DATA SHEET

P14/8
P cores and accessories

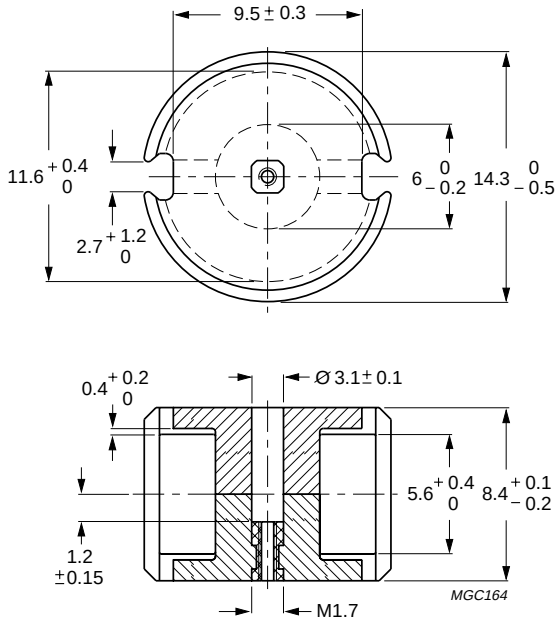
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.789	mm^{-1}
V_e	effective volume	495	mm^3
l_e	effective length	19.8	mm
A_e	effective area	25.1	mm^2
A_{min}	minimum area	19.8	mm^2
m	mass of set	≈ 3.2	g



Dimensions in mm.

Fig.1 P14/8 core set.

Core sets for filter applications

Clamping force for A_L measurements, 60 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER (WITH NUT)	TYPE NUMBER (WITHOUT NUT)
3D3 sup	40 ± 3%	≈ 25	≈ 1170	P14/8-3D3-E40/N	P14/8-3D3-E40
	63 ± 3%	≈ 40	≈ 650	P14/8-3D3-E63/N	P14/8-3D3-E63
	100 ± 3%	≈ 63	≈ 360	P14/8-3D3-E100/N	P14/8-3D3-E100
	1000 ± 25%	≈ 630	≈ 0	–	P14/8-3D3
3H3 sup	160 ± 3%	≈ 100	≈ 220	P14/8-3H3-A160/N	P14/8-3H3-A160
	250 ± 3%	≈ 157	≈ 130	P14/8-3H3-A250/N	P14/8-3H3-A250
	315 ± 3%	≈ 198	≈ 100	P14/8-3H3-A315/N	P14/8-3H3-A315
	400 ± 3%	≈ 251	≈ 75	P14/8-3H3-A400/N	P14/8-3H3-A400
	2150 ± 25%	≈ 1350	≈ 0	–	P14/8-3H3

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 60 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C81	63 ± 3%	≈ 40	≈ 680	P14/8-3C81-E63
	100 ± 3%	≈ 63	≈ 390	P14/8-3C81-A100
	160 ± 3%	≈ 100	≈ 220	P14/8-3C81-A160
	250 ± 3%	≈ 157	≈ 130	P14/8-3C81-A250
	315 ± 3%	≈ 198	≈ 100	P14/8-3C81-A315
	2800 ± 25%	≈ 1760	≈ 0	P14/8-3C81
3C91 des	2800 ± 25%	≈ 1760	≈ 0	P14/8-3C91
3F3	63 ± 3%	≈ 40	≈ 680	P14/8-3F3-E63
	100 ± 3%	≈ 63	≈ 390	P14/8-3F3-A100
	160 ± 3%	≈ 100	≈ 220	P14/8-3F3-A160
	250 ± 3%	≈ 157	≈ 130	P14/8-3F3-A250
	315 ± 3%	≈ 198	≈ 100	P14/8-3F3-A315
	2000 ± 25%	≈ 1260	≈ 0	P14/8-3F3

Core sets of high permeability grades

Clamping force for A_L measurements, 60 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E27	5750 ± 25%	≈ 3610	≈ 0	P14/8-3E27

Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C81	≥320	≤ 0.1	–	–	–
3C91	≥315	–	≤ 0.03(1)	≤ 0.22(1)	–
3F3	≥315	–	≤ 0.06	–	≤ 0.1

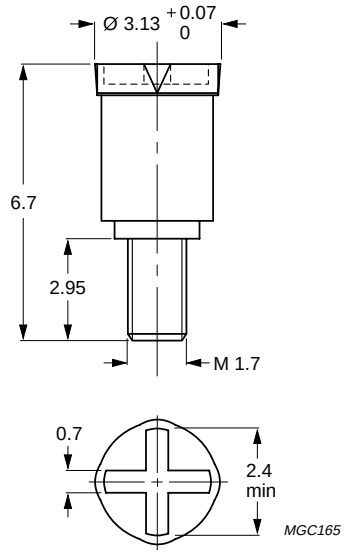
Note

1. Measured at 60 °C.

INDUCTANCE ADJUSTERS

General data

PARAMETER	SPECIFICATION
Material of head and thread	polypropylene (PP), glass fibre reinforced
Maximum operating temperature	125 °C



Dimensions in mm.

Fig.2 P14/8 inductance adjuster.

Inductance adjuster selection cha sup (applies to all types)

GRADE	A_L (nH)	TYPES FOR LOW ADJUSTMENT	ΔL/L(1)	TYPES FOR MEDIUM ADJUSTMENT	ΔL/L(1)	TYPES FOR HIGH ADJUSTMENT	ΔL/L(1)
3H3	100	–	–	ADJ-P14-ORANGE	14	–	–
	160	–	–	ADJ-P14-WHITE	17	ADJ-P14-BROWN	24
	250	ADJ-P14-WHITE	10	ADJ-P14-BROWN	15	–	–
	315	ADJ-P14-WHITE	8	–	–	–	–
	400	ADJ-P14-BROWN	9	–	–	–	–
	630	ADJ-P14-BROWN	4	–	–	–	–
3D3	40	–	–	–	–	ADJ-P14-ORANGE	24
	63	–	–	–	–	ADJ-P14-ORANGE	20
	100	ADJ-P14-ORANGE	11	–	–	–	–

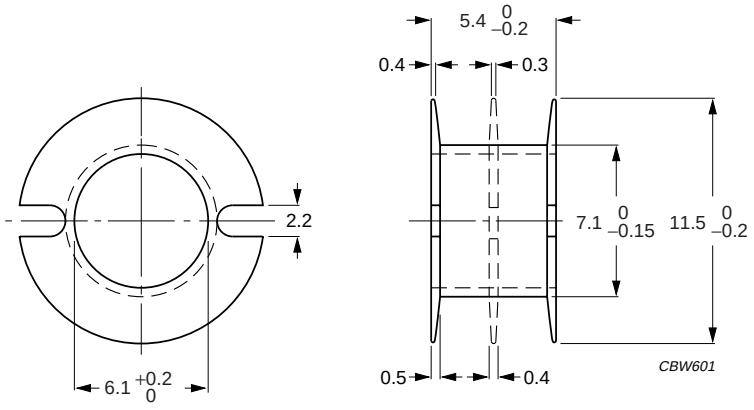
Note

1. Maximum adjustment range.

COIL FORMERS

General data for CP-P14/8 coil former

PARAMETER	SPECIFICATION
Coil former material	polybutyleneterephtalate (PBT), glass reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E45329 (R)
Maximum operating temperature	155 °C, *"IEC 60085"*, class F



Dimensions in mm.

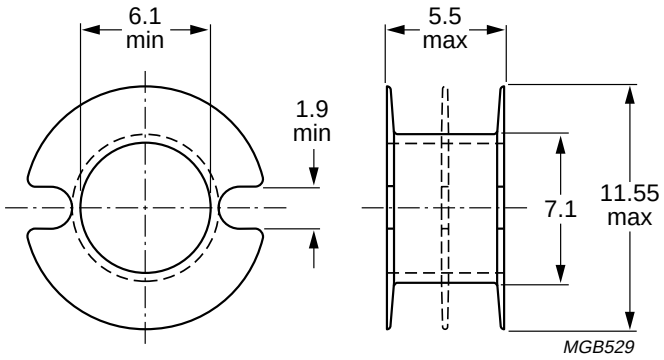
Fig.3 Coil former CP-P14/8.

Winding data for CP-P14/8 coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8.8	4.1	28.9	CP-P14/8-1S
2	2×4.0	2×1.85	28.9	CP-P14/8-2S

General data for CP-P14/8-A coil former

PARAMETER	SPECIFICATION
Coil former material	acetal (POM), glass reinforced, flame retardant in accordance with *"UL 94-HB"*; UL file number E66288(R)
Maximum operating temperature	155 °C, *"IEC 60085"*, class F



Dimensions in mm.

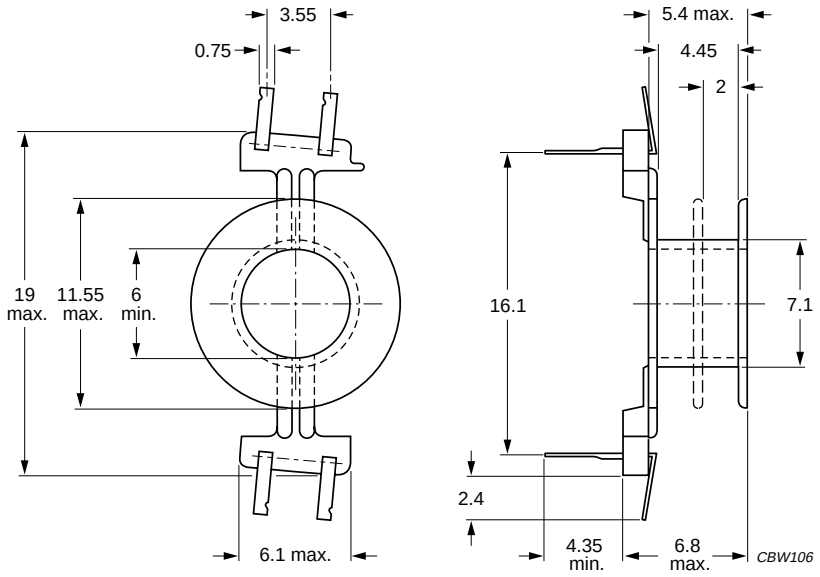
Fig.4 Coil former CP-P14/8-A.

Winding data for CP-P14/8-A coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
3	3×2.19	3×1.2	29.3	CP-P14/8-3S-A

General data 4-pins P14/8 coil former for PCB mounting

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E41938(M)
Maximum operating temperature	130 °C, *"IEC 60085"* , class B
Pin material	copper-zinc alloy (CuZn), tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing
Resistance to soldering heat	*"IEC 60068-2-20"*, Part 2, Test Tb, method 1B, 350 °C, 3.5 s
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1, 235 °C, 2 s



Dimensions in mm.

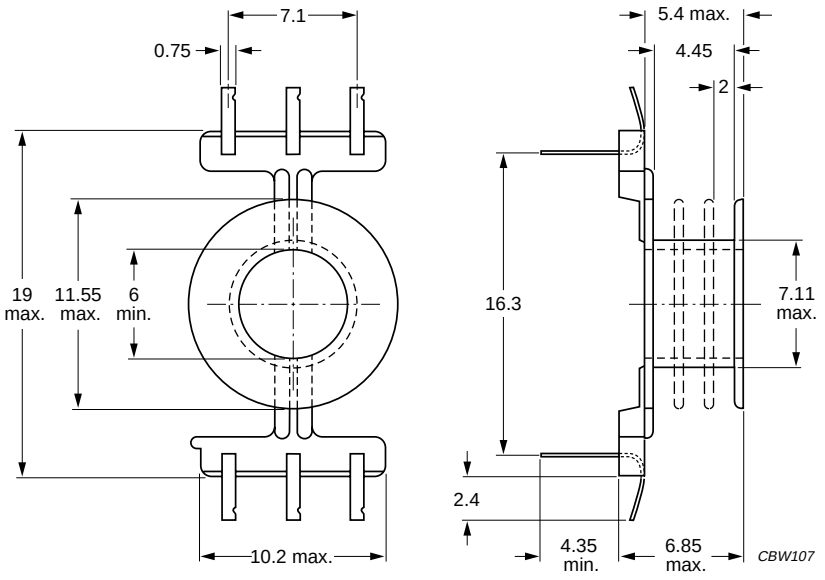
Fig.5 P14/8 coil former for PCB mounting; 4-pins.

Data for 4-pins P14/8 coil former for PCB mounting

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	LENGTH OF PINS (mm)	TYPE NUMBER
1	8.65	4.4	29.0	4.4	CPV-P14/8-1S-4SPD
1	8.65	4.4	29.0	6.8	CPV-P14/8-1S-4SPDL
2	2×3.87	2×2.0	29.0	4.4	CPV-P14/8-2S-4SPD
2	2×3.87	2×2.0	29.0	6.8	CPV-P14/8-2S-4SPDL

General data 6-pins P14/8 coil former for PCB mounting

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E41938(M)
Maximum operating temperature	130 °C, *"IEC 60085"* , class B
Pin material	copper-zinc alloy (CuZn), tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing
Resistance to soldering heat	*"IEC 60068-2-20"*, Part 2, Test Tb, method 1B, 350 °C, 3.5 s
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1, 235 °C, 2 s



Dimensions in mm.

Fig.6 P14/8 coil former for PCB mounting; 6-pins.

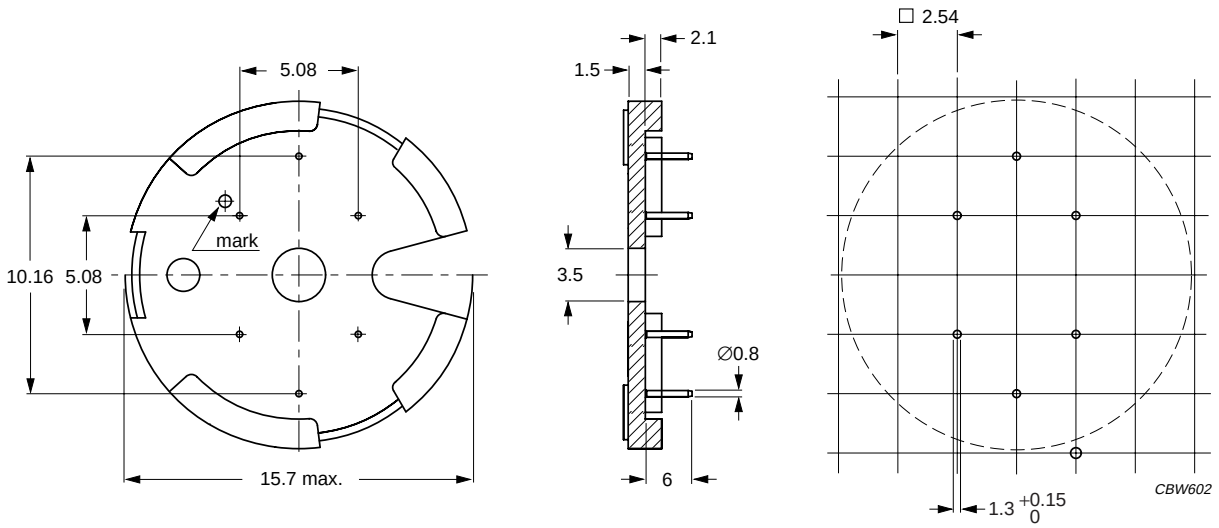
Data for 6-pins P14/8 coil former for PCB mounting

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	LENGTH OF PINS (mm)	TYPE NUMBER
1	8.65	4.4	29.0	4.4	CPV-P14/8-1S-6PD
1	8.65	4.4	29.0	6.8	CPV-P14/8-1S-6PDL
2	2×3.87	2×2.0	29.0	4.4	CPV-P14/8-2S-6PD
2	2×3.87	2×2.0	29.0	6.8	CPV-P14/8-2S-6PDL

MOUNTING PARTS

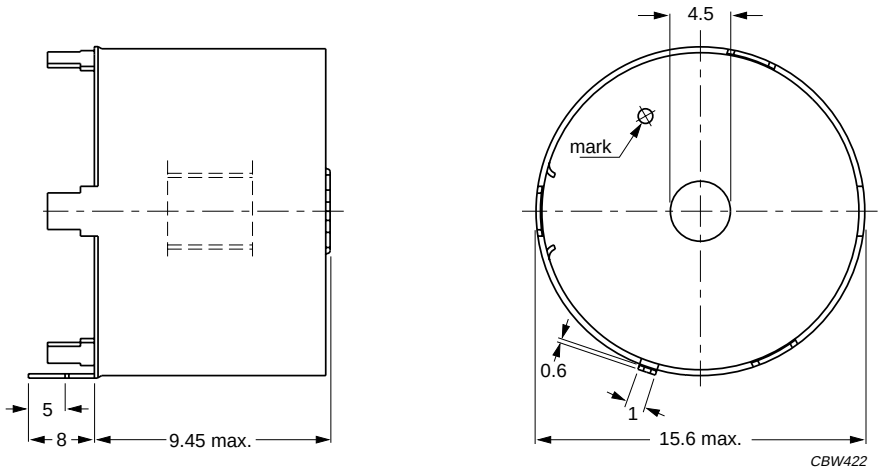
General data for mounting parts

ITEM	REMARKS	FIGURE	TYPE NUMBER
Tag plate	material: phenolformaldehyde (PF), glass reinforced	7	TGP-P14/8-6P
	flame retardant: in accordance with *"UL 94V-0"*; UL file number E167521 (M)		
	maximum operating temperature: 180 °C, *"IEC 60085"*, class H		
	pins: copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated		
	resistance to soldering heat in accordance with *"IEC 60068-2-20"*, Part 2, Test Tb, method 1B: 350 °C, 3.5 s		
	solderability in accordance with *"IEC 60068-2-20"*, Part 2, Test Ta, method 1: 235 °C, 2 s		
Container	copper-zinc alloy (CuZn), SnPb-plated, transition to lead-free (Sn) ongoing	8	CON-P14/8
	earth pins: presoldered		
Spring	CrNi-steel	9	SPR-P14/8
	spring force: ≈60 N when mounted		
Clamp	spring steel, tin-plated	10	CLM/TP-P14/8
Washer	phenolformaldehyde (PF)	11	WAS-CLM/TP-P14/8



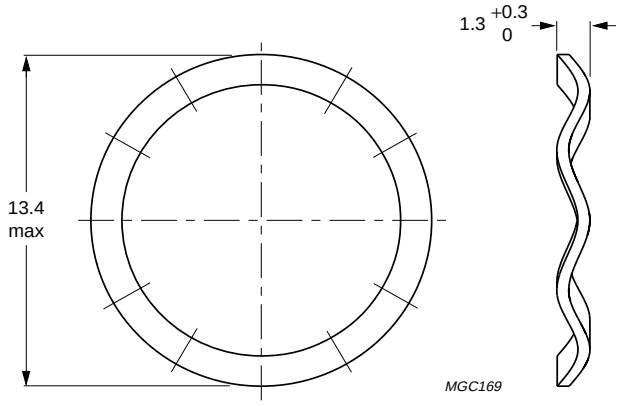
Dimensions in mm.

Fig.7 Tag plate: TGP-P14/8.



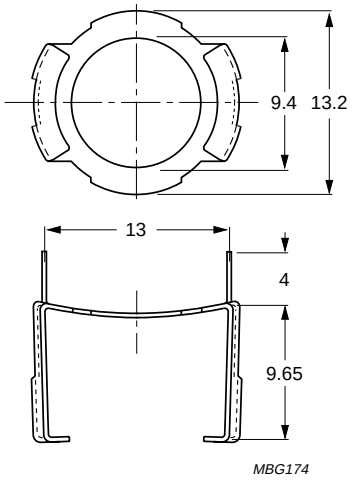
Dimensions in mm.

Fig.8 Container: CON-P14/8.



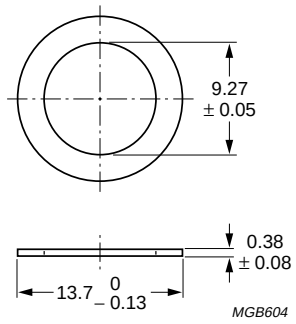
Dimensions in mm.

Fig.9 Spring: SPR-P14/8.



Dimensions in mm.

Fig.10 Clamp: CLM/TP-P14/8.



Dimensions in mm.

Fig.11 Washer: WAS-CLM/TP-P14/8.

DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
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Preferred		These products are recommended for use in current designs and are available via our sales channels.
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