Ferrite for Telecommunication

Pot cores

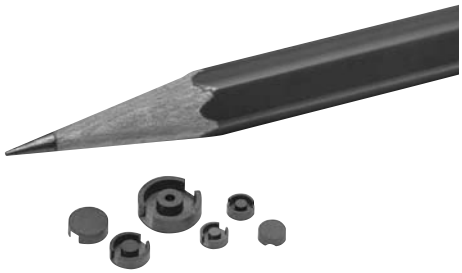
P series

Issue date: April 2011

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Ferrite for Telecommunication
Pot Cores P Series

TDK produces a pot core series. These tiny pot cores are used in a variety of applications, including inductors for wristwatches, special choke coils, and pulse transformers. Some have even been used in miniature power supplies.
Bobbins are available for P5.8/3.3 and P7/4 cores.
Adhesives are usually employed to joint the two halves of the pot core.



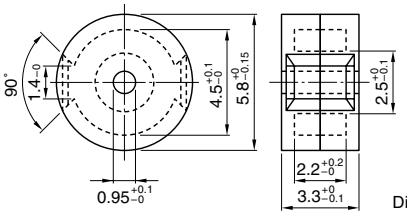
ORDERING CODE SYSTEMS

H5A P5.8/3.3 Z — 5 2 S

- Material
- Size of Pot core
- Z: Without air gap or AL-value: With air gap
- Type of Pot core
- Number of lead slot
- Shape of lead slot

P5.8/3.3 POT CORES

Based on IEC Publication 62317-2.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N²)	Effective permeability (μe)
Without air gap		
H5AP5.8/3.3Z-52S	870±25%	1163
H5C2P5.8/3.3Z-52S	2660 min.	3556

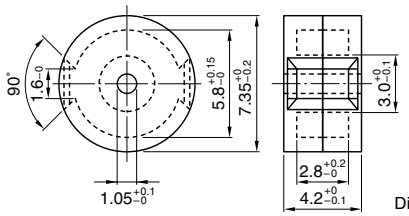
Measuring conditions:
Coil ø0.08mm, 2UEW, 70Ts (for material H5C2), 100Ts(for others)
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm⁻¹	1.68
Effective magnetic path length	ℓe	mm	7.9
Effective cross-sectional area	Ae	mm²	4.7
Effective core volume	Ve	mm³	37
Cross-sectional center pole area	Acp	mm²	4.08
Minimum cross-sectional area	Acp min.	mm²	3.66
Cross-sectional winding area of core	Acw	mm²	2.42
Weight (approx.)		g	0.2

P7/4 POT CORES

Based on IEC Publication 62317-2.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP7/4Z-52S	1200±25%	1366
H5C2P7/4Z-52S	4970±30%	5656

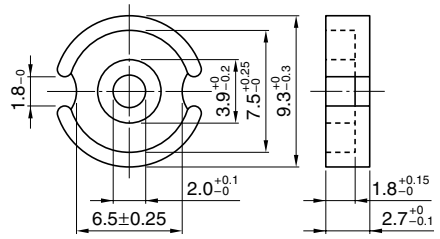
Measuring conditions:
Coil ø0.1mm, 2UEW, 70Ts (for material H5C2), 100Ts(for others)
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	1.43
Effective magnetic path length	ℓe	mm	10
Effective cross-sectional area	Ae	mm2	7.0
Effective core volume	Ve	mm3	70
Cross-sectional center pole area	Acp	mm2	6.05
Minimum cross-sectional area	Acp min.	mm2	5.57
Cross-sectional winding area of core	Acw	mm2	4.31
Weight (approx.)		g	0.5

P9/5 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP9/5Z-52H	1570±25%	1562
H5C2P9/5Z-52H	6030±30%	5998

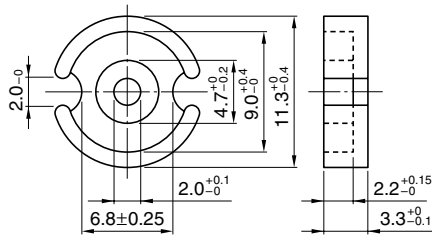
Measuring conditions:
Coil ø0.1mm, 2UEW, 70Ts (for material H5C2), 100Ts(for others)
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	1.24
Effective magnetic path length	ℓe	mm	12.4
Effective cross-sectional area	Ae	mm2	10.0
Effective core volume	Ve	mm3	124
Cross-sectional center pole area	Acp	mm2	8.04
Minimum cross-sectional area	Acp min.	mm2	7.29
Cross-sectional winding area of core	Acw	mm2	7.17
Weight (approx.)		g	0.8

P11/7 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP11/7Z-52H	2320±25%	1765
H5C2P11/7Z-52H	8220±30%	6253

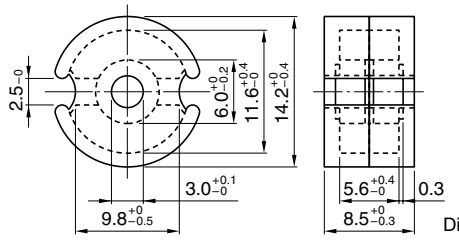
Measuring conditions:
Coil ø0.18mm, 2UEW, 70Ts (for material H5C2), 100Ts(for others)
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	0.969
Effective magnetic path length	ℓe	mm	15.5
Effective cross-sectional area	Ae	mm2	16.0
Effective core volume	Ve	mm3	248
Cross-sectional center pole area	Acp	mm2	13.3
Minimum cross-sectional area	Acp min.	mm2	12.4
Cross-sectional winding area of core	Acw	mm2	10.5
Weight (approx.)		g	1.8

P14/8 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP14/8Z-52B	3000±25%	1884
H5C2P14/8Z-52B	11500±30%	7221

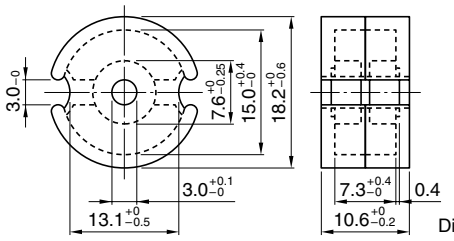
Measuring conditions:
Coil ø0.18mm, 2UEW, 100Ts
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	0.789
Effective magnetic path length	ℓe	mm	19.8
Effective cross-sectional area	Ae	mm2	25.1
Effective core volume	Ve	mm3	497
Cross-sectional center pole area	Acp	mm2	19.8
Minimum cross-sectional area	Acp min.	mm2	18.4
Cross-sectional winding area of core	Acw	mm2	17.1
Weight (approx.)		g	3.2

P18/11 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N²)	Effective permeability (μe)
Without air gap		
H5AP18/11Z-52B	4500±25%	2138
H5C2P18/11Z-52B	16000±30%	7601

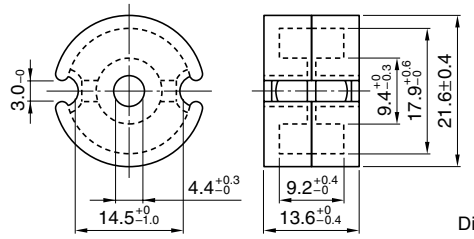
Measuring conditions:
Coil ø0.30mm, 2UEW, 100Ts
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm⁻¹	0.596
Effective magnetic path length	ℓe	mm	25.8
Effective cross-sectional area	Ae	mm²	43.3
Effective core volume	Ve	mm³	1117
Cross-sectional center pole area	Acp	mm²	36.3
Minimum cross-sectional area	Acp min.	mm²	34.4
Cross-sectional winding area of core	Acw	mm²	29.0
Weight (approx.)		g	6.7

P22/13 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N²)	Effective permeability (μe)
Without air gap		
H5AP22/13Z-52H	5900±25%	2333
H5C2P22/13Z-52H	19500±30%	7700[at 21.7mT]
	16000+40/–30%	6318*[at 0.5mT]

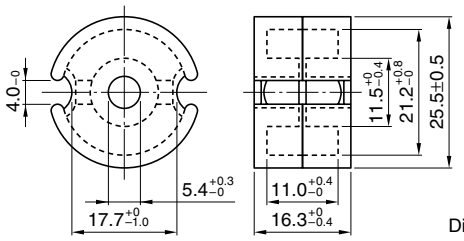
* Reference specification when 0.5mT is applied to cores.
Measuring conditions:
Coil ø0.35mm, 2UEW, 100Ts
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm⁻¹	0.497
Effective magnetic path length	ℓe	mm	31.5
Effective cross-sectional area	Ae	mm²	63.4
Effective core volume	Ve	mm³	1997
Cross-sectional center pole area	Acp	mm²	51.6
Minimum cross-sectional area	Acp min.	mm²	47.7
Cross-sectional winding area of core	Acw	mm²	42.1
Weight (approx.)		g	12.7

P26/16 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP26/16Z-52H	7800±25%	2483
H5C2P26/16Z-52H	24500±30%	7800[at 18.4mT]
	20000+40/–30%	6367*[at 0.5mT]

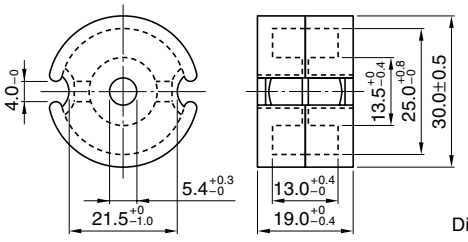
* Reference specification when 0.5mT is applied to cores.
Measuring conditions:
Coil ø0.40mm, 2UEW, 100Ts
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	0.40
Effective magnetic path length	ℓe	mm	37.6
Effective cross-sectional area	Ae	mm2	94
Effective core volume	Ve	mm3	3534
Cross-sectional center pole area	Acp	mm2	76.1
Minimum cross-sectional area	Acp min.	mm2	71.3
Cross-sectional winding area of core	Acw	mm2	57.7
Weight (approx.)		g	21.1

P30/19 POT CORES

Based on IEC Publication 62317-2 and JIS C 2516.



Dimensions in mm

TYPICAL CHARACTERISTICS

Part No.	AL-value (nH/N2)	Effective permeability (μe)
Without air gap		
H5AP30/19Z-52H	9800±25%	2573
H5C2P30/19Z-52H	32000±30%	8400[at 16.5mT]
	25000+40/–30%	6563*[at 0.5mT]

* Reference specification when 0.5mT is applied to cores.
Measuring conditions:
Coil ø0.40mm, 2UEW, 100Ts
Frequency 1kHz
Current level 0.5mA

PARAMETER

Core factor	C1	mm−1	0.33
Effective magnetic path length	ℓe	mm	45.2
Effective cross-sectional area	Ae	mm2	137
Effective core volume	Ve	mm3	6192
Cross-sectional center pole area	Acp	mm2	115
Minimum cross-sectional area	Acp min.	mm2	109
Cross-sectional winding area of core	Acw	mm2	79.9
Weight (approx.)		g	35.3