
	P11/7					
	P14/8					
	P18/11					
	P22/13					
	P26/16					
	P30/19					

### RANGE OF USE AND STORAGE TEMPERATURE

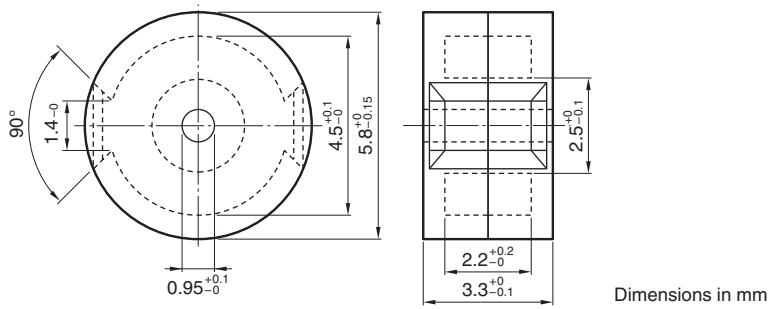
Temperature range	
Operating temperature (°C)	Storage temperature (°C)
-30 to +105	-30 to +85

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.  
Please note that the contents may change without any prior notice due to reasons such as upgrading.

# Mn-Zn P series Part No.: H5AP5.8/3.3Z-52S

## SHAPES AND DIMENSIONS



Base on IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu$ e)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.68	7.9	4.7	37	4.08	3.66	2.42	0.2	870±25%	1163

Measuring conditions

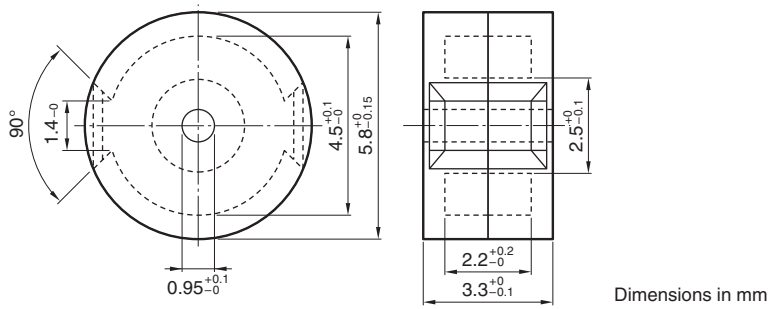
Coil :  $\phi$ 0.08mm, 2UEW, 100Ts, 70Ts (for material H5C2)

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P5.8/3.3Z-52S

## SHAPES AND DIMENSIONS



Base on IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.68	7.9	4.7	37	4.08	3.66	2.42	0.2	2660 min.	3556

Measuring conditions

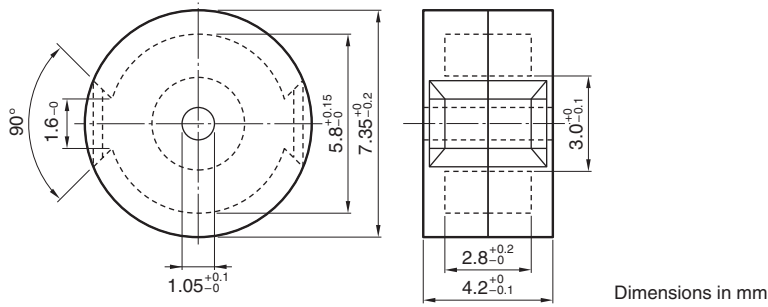
Coil :  $\phi$ 0.08mm, 2UEW, 100Ts, 70Ts (for material H5C2)

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP7/4Z-52S

## SHAPES AND DIMENSIONS



Dimensions in mm

Base on IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.43	10	7.0	70	6.05	5.57	4.31	0.5	1200±25%	1366

Measuring conditions

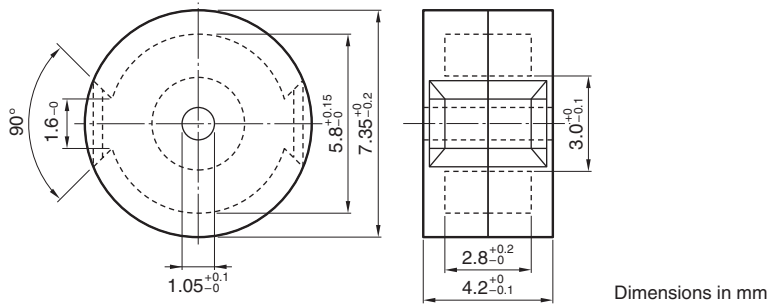
Coil : ø0.1mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P7/4Z-52S

## SHAPES AND DIMENSIONS



Base on IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu$ e)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.43	10	7.0	70	6.05	5.57	4.31	0.5	4970±30%	5656

Measuring conditions

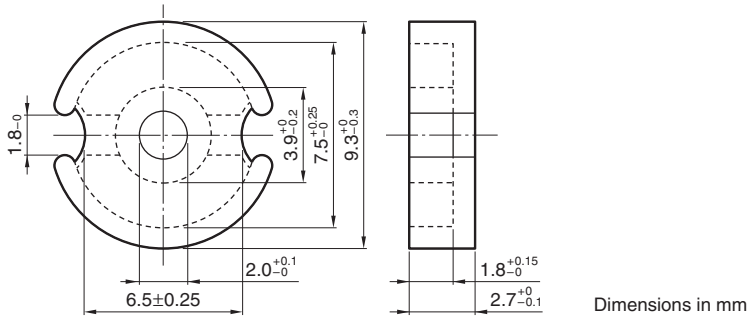
Coil :  $\phi$ 0.1mm, 2UEW, 70Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP9/5Z-52H

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.24	12.4	10.0	124	8.04	7.29	7.17	0.8	1570±25%	1562

Measuring conditions

Coil : ø0.1mm, 2UEW, 100Ts

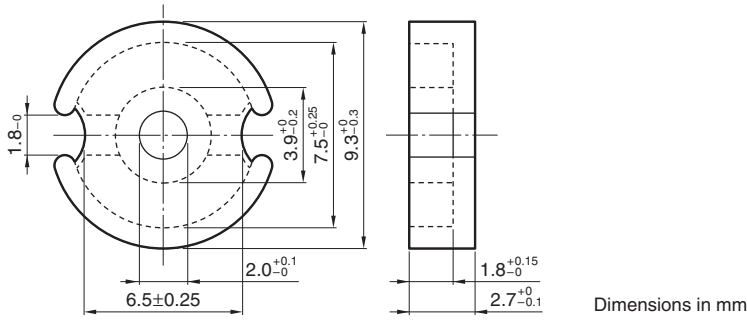
Frequency : 1kHz

Current level : 0.5mA



# Mn-Zn P series Part No.: H5C2P9/5Z-52H

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
1.24	12.4	10.0	124	8.04	7.29	7.17	0.8	6030±30%	5998

Measuring conditions

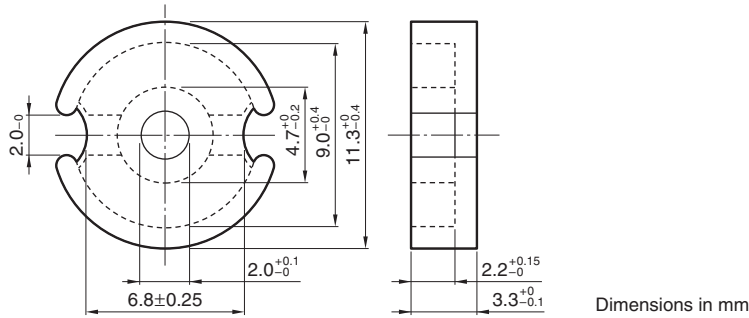
Coil : ø0.1mm, 2UEW, 70Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP11/7Z-52H

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu$ e)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.969	15.5	16.0	248	13.3	12.4	10.5	1.8	2320±25%	1765

Measuring conditions

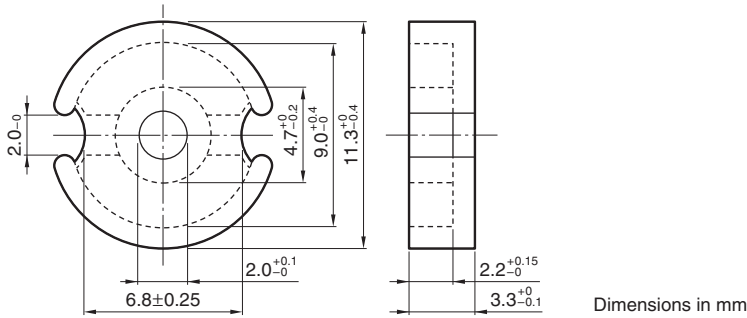
Coil :  $\phi$ 0.18mm, 2UEW, 100Ts,

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P11/7Z-52H

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.969	15.5	16.0	248	13.3	12.4	10.5	1.8	8220±30%	6253

Measuring conditions

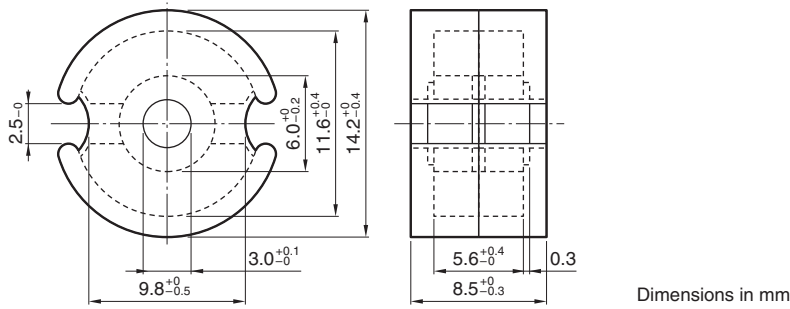
Coil :  $\phi$ 0.18mm, 2UEW, 70Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP14/8Z-52B

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.789	19.8	25.1	497	19.8	18.4	17.1	3.2	3000±25%	1884

Measuring conditions

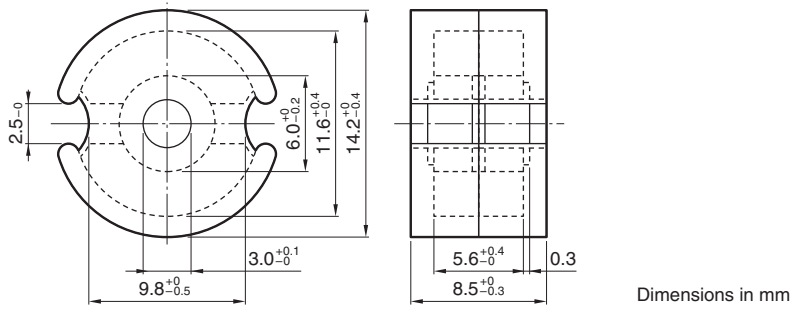
Coil : ø0.18mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P14/8Z-52B

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.789	19.8	25.1	497	19.8	18.4	17.1	3.2	11500±30%	7221

Measuring conditions

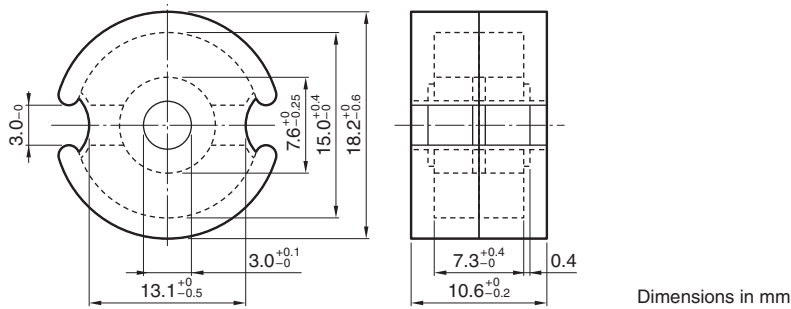
Coil :  $\phi$ 0.18mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP18/11Z-52B

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.596	25.8	43.3	1117	36.3	34.4	29	6.7	4500±25%	2138

Measuring conditions

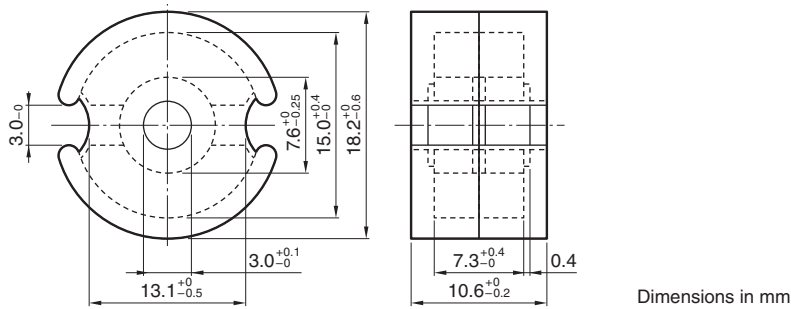
Coil : ø0.30mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P18/11Z-52B

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.596	25.8	43.3	1117	36.3	34.4	29	6.7	4500±25%	2138
								16000±30%	7601

Measuring conditions

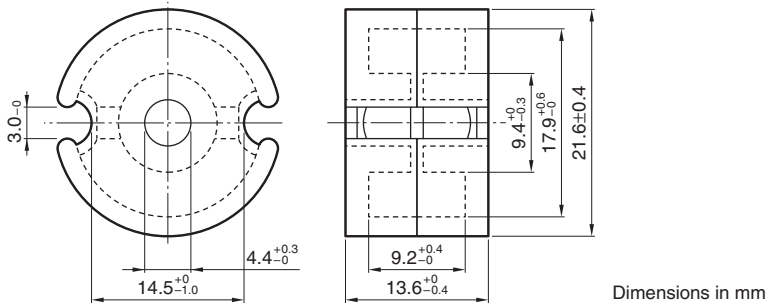
Coil :  $\phi$ 0.30mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5AP22/13Z-52H

## SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu$ e)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.497	31.5	63.4	1997	51.6	47.7	42.1	12.7	5900±25%	2333

Measuring conditions

Coil :  $\phi$ 0.35mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

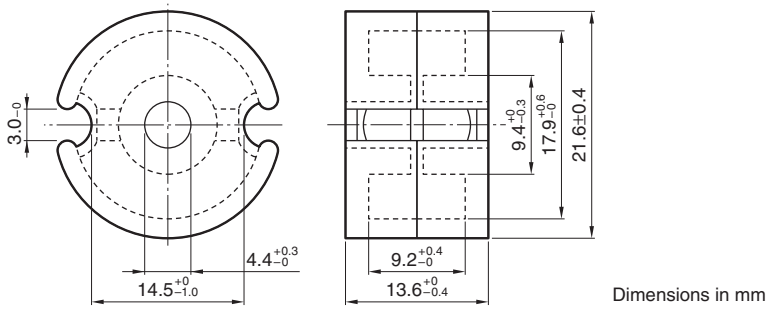


FERRITES



Mn-Zn P series **Part No.: H5C2P22/13Z-52H**

■ SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.497	31.5	63.4	1997	51.6	47.7	42.1	12.7	19500±30%	7700[at 21.7mT]
								16000+40/-30%	6318*[at 0.5mT]

Measuring conditions

Coil :  $\phi$ 0.35mm, 2UEW, 100Ts

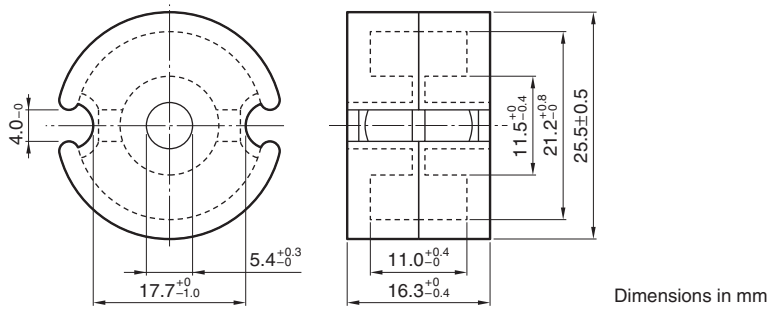
Frequency : 1kHz

Current level : 0.5mA

\* Reference specification when 0.5mT is applied to cores.

# Mn-Zn P series Part No.: H5AP26/16Z-52H

## SHAPES AND DIMENSIONS



Dimensions in mm

Base on JIS C2516, IEC Publication 62317-2.

Effective parameter							Electrical characteristics		
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu$ e)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.40	37.6	94	3534	76.1	71.3	57.7	21.1	7800±25%	2483

Measuring conditions

Coil :  $\phi$ 0.40mm, 2UEW, 100Ts

Frequency : 1kHz

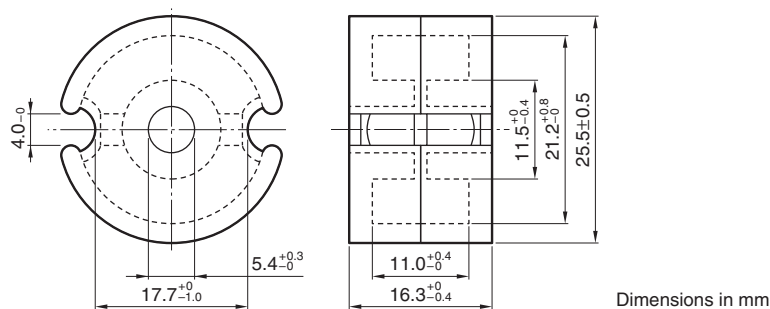
Current level : 0.5mA

FERRITES



Mn-Zn P series **Part No.: H5C2P26/16Z-52H**

■ SHAPES AND DIMENSIONS



Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu_e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.40	37.6	94	3534	76.1	71.3	57.7	21.1	24500±30%	7800[at 18.4mT]
								20000+40/-30%	6367*[at 0.5mT]

Measuring conditions

Coil :  $\phi$ 0.40mm, 2UEW, 100Ts

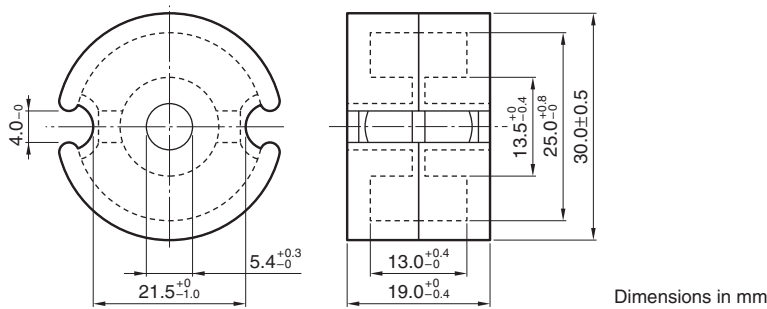
Frequency : 1kHz

Current level : 0.5mA

\* Reference specification when 0.5mT is applied to cores.

# Mn-Zn P series Part No.: H5AP30/19Z-52H

## SHAPES AND DIMENSIONS



Dimensions in mm

Base on JIS C2516, IEC Publication 62317-2.

Effective parameter							Electrical characteristics		
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weight	AL-value	Effective permeability
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$	(g/set)	(nH/N <sup>2</sup> )	( $\mu e$ )
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.33	45.2	137	6192	115	109	79.9	35.3	9800±25%	2573

Measuring conditions

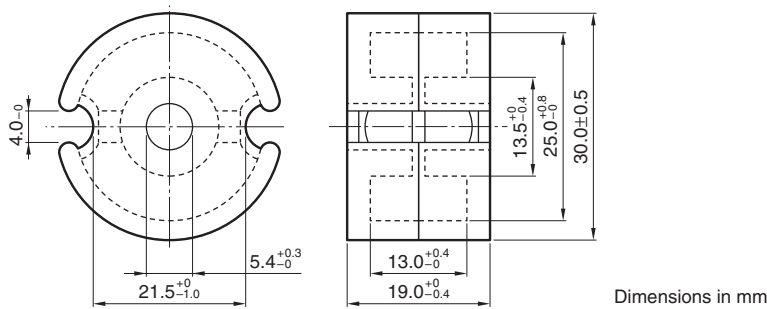
Coil :  $\phi$ 0.40mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn P series Part No.: H5C2P30/19Z-52H

## SHAPES AND DIMENSIONS



Dimensions in mm

Base on JIS C2516, IEC Publication 62317-2.

Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional area	Cross-sectional winding area of core	Weigh	AL-value	Effective permeability
C <sub>1</sub>	ℓ <sub>e</sub>	A <sub>e</sub>	V <sub>e</sub>	A <sub>cp</sub>	A <sub>cp min.</sub>	A <sub>cw</sub>	(g/set)	(nH/N <sup>2</sup> )	(μe)
(mm <sup>-1</sup> )	(mm)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )			
0.33	45.2	137	6192	115	109	79.9	35.3	32000±30%	8400[at 16.5mT]
								25000+40/-30%	6563*[at 0.5mT]

Measuring conditions

Coil : ø0.40mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

\* Reference specification when 0.5mT is applied to cores.