

# Ferrite Cores

ER, EPC, EEM, EE, RM, EP, T Series

## Wide Temperature Range, High Permeability Material Material H5C4

As ISDN, PHS, etc. quickly become widespread in the data communication market, communication devices are increasingly being installed outdoors. TDK developed wide temperature range, high permeability material H5C4 by taking full advantage of TDK's ferrite materials experience and precise manufacturing process control technology. An initial permeability  $\mu_i \geq 9000$  is maintained at temperatures above  $-20^\circ\text{C}$ . This material has the optimum characteristics for the design of ISDN pulse transformers, etc. used by outdoor installations of communication equipment requiring the maintenance of characteristics down to low temperatures.

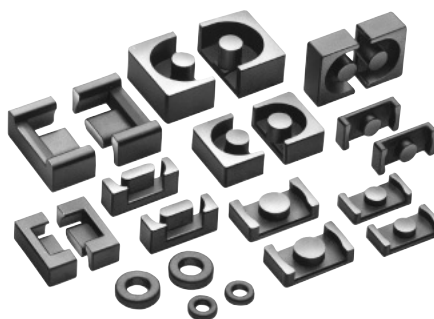
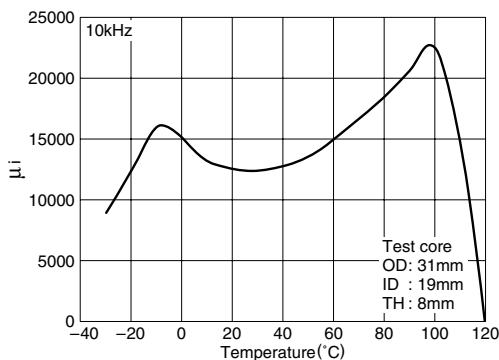
### MATERIAL CHARACTERISTICS

Material			H5C4
Initial permeability	$\mu_i$	$[-20^\circ\text{C}]$ $[25^\circ\text{C}]$	$\geq 9000$ $12000 \pm 25\%$
Relative loss factor [10kHz]	$\tan\delta/\mu_i$	$\times 10^{-6}$	$\leq 8$
Saturation magnetic flux density	$B_s$	mT	380
Remanent flux density	$B_r$	mT	100
Coercive force	$H_c$	A/m	4.4
Disaccommodation factor [1 to 10min, 10kHz]	$D_F$	$\times 10^{-6}$	$\leq 3$
Curie temperature	$T_c$	$^\circ\text{C}$	$\leq 110$

### STANDARD SHAPES

ER CORE:ER9.5/5, ER11/3.9, ER11/5, ER14.5/6  
EPC CORE:EPC10, EPC13  
EEM CORE:EEM8/8, EEM10/10, EEM12.7/13.7, EEM13/13  
EE CORE:EE8.9/8  
RM CORE:RM5, RM6  
EP CORE:EP7, EP10, EP13  
T CORE:T3.05, T3.94, T4, T4.83, T6

### INITIAL PERMEABILITY vs. TEMPERATURE CHARACTERISTICS



### CHARACTERISTICS

#### ER CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	$-20^\circ\text{C}$	$25^\circ\text{C}$		
H5C4ER9.5/5-Z	3000min.	3000min.	BER9.5/5-118GA	FER9.5/5-A
H5C4ER11/3.9-Z	4150min.	4150min.	BER11/3.9-1110G	FER11/3.9-A
H5C4ER11/5-Z	4050min.	4050min.	BER11/5-1110GA	FER11/5-A
H5C4ER14.5/6-Z	5000min.	5000min.	BER14.5/6-1110GA	FER14.5/6-A

• Measuring conditions:  
ER9.5/5, ER11/3.9, ER11/5:10kHz, 10mV,  $\phi 0.1\text{mm}$ , 100ts./ER14.5/6:10kHz, 10mV,  $\phi 0.18\text{mm}$ , 100ts.

#### EPC CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	$-20^\circ\text{C}$	$25^\circ\text{C}$		
H5C4EPC10-Z	2150min.	2150min.	BEPC-10-118GA	FEPC-10-A
H5C4EPC13-Z	2000min.	2000min.	BEPC-13-1110GA	FEPC-13-A

• Measuring conditions:  
EPC10:10kHz, 10mV,  $\phi 0.1\text{mm}$ , 100ts./EPC13:10kHz, 10mV,  $\phi 0.2\text{mm}$ , 100ts.

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## CHARACTERISTICS

### EEM CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	-20°C	25°C		
H5C4EEM12.7/13.7-Z	2500min.	2500min.	BEM-12.7/13.7-118G	FEM12.7/13.7-A
H5C4EEM8/8-Z	860min.	860min.	BEM-8/8-018G	—
H5C4EEM10/10-Z	1130min.	1130min.	BEM-10/10-0110G	—
H5C4EEM13/13-Z	1360min.	1360min.	BEM-13/13-0110G	—

• Measuring conditions:10kHz, 10mV, ø0.1mm, 100ts.

### EE CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	-20°C	25°C		
H5C4EE5-Z	850min.	850min.	BE-5-916F	FE-5-A
H5C4EE8.9/8-Z	1700min.	1700min.	BE-8.9/8-118G	—

• Measuring conditions:  
EE5:10kHz, 10mV, ø0.1mm, 100ts./EE8.9:10kHz, 10mV, ø0.2mm, 100ts.

### RM CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	-20°C	25°C		
H5C4RM5Z-12	6200min.	6200min.	BRM-5-716CP	FRM-5-A
H5C4RM6Z-12	7150min.	7150min.	BRM-6-716CP	FRM-6-A

• Measuring conditions:  
RM5:10kHz, 10mV, ø0.18mm, 100ts./RM6:10kHz, 10mV, ø0.2mm, 100ts.

### EP CORE

Part No.	AL-value(nH/N <sup>2</sup> )		Bobbin	Flange
	-20°C	25°C		
H5C4EP7-Z	3500min.	3500min.	BEP-7-316D	FEP-7-C
H5C4EP10-Z	3200min.	3200min.	BEP-10-318D	FEP-10-C
H5C4EP13-Z	4650min.	4650min.	BEP-13-3110D	FEP-13-C

• Measuring conditions:  
EP7:10kHz, 10mV, ø0.13mm, 100ts./EP10, EP13:10kHz, 10mV, ø0.2mm, 100ts.

### T CORE

Part No.	AL-value(nH/N <sup>2</sup> )	
	-20°C	25°C
H5C4T3.05X1.27X1.27	1950min.	2600±25%
H5C4T4X1X2	1200min.	1600±25%
H5C4T3.94X1.27X2.23	1275min.	1700±25%
H5C4T4.83X1.27X2.29	1650min.	2200±25%
H5C4T6X1.5X3	1800min.	2400±25%
H5C4T5.84X1.52X3.05	1725min.	2300±25%

• Measuring conditions:  
T3.05, T4, T3.94, T4.83:10kHz, 10mV, ø0.12mm, 100ts.  
T6, T5.84:10kHz, 10mV, ø0.2mm, 100ts.

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### MOUNTING DIMENSIONS

Part No.	Mounting dimensions			Number of terminals	Mounting type
	Depth	Width	Height		
H5C4ER9.5/5-Z	9.9	11.7	5.9	8	
H5C4ER11/3.9-Z	11	12.6	4.7	10	
H5C4ER11/5-Z	11.5	12.3	6.4	10	SMD
H5C4ER14.5/6-Z	15.1	16.2	7.3	10	
H5C4EPC10-Z	11	11.7	5.2	8	
H5C4EPC13-Z	14.2	20.6	7.8	10	SMD
H5C4EEM12.7/13.7-Z	13.55	16.8	5	8	
H5C4EEM8/8-Z	9.2	11.2	3.5	8	
H5C4EEM10/10-Z	11.7	14	3.5	10	SMD
H5C4EEM13/13-Z	14.2	16.6	3.5	10	
H5C4EE5-Z	5.7	7.8	4.75	6	
H5C4EE8.9/8-Z	9.3	11.3	4.8	8	SMD
H5C4EP7-Z	13.55	16.8	5	8	
H5C4EP10-Z	9.2	11.2	3.5	8	
H5C4EP13-Z	11.7	14	3.5	10	Lead-through
H5C4RM5Z-12	12.5	12.5	10.5	6	
H5C4RM6Z-12	15	15	12.5	6	Lead-through
H5C4T3.05X1.27X1.27					
H5C4T3.94X1.27X2.23					
H5C4T4X1X2					
H5C4T4.83X1.27X2.29					
H5C4T6X1.5X3					