

# DATA SHEET

**E34/14/9**

**E cores and accessories**

Supersedes data of September 2004

2008 Sep 01

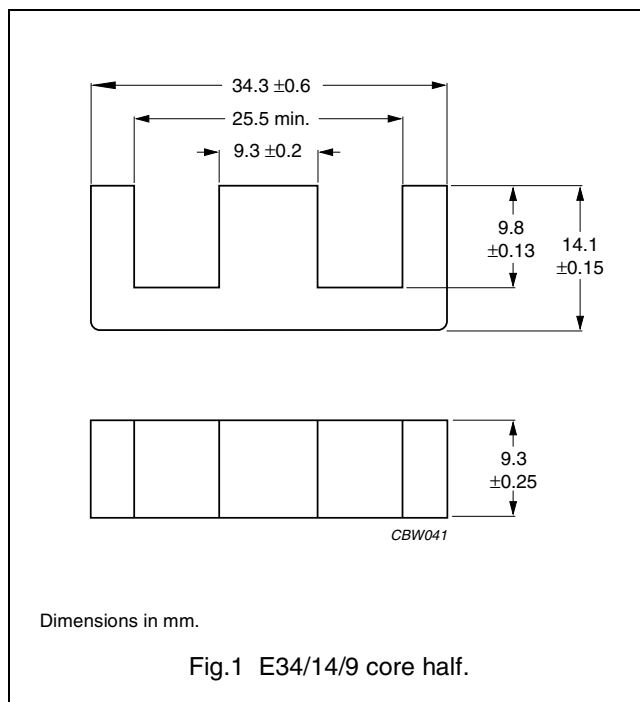


**FERROXCUBE**  
A YAGEO COMPANY

**CORE SETS**

**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.850	mm <sup>-1</sup>
$V_e$	effective volume	5590	mm <sup>3</sup>
$l_e$	effective length	69.3	mm
$A_e$	effective area	80.7	mm <sup>2</sup>
$A_{min}$	minimum area	80.7	mm <sup>2</sup>
m	mass of core half	≈ 14	g



**Core halves**

$A_L$  measured in combination with a non-gapped core half, clamping force for  $A_L$  measurements  $40 \pm 20$  N, unless stated otherwise.

GRADE	$A_L$ (nH)	$\mu_e$	TOTAL AIR GAP ( $\mu$ m)	TYPE NUMBER
3C81	100 ± 5% <sup>(1)</sup>	≈ 68	≈ 1520	E34/14/9-3C81-E100
	160 ± 5% <sup>(1)</sup>	≈ 109	≈ 820	E34/14/9-3C81-E160
	250 ± 5%	≈ 171	≈ 460	E34/14/9-3C81-A250
	315 ± 5%	≈ 215	≈ 350	E34/14/9-3C81-A315
	400 ± 8%	≈ 273	≈ 260	E34/14/9-3C81-A400
	630 ± 15%	≈ 431	≈ 140	E34/14/9-3C81-A630
	3200 ± 25%	≈ 2190	≈ 0	E34/14/9-3C81
3C90	100 ± 5% <sup>(1)</sup>	≈ 68	≈ 1520	E34/14/9-3C90-E100
	160 ± 5% <sup>(1)</sup>	≈ 109	≈ 820	E34/14/9-3C90-E160
	250 ± 5%	≈ 171	≈ 460	E34/14/9-3C90-A250
	315 ± 5%	≈ 215	≈ 350	E34/14/9-3C90-A315
	400 ± 8%	≈ 273	≈ 260	E34/14/9-3C90-A400
	630 ± 15%	≈ 431	≈ 140	E34/14/9-3C90-A630
	2440 ± 25%	≈ 1670	≈ 0	E34/14/9-3C90
3C91 <b>des</b>	3200 ± 25%	≈ 2190	≈ 0	E34/14/9-3C91
3C92 <b>des</b>	1850 ± 25%	≈ 1250	≈ 0	E34/14/9-3C92
3C94	2440 ± 25%	≈ 1760	≈ 0	E34/14/9-3C94
3C96 <b>des</b>	2125 ± 25%	≈ 1450	≈ 0	E34/14/9-3C96

## E cores and accessories

E34/14/9  
(E375)

GRADE	$A_L$ (nH)	$\mu_e$	TOTAL AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3F3	$100 \pm 5\%^{(1)}$	$\approx 68$	$\approx 1520$	E34/14/9-3F3-E100
	$160 \pm 5\%^{(1)}$	$\approx 109$	$\approx 820$	E34/14/9-3F3-E160
	$250 \pm 5\%$	$\approx 171$	$\approx 460$	E34/14/9-3F3-A250
	$315 \pm 5\%$	$\approx 215$	$\approx 350$	E34/14/9-3F3-A315
	$400 \pm 8\%$	$\approx 273$	$\approx 260$	E34/14/9-3F3-A400
	$630 \pm 15\%$	$\approx 431$	$\approx 140$	E34/14/9-3F3-A630
	$2125 \pm 25\%$	$\approx 1450$	$\approx 0$	E34/14/9-3F3
3F35 <small>des</small>	$1680 \pm 25\%$	$\approx 1150$	$\approx 0$	E34/14/9-3F35

**Note**

1. Measured in combination with an equal gapped core half, clamping force for  $A_L$  measurements,  $40 \pm 20$  N.

**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	$\geq 320$	$\leq 1.2$	–	–	–
3C90	$\geq 320$	$\leq 0.56$	$\leq 0.63$	–	–
3C91	$\geq 320$	–	$\leq 0.38^{(1)}$	$\leq 2.3^{(1)}$	–
3C92	$\geq 370$	–	$\leq 0.5$	$\leq 2.9$	–
3C94	$\geq 320$	–	$\leq 0.5$	$\leq 2.9$	–
3C96	$\geq 340$	–	$\leq 0.38$	$\leq 2.3$	–
3F3	$\geq 320$	–	$\leq 0.62$	–	$\leq 1.1$
3F35	$\geq 300$	–	–	–	–

**Properties of core sets under power conditions (continued)**

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	f = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3C96	$\geq 340$	$\leq 2.1$	–	–	–
3F3	$\geq 320$	–	–	–	–
3F35	$\geq 300$	$\leq 0.75$	$\leq 5.9$	–	–

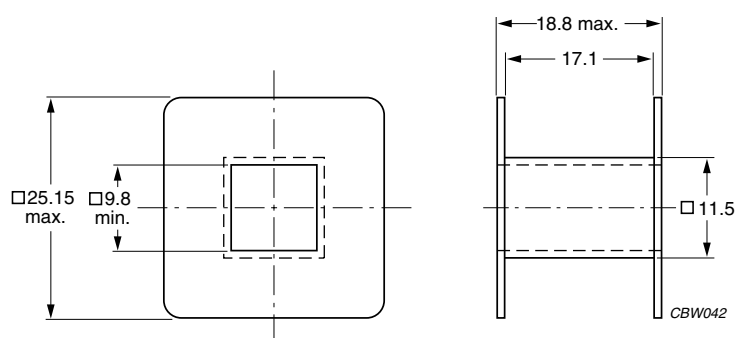
**Note**

1. Measured at 60 °C.

**COIL FORMERS**

**General data for E34/14/9 coil former**

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with "UL 94-HB"; UL file number E41938(M)
Maximum operating temperature	130 °C, "IEC 60085", class B



Dimensions in mm.

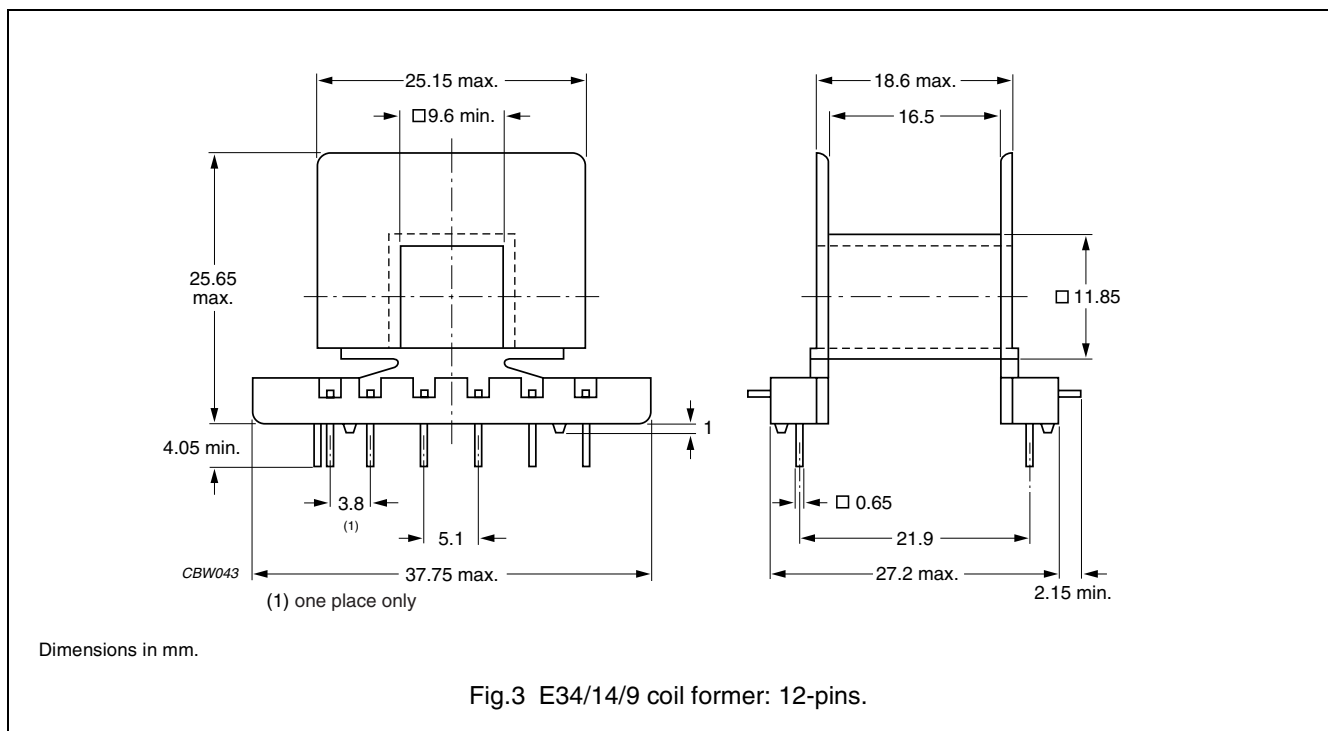
Fig.2 E34/14/9 coil former.

**Winding data and area product for E34/14/9 coil former without pins**

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm <sup>2</sup> )	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	111	17.1	67.0	8960	CP-E34/14/9-1S

General data for 12-pins E34/14/9 coil former

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with "UL 94-HB"; UL file number E41938(M)
Maximum operating temperature	130 °C, "IEC 60085", class B
Pin material	copper-zinc alloy (CuZnP), tin (Sn) plated
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



Winding data and area product for 12-pins E34/14/9 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm <sup>2</sup> )	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	102	16.5	69.0	8230	CPH-E34/14/9-1S-12PD-Z

## E cores and accessories

E34/14/9  
(E375)




## 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.

## DISCLAIMER

**Life support applications** — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

## PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
<b>Prototype</b>		These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
<b>Design-in</b>		These products are recommended for new designs.
<b>Preferred</b>		These products are recommended for use in current designs and are available via our sales channels.
<b>Support</b>		These products are <b>not</b> recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.