



Mn-Zn

Ferrite Cores for Telecommunication

EP series

**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.

When using the products for specific purposes, please first make confirmations in areas such as safety, reliability, and quality.

Please understand that we are not in a position to be held responsible for any damage or the like caused by any use exceeding the range or conditions of this specification sheet or by any use in the specific applications.

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

When using this product in general-purpose standard applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc to ensure higher 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

H5A	EP10	-	Z
Material	Size of EP core		AL-value (Z: without air gap)
H5A	EP7		
H5C3	EP10		
	EP13		
	EP17		
	EP20		

RANGE OF USE AND STORAGE TEMPERATURE

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

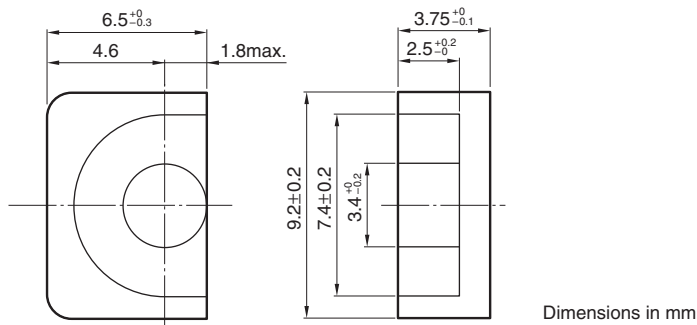
○ RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>

○ 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.

• All specifications are subject to change without notice.

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 ⁻¹)	ℓ_e (mm)	A_e (mm ²)	V_e (mm ³)	A_{cp} (mm ²)	$A_{cp \text{ min.}}$ (mm ²)	A_{cw} (mm ²)	(g/set)	(nH/N ²)min.	(μ e)
1.52	15.7	10.3	162	8.55	8.04	10.7	1.4	1100	1331

Measuring conditions

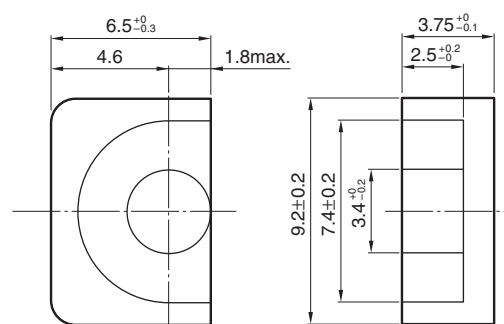
Coil : $\phi 0.13$ mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA

Mn-Zn EP series **Part No.: H5C3EP7-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	ℓ _e	A _e	V _e	A _{cp}	A _{cp} min.	A _{cw}	(g/set)	(nH/N ²)min.	(μe)
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)			
1.52	15.7	10.3	162	8.55	8.04	10.7	1.4	4200*	5080*

Measuring conditions

Coil : ø0.13mm, 2UEW, 100Ts

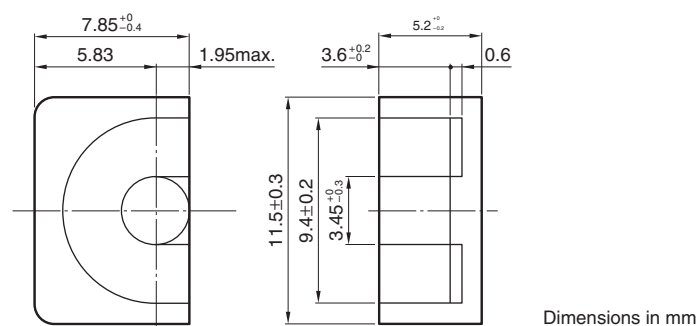
Frequency : 10kHz

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 Ae	Effective core volume Ve	Cross-sectional center pole area Acp	Minimum cross-sectional area Acp min.	Cross-sectional winding area of core Acw	Weigh	AL-value	Effective permeability
C ₁	ℓ _e								
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
1.7	19.2	11.3	217	8.55	7.79	22.6	2.8	1080	1461

Measuring conditions

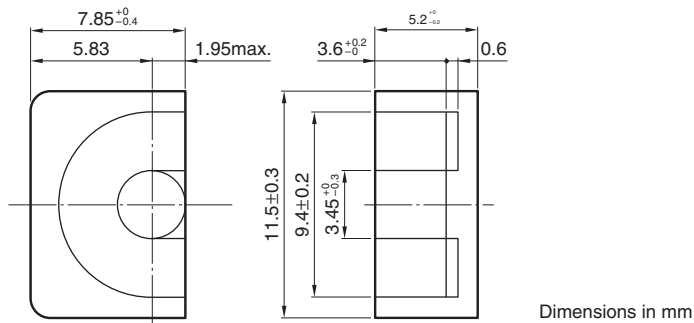
Coil : ø0.20mm, 2UEW, 100Ts

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 Ae	Effective core volume Ve	Cross-sectional center pole area Acp	Minimum cross-sectional area Acp min.	Cross-sectional winding area of core Acw	Weigh	AL-value	Effective permeability
C ₁	ℓ _e								
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
1.7	19.2	11.3	217	8.55	7.79	22.6	2.8	3850*	5208*

Measuring conditions

Coil : ø0.20mm, 2UEW, 100Ts

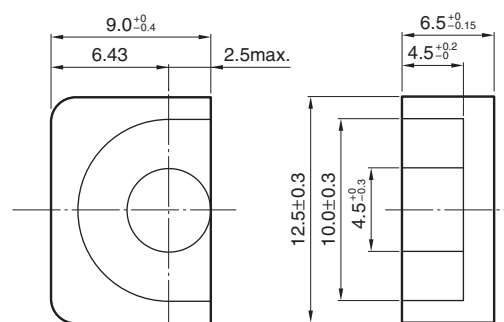
Frequency : 10kHz

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 Ae	Effective core volume	Cross-sectional center pole area Acp	Minimum cross-sectional area Acp min.	Cross-sectional winding area of core Acw	Weigh	AL-value	Effective permeability
C ₁	ℓ _e		Ve						
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
1.24	24.2	19.5	472	14.9	13.9	26	5.1	1700	1677

Measuring conditions

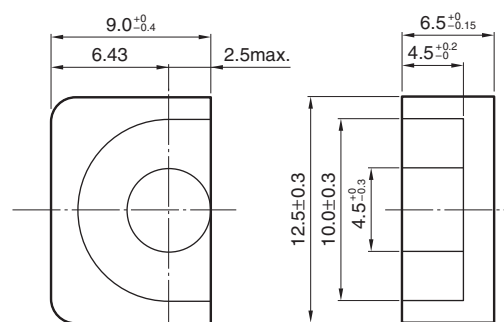
Coil : ø0.20mm, 2UEW, 100Ts

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 Ae	Effective core volume Ve	Cross-sectional center pole area Acp	Minimum cross-sectional area Acp min.	Cross-sectional winding area of core Acw	Weigh	AL-value	Effective permeability
C ₁	ℓ _e								
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
1.24	24.2	19.5	472	14.9	13.9	26	5.1	5600*	5526*

Measuring conditions

Coil : ø0.20mm, 2UEW, 100Ts

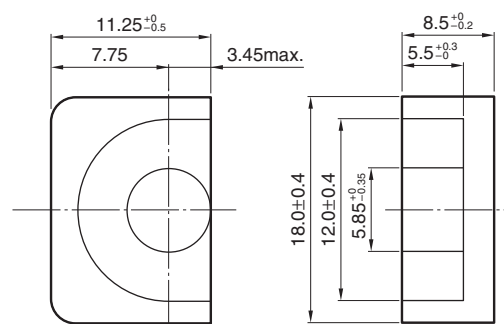
Frequency : 10kHz

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	Weight	AL-value	Effective permeability
C_1	ℓ_e	A_e	V_e	A_{cp}	$A_{cp \text{ min.}}$	A_{cw}			
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
0.84	28.5	33.9	966	25.3	23.8	33.8	11.8	2500	1672

Measuring conditions

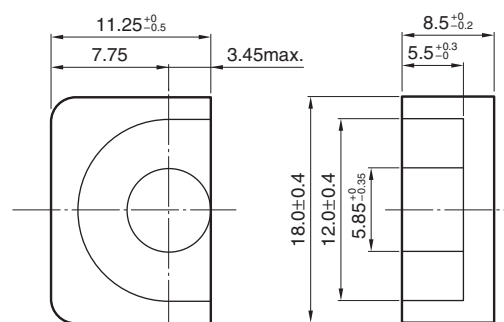
Coil : ø0.20mm, 2UEW, 100Ts

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 Ae	Effective core volume	Cross-sectional center pole area Acp	Minimum cross-sectional area Acp min.	Cross-sectional winding area of core Acw	Weigh	AL-value	Effective permeability
C ₁	ℓ _e		Ve						
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²)min.	(μe)
0.84	28.5	33.9	966	25.3	23.8	33.8	11.8	8000	5350

Measuring conditions

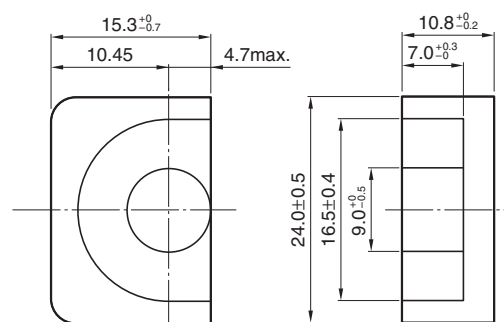
Coil : ø0.20mm, 2UEW, 100Ts

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	ℓ_e	A_e	V_e	A_{cp}	$A_{cp \text{ min.}}$	A_{cw}	(g/set)	(nH/N ²)min.	(μ e)
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)			
0.508	39.8	78	312	60.1	56.7	55.4	27.6	4200	1698

Measuring conditions

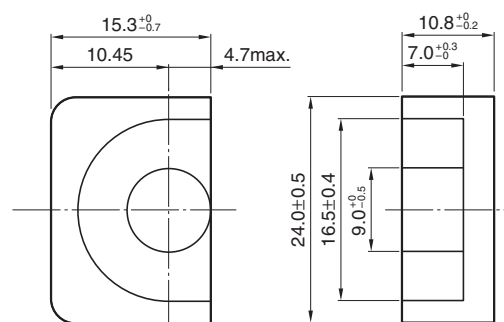
Coil : $\phi 0.35$ mm, 2UEW, 100Ts

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	Weight	AL-value	Effective permeability
C ₁	ℓ _e	A _e	V _e	A _{cp}	A _{cp} min.	A _{cw}	(g/set)	(nH/N ²)min.	(μe)
(mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)			
0.508	39.8	78	312	60.1	56.7	55.4	27.6	13500	5457

Measuring conditions

Coil : ø0.35mm, 2UEW, 100Ts

Frequency : 1kHz

Current level : 0.5mA