TDK

March 2014

Mn-Zn

Ferrite Cores for Telecommunication

SMD series

EPC
ER
EE
EEM

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

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 SMD Series

FEATURES

- Small shapes for surface mounting.
- The EPC, EE and EEM Cores are horizontal mounted types.
- The ER Core is a vertical mounted type.

APPLICATION

Transformers and coils for small-sized communication devices

PART NUMBER CONSTRUCTION

H5C3 EPC10 - Z

Material	Size of E core	AL-value (Z: without air gap)
H5C3		

EPC core				
EPC10	EPC13			
ER core				
ER9.5/5	ER11/3.9	ER11/3.9	ER11/5	ER14.5/6
EE core				
EE5	EE8.9/8			
EEM core				
EEM12.7/13.7				

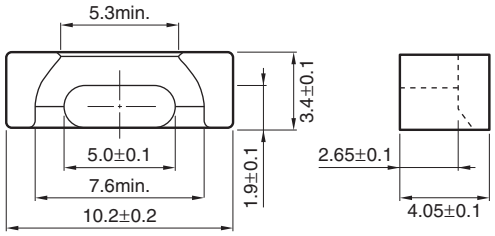
RANGE OF USE AND STORAGE TEMPERATURE

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.

Mn-Zn SMD series Part No.: H5C3EPC10-Z

SHAPES AND DIMENSIONS

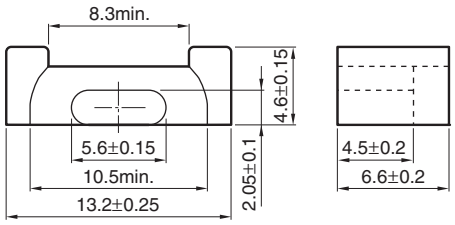


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor C1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional area Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	AL-value (nH/N^2) 10kHz 10mV 100Ts
1.89	17.8	9.39	167	8.73	8.13	7.69	1.1	2660 min.

Mn-Zn SMD series Part No.: H5C3EPC13-Z

SHAPES AND DIMENSIONS

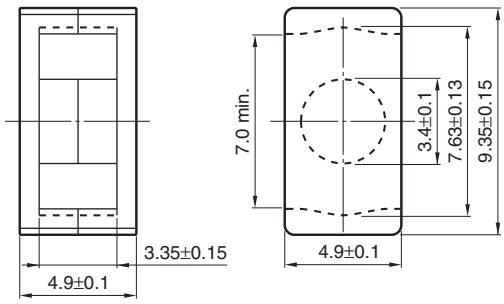


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional area Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value (nH/N²) 10kHz 10mV 100Ts
2.46	30.6	12.5	382	10.6	9.71	23.0	2.1	2450 min.

Mn-Zn SMD series Part No.: H5C3ER9.5/5-Z

SHAPES AND DIMENSIONS

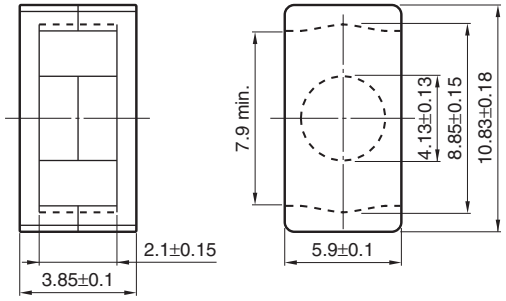


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional area Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-value (nH/N^2) 10kHz 10mV 100Ts
1.67	14.2	8.47	120	9.08	8.55	7.1	0.6	3500 min.

Mn-Zn SMD series Part No.: H5C3ER11/3.9-Z

SHAPES AND DIMENSIONS

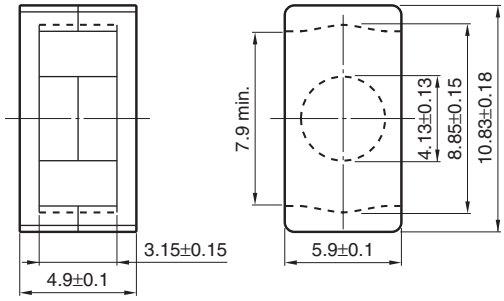


Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw		
(mm^{-1})	(mm)	(mm^2)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(g/set)	(nH/N^2) 10kHz 10mV 100Ts
1.08	12.6	11.7	147	13.4	12.6	4.96	0.8	4900 min.

Mn-Zn SMD series Part No.: H5C3ER11/5-Z

SHAPES AND DIMENSIONS

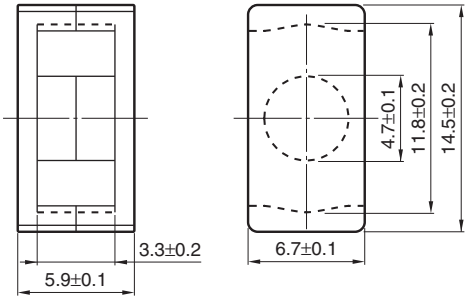


Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw		
(mm^{-1})	(mm)	(mm^2)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(g/set)	(nH/N^2) 10kHz 10mV 100Ts
1.23	14.7	11.9	174	13.4	12.6	7.44	1.0	4760 min.

Mn-Zn SMD series Part No.: H5C3ER14.5/6-Z

SHAPES AND DIMENSIONS

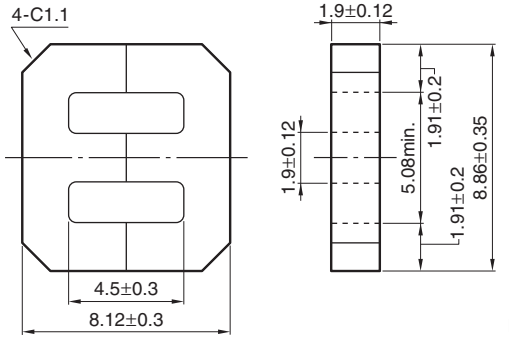


Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw		
(mm^{-1})	(mm)	(mm^2)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(g/set)	(nH/N^2) 10kHz 10mV 100Ts
1.08	19.0	17.6	333	17.3	16.6	11.7	1.8	5950 min.

Mn-Zn SMD series Part No.: H5C3EE8.9/8-Z

SHAPES AND DIMENSIONS

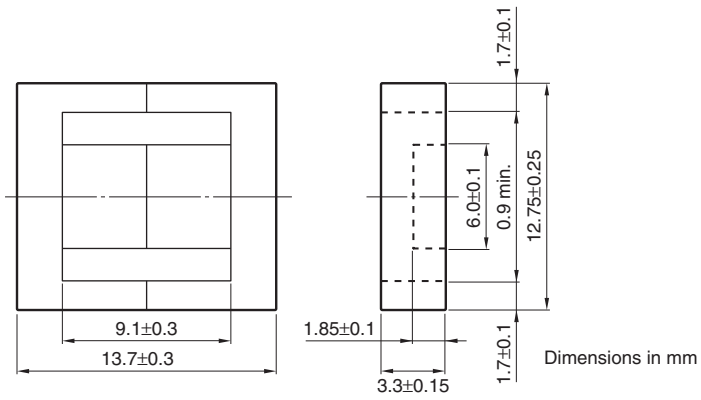


Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw		
(mm^{-1})	(mm)	(mm^2)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(g/set)	(nH/N^2) 10kHz 10mV 100Ts
3.15	15.6	4.96	77.4	3.61	3.17	7.07	0.6	2000 min.

Mn-Zn SMD series Part No.: H5C3EEM12.7/13.7-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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw		
(mm^{-1})	(mm)	(mm^2)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(g/set)	(nH/N^2) 10kHz 10mV 100Ts
2.27	27.3	12.0	328	11.1	10.3	15.2	1.9	3000 min.