

Ferrite Cores

High Permeability Material H5C4 Material

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

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 H5C4 material 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°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	μ_i	$[-20^\circ\text{C}]$ $[25^\circ\text{C}]$	≥ 9000 $12000 \pm 25\%$
Relative loss factor [10kHz]	$\tan\delta/\mu_i$	$\times 10^{-6}$	≤ 8
Saturation magnetic flux density	Bs	mT	380
Remanent flux density	Br	mT	100
Coercive force	Hc	A/m	4.4
Disaccommodation factor [1 to 10min, 10kHz]	Df	$\times 10^{-6}$	≤ 3
Curie temperature	Tc	$^\circ\text{C}$	≤ 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

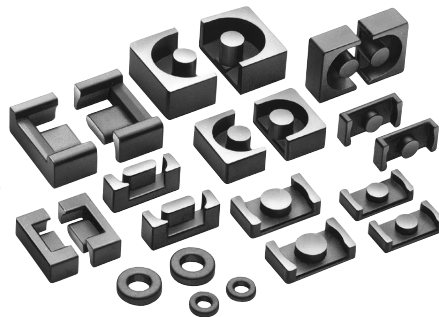
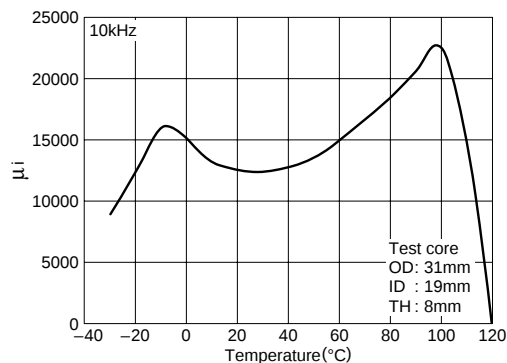
RM CORE:RM5, RM6

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 ²)		Bobbin	Flange
	-20°C	25°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 ²)		Bobbin	Flange
	-20°C	25°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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EEM CORE

Part No.	AL-value(nH/N ²)		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, ϕ 0.1mm, 100ts.

EE CORE

Part No.	AL-value(nH/N ²)		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, ϕ 0.1mm, 100ts./EE8.9:10kHz, 10mV, ϕ 0.2mm, 100ts.

RM CORE

Part No.	AL-value(nH/N ²)		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, ϕ 0.18mm, 100ts./RM6:10kHz, 10mV, ϕ 0.2mm, 100ts.

EP CORE

Part No.	AL-value(nH/N ²)		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, ϕ 0.13mm, 100ts./EP10, EP13:10kHz, 10mV, ϕ 0.2mm, 100ts.

T CORE

Part No.	AL-value(nH/N ²)	
	-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, ϕ 0.12mm, 100ts.
T6, T5.84:10kHz, 10mV, ϕ 0.2mm, 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	SMD
H5C4ER11/3.9-Z	11	12.6	4.7	10	
H5C4ER11/5-Z	11.5	12.3	6.4	10	
H5C4ER14.5/6-Z	15.1	16.2	7.3	10	
H5C4EPC10-Z	11	11.7	5.2	8	SMD
H5C4EPC13-Z	14.2	20.6	7.8	10	
H5C4EEM12.7/13.7-Z	13.55	16.8	5	8	SMD
H5C4EEM8/8-Z	9.2	11.2	3.5	8	
H5C4EEM10/10-Z	11.7	14	3.5	10	
H5C4EEM13/13-Z	14.2	16.6	3.5	10	
H5C4EE5-Z	5.7	7.8	4.75	6	SMD
H5C4EE8.9/8-Z	9.3	11.3	4.8	8	
H5C4EP7-Z	13.55	16.8	5	8	Lead-through
H5C4EP10-Z	9.2	11.2	3.5	8	
H5C4EP13-Z	11.7	14	3.5	10	
H5C4RM5Z-12	12.5	12.5	10.5	6	Lead-through
H5C4RM6Z-12	15	15	12.5	6	
H5C4T3.05X1.27X1.27					
H5C4T3.94X1.27X2.23					
H5C4T4X1X2					
H5C4T4.83X1.27X2.29					
H5C4T6X1.5X3					

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