



Mn-Zn

## Ferrite Cores for Telecommunication

# EP 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 EP Series

### FEATURES

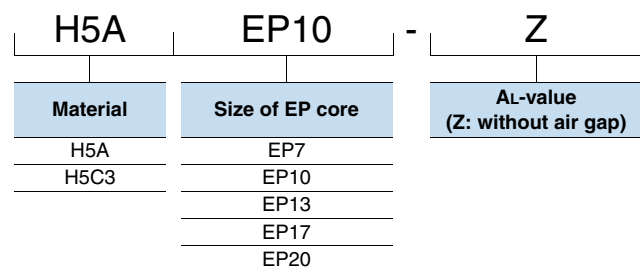
In the EP Cores, there is a single cubic space where a transformer should be mounted, enabling an optimum dimensional ratio to be calculated. Apart from the attaching terminal side, the cores entirely cover the coils.

Further, the coil cross-sections are made round, to improved the low-frequency characteristics of the core, and increase the effective volume.

### APPLICATION

Transformers and coils for communication devices

### PART NUMBER CONSTRUCTION



### RANGE OF USE AND STORAGE TEMPERATURE

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

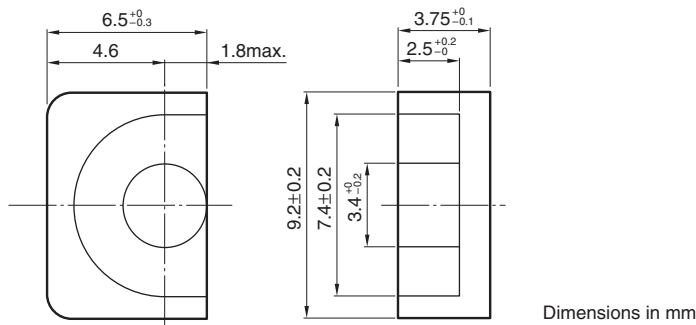
○ RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>

○ 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 EP series Part No.: H5AEP7-Z

## SHAPES AND DIMENSIONS



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
$C_1$ (mm <sup>-1</sup> )	$\ell_e$ (mm)	$A_e$ (mm <sup>2</sup> )	$V_e$ (mm <sup>3</sup> )	$A_{cp}$ (mm <sup>2</sup> )	$A_{cp \text{ min.}}$ (mm <sup>2</sup> )	$A_{cw}$ (mm <sup>2</sup> )	(g/set)	(nH/N <sup>2</sup> )min.	( $\mu$ e)
1.52	15.7	10.3	162	8.55	8.04	10.7	1.4	1100	1331

Measuring conditions

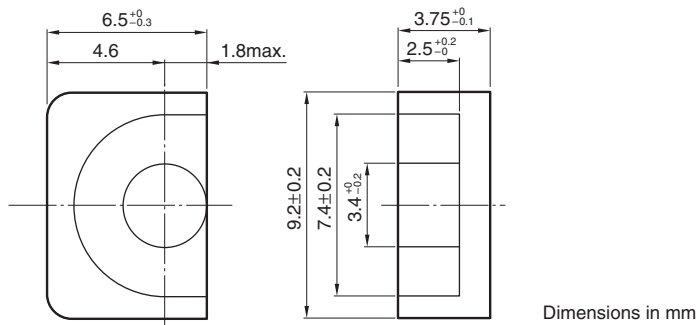
Coil :  $\phi$ 0.13mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn EP series Part No.: H5C3EP7-Z

## SHAPES AND DIMENSIONS



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> )min.	( $\mu e$ )
(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> )			
1.52	15.7	10.3	162	8.55	8.04	10.7	1.4	4200*	5080*

Measuring conditions

Coil :  $\phi 0.13\text{mm}$ , 2UEW, 100Ts

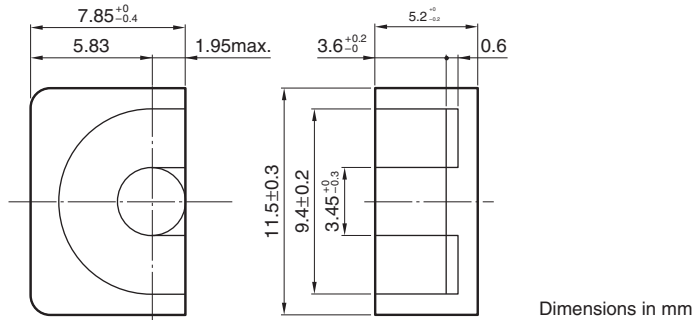
Frequency : 10kHz

Current level : 0.5mA

Voltage: 10mV

# Mn-Zn EP series Part No.: H5AEP10-Z

## SHAPES AND DIMENSIONS



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> )min.	( $\mu$ 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> )			
1.7	19.2	11.3	217	8.55	7.79	22.6	2.8	1080	1461

Measuring conditions

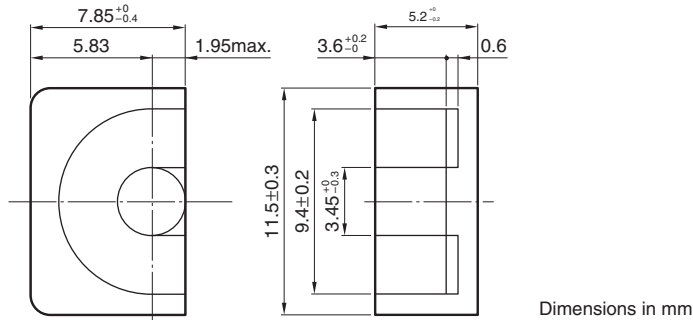
Coil :  $\phi 0.20\text{mm}$ , 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn EP series Part No.: H5C3EP10-Z

## SHAPES AND DIMENSIONS



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> )min.	( $\mu e$ )
(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> )			
1.7	19.2	11.3	217	8.55	7.79	22.6	2.8	3850*	5208*

Measuring conditions

Coil :  $\phi 0.20\text{mm}$ , 2UEW, 100Ts

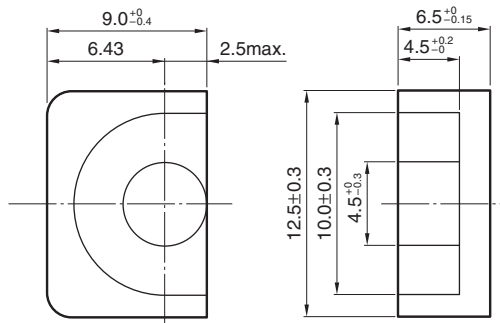
Frequency : 10kHz

Current level : 0.5mA

Voltage: 10mV

# Mn-Zn EP series Part No.: H5AEP13-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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> )min.	( $\mu\epsilon$ )
(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	24.2	19.5	472	14.9	13.9	26	5.1	1700	1677

Measuring conditions

Coil :  $\phi 0.20\text{mm}$ , 2UEW, 100Ts

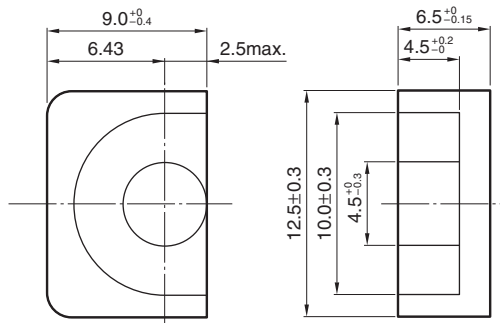
Frequency : 1kHz

Current level : 0.5mA



# Mn-Zn EP series Part No.: H5C3EP13-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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> )min.	( $\mu_e$ )
(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> )			
1.24	24.2	19.5	472	14.9	13.9	26	5.1	5600*	5526*

Measuring conditions

Coil :  $\phi$ 0.20mm, 2UEW, 100Ts

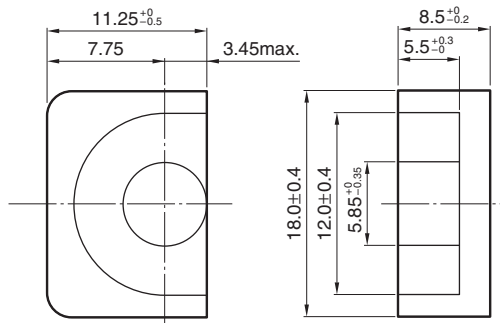
Frequency : 10kHz

Current level : 0.5mA

Voltage: 10mV

# Mn-Zn EP series Part No.: H5AEP17-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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> )min.	( $\mu_e$ )
(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> )			
0.84	28.5	33.9	966	25.3	23.8	33.8	11.8	2500	1672

Measuring conditions

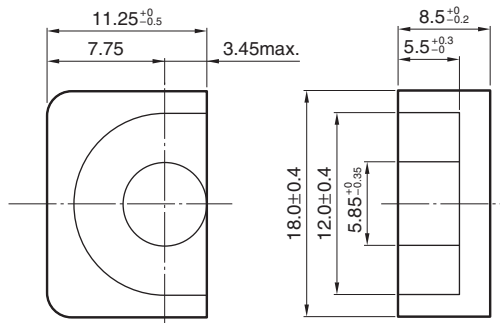
Coil :  $\phi$ 0.20mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn EP series Part No.: H5C2EP17-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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> )min.	( $\mu_e$ )
(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> )			
0.84	28.5	33.9	966	25.3	23.8	33.8	11.8	8000	5350

Measuring conditions

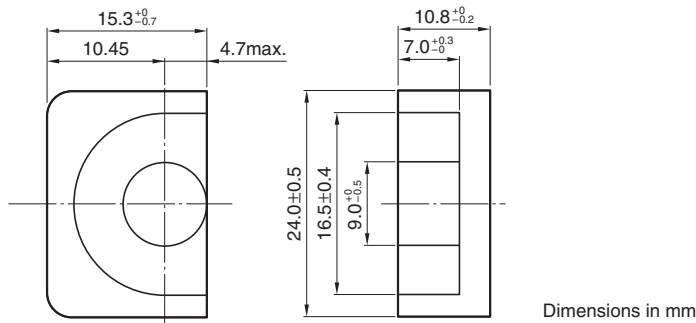
Coil :  $\phi$ 0.20mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn EP series Part No.: H5AEP20-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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> )min.	( $\mu\epsilon$ )
(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> )			
0.508	39.8	78	312	60.1	56.7	55.4	27.6	4200	1698

Measuring conditions

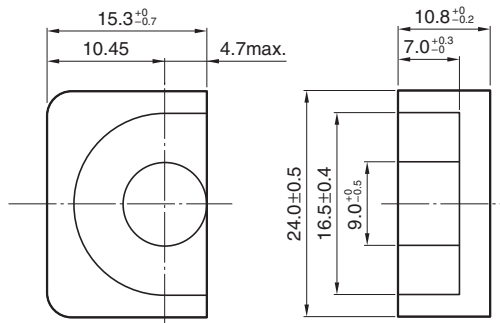
Coil :  $\phi 0.35\text{mm}$ , 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

# Mn-Zn EP series Part No.: H5C2EP20-Z

## SHAPES AND DIMENSIONS



Dimensions in mm

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
$C_1$	$\ell_e$	$A_e$	$V_e$	$A_{cp}$	$A_{cp \text{ min.}}$	$A_{cw}$			
( $\text{mm}^{-1}$ )	(mm)	( $\text{mm}^2$ )	( $\text{mm}^3$ )	( $\text{mm}^2$ )	( $\text{mm}^2$ )	( $\text{mm}^2$ )	(g/set)	( $\text{nH/N}^2$ )min.	( $\mu\epsilon$ )
0.508	39.8	78	312	60.1	56.7	55.4	27.6	13500	5457

Measuring conditions

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

Frequency : 1kHz

Current level : 0.5mA