TDK

April 2022

Mn-Zn

Ferrite Cores for Telecommunication

SMD series

EPC
ER
EE
EEM

⚠ Caution

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

Please refer to our Web site about replacement information.

⚠ 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
(2) Transportation equipment (cars, 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 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 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

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				

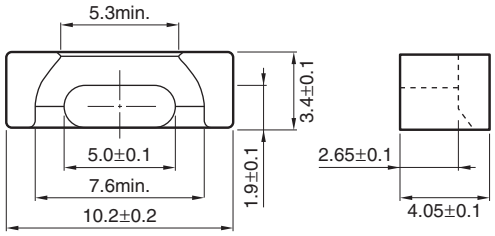
RANGE OF USE AND STORAGE TEMPERATURE

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

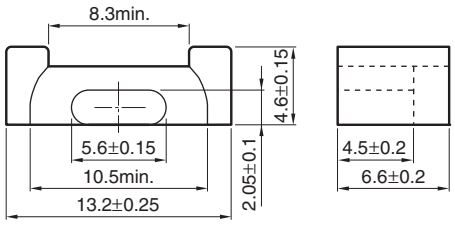


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (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
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

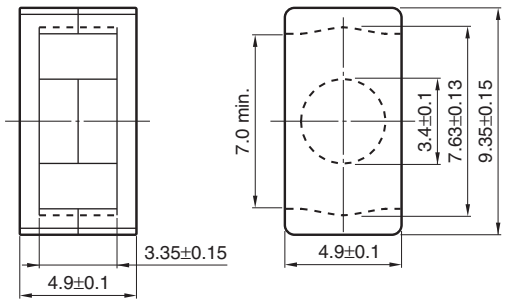


Dimensions in mm

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

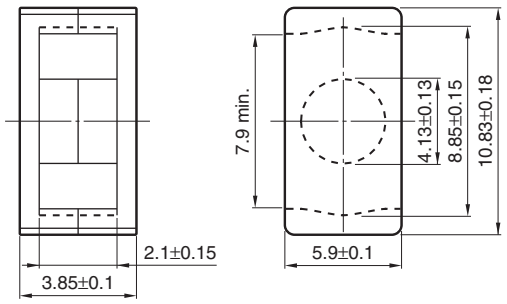


Dimensions in mm

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)	AL-value (nH/N²) 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

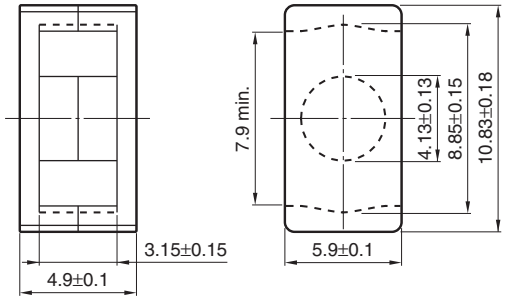


Dimensions in mm

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

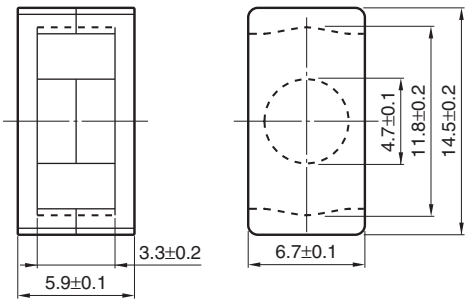


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor 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
1.23	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

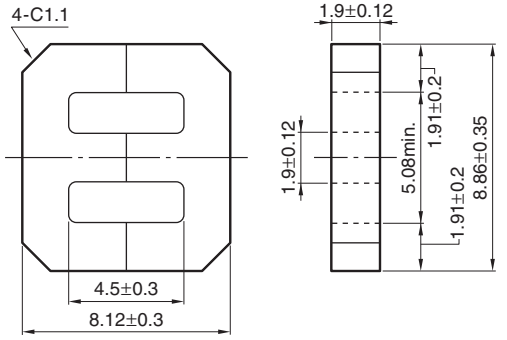


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor 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
1.08	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

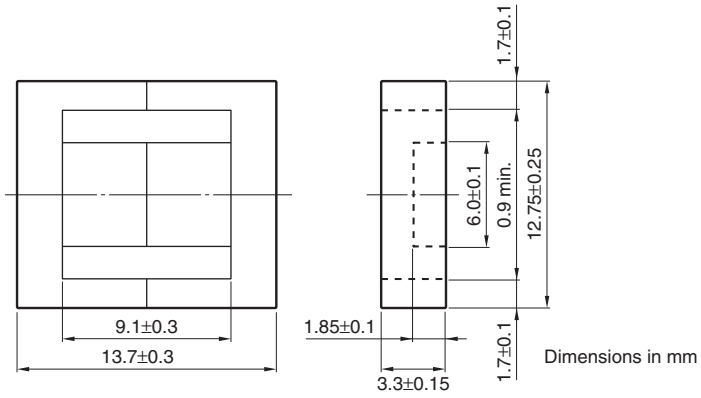


Dimensions in mm

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 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
2.27	27.3	12.0	328	11.1	10.3	15.2	1.9	3000 min.